

MANUAL

RESEARCH PROJECT

B.Ed (1.5 YEAR/2.5 YEAR)

Code No: 8613



**DEPARTMENT OF EARLY CHILDHOOD EDUCATION AND
ELEMENTARY TEACHER EDUCATION
FACULTY OF EDUCATION
ALLAMA IQBAL OPEN UNIVERSITY ISLAMABAD**

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1. COURSE DESCRIPTION

Research project is a practical course in which the trainee teachers will be involved in the action research process. The research project will be the individual work of the student. The course will enable them to plan, observe, act and reflect during action research process. A trainee teacher conducting research project will be supervised by a supervisor. The research will be conducted by each trainee teacher individually. The trainee teacher will select a problem of his/her own interest related to an area of education, for example "effectiveness of use of AV aids within classroom on the academic achievement of secondary school students in Pakistan Studies", "problems faced by students in understanding English Literature at Matric level", "Effectiveness of discussion method for developing social skills of seventh class students" and "a study to assess the effect of exam anxiety on academic achievement of eighth class students". The trainee teacher will select appropriate research design and research instrument to carry out the research for identified problem under the supervision of tutor. The minimum time period for completing the research project is 06 months. The trainee teacher will write research report after the successful completion of research project. The research report will be assessed on the basis of criteria defined in assessment section of this manual.

2. COURSE LEARNING OUTCOMES

At the end of this course, trainee teachers will be able to:

- Identify an educational problem within classroom/school
- Develop a research proposal for a research problem
- Implement a research study plan according to the research proposal
- Collect data about an educational problem using a research instrument
- Analyze the data using statistical techniques
- Use APA style for citing and referencing research work
- Write a project report.

3. TEACHING-LEARNING METHODOLOGY

The research project is an activity-based course. In this course, trainee teachers and supervisors are involved in following activities:

- i. One-to-one meetings between trainee teacher and supervisor about defining research problem, finalizing research methodology and research proposal
- ii. Presentation of progress report of research project by trainee teachers to supervisor after every one/two weeks
- iii. Discussion between trainee teacher and supervisor about collection and analysis of data
- iv. On-going discussion and feedback between trainee teacher and supervisor about report writing of research project

4. RESPONSIBILITIES OF TRAINEE TEACHER AND SUPERVISOR

Trainee Teacher is expected to actively work for completing the research project within time. The supervisor would provide guidance and support to trainee teachers for successfully carrying out research project. However, it is the responsibility of the trainee teacher to complete his/her research project in time. The responsibilities of supervisor and trainee teacher during research project are as follows:

S/No.	Stakeholder	Responsibilities
1.	Supervisor	<ul style="list-style-type: none"> i. Assisting trainee teacher in selection of topic and formulating statement of the problem ii. Helping trainee teacher in finalizing the research proposal iii. Guiding trainee teacher for locating resources for review of related literature iv. Monitoring research progress of trainee teacher v. Providing motivation and feedback to trainee teacher on his/her performance vi. Supervising trainee teacher in selecting/developing a research tool/instrument and collecting required data vii. Providing technical support to trainee teacher for organizing and analyzing the collected data viii. Guiding trainee teacher in writing discussion, findings and conclusion of the project report ix. Ensuring that trainee teacher follows APA style to write project proposal and report x. Reviewing the draft of the project and provide feedback to trainee teacher in preparation of the final draft of project report xi. Addressing any issue faced by trainee teacher during the research project related to data collection, data analysis and/or report writing. xii. Ensuring the timely completion of research project by the trainee teacher by giving him/her deadlines for various stages of research project
2.	Trainee Teacher	<ul style="list-style-type: none"> i. Selecting an educational problem for research project ii. Discussing meeting schedules with your supervisor iii. Discussing the research problem with your supervisor and defining statement of the problem iv. Preparing a research proposal as per guidelines given in the manual after consulting the supervisor v. Finalizing your research proposal by discussing it with your supervisor vi. Working in an organized manner for implementing your research proposal

		<ul style="list-style-type: none"> vii. Completing the tasks assigned by your supervisor for each meeting viii. Discussing your research project with your supervisor at each step i.e., selection/construction of research instrument, data collection, data analysis, report writing and recommendations for future researches. ix. Receiving feedback from supervisor about your progress on research proposal/project x. Improving your written communication skill for writing a research report xi. Meeting the deadlines given by your supervisor for completing various stages of your research project i.e., finalization of research proposal, selection/construction of research tool, completion of data collection phase, analysis of collected data, write up process of results and report writing, and submission of project report to supervisor.
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5. SCHEDULE OF TRAINEE TEACHER -SUPERVISOR MEETINGS DURING RESEARCH PROJECT

The supervisor will prepare and communicate to trainee teacher a schedule of meetings so that the trainee teacher may interact with him/her after every one/two weeks. The purpose of these meetings is to monitor the progress and guide in the research work of trainee teacher. Trainee teacher can present his/her progress report to the supervisor during these meetings. The supervisor will give comments, assign further tasks, and provide guidance in the research project. The supervisor can also visit the designated research site of a trainee teacher. The supervisor can observe one or more interventions at the research site to check the progress of research project and guide student teacher for further procedure.

The supervisor-trainee teacher meetings are meant to facilitate the trainee teacher in research project. Trainee teacher can attend all or some of these meetings depending upon his/her need and progress in the research work. However, trainee teacher must discuss each and every step of the research project with the supervisor. The tentative schedule of supervisor-trainee teacher meetings is given below. However, minor amendments can be made to make adjustment to local circumstances.

Table 1: Schedule of Supervisor-Trainee Teacher Meeting

S/No.	Meeting	Tasks to be Performed in the Meeting
1.	First Meeting	<ul style="list-style-type: none"> i. Discussion about research problem ii. Refinement of research proposal
2.	Second Meeting	<ul style="list-style-type: none"> i. Consider the required data and most appropriate tool(s) for data collection ii. Finalization of research proposal iii. Guidance about reviewing the related literature
3.	Third Meeting	<ul style="list-style-type: none"> i. Selection/construction of research instrument ii. Discussion about review of the related literature done by trainee teacher
4.	Fourth Meeting	<ul style="list-style-type: none"> i. Finalization of research instrument ii. Guiding about determining the validity and reliability of research instrument iii. Discussion about getting consent and handling entry matters with relevant authorities such as school head and teachers etc. for data collection iv. Discussion about review of the related literature done by trainee teacher

5.	Fifth Meeting	<ul style="list-style-type: none"> i. Discussion about fieldwork and data collection procedure ii. Discussion about review of the related literature done by trainee teacher
6.	Sixth Meeting	Discussion about data analysis and the report writing process
7.	Seventh Meeting	Discussion and guidance about data analysis and report writing
8.	Eighth Meeting	Discussion about report writing
9.	Ninth Meeting	<ul style="list-style-type: none"> i. Final discussion about report writing ii. Submission of project report

6. ASSESSMENT

Research project is a practical course. There will be no written exam and viva voce in the course. The research project after its completion will be submitted to regional center of Allama Iqbal Open University by the trainee teacher with the signature of supervisor. Research project submission approval form (appendix E) duly signed by supervisor must be attached with research project report at the time of final submission. The research project must be properly bind at the time of submission. The soft copy of research project report in CD must also be submitted by the researcher at the time of final submission. The trainee teacher will be assessed by the evaluator on his/her report of research project. Trainee teachers will attend compulsory workshop of 03 days duration before working on the research project.

The minimum time period for completion of research project will be 06 months. In case of inability to complete research project within stipulated time, a student may be given two chances with next offering of course "Research Project (Course Code: 8613)" to complete the research project. If a student has been unable to complete a research project after availing two 01 semester extensions, he/she would be considered fail in Research Project (Course Code: 8613). In this situation, he/she has to take fresh admission in Research Project (Course Code: 8613).

7. MARKS DISTRIBUTION AND PASSING MARKS

Passing marks in research project are 50%. Plagiarism of research project must be below 19% as per HEC criteria otherwise it will not be accepted. The research project will be evaluated on the criteria given below. Upon evaluation, the research project may be sent back to students to incorporate necessary changes, if applicable. There will be no viva voce after completion of research project. The percentage for various components is as follows:

Table 2: Marks Distribution for Components of Research Project

S/No.	Component of Research Project	Comments	Marks
1.	Formatting (margins of 1” on top, bottom and right side of page while 1.5” margin on left side of page, Page number on top right corner, double line spacing, font size (chapter heading 16 bold, main headings 14 bold and text 12 size)		10
2.	Preliminary section and references are given (title page, approval sheet, declaration, acknowledgement, abstract, table of contents, list of figures, list of tables, list of abbreviations, list of appendices, references)		05
3.	Abstract (approx.150-250 words) contains information about research objectives, research design, population, sampling technique, sample, research instrument(s), results and recommendations.		10
4.	Introduction (2-3 pages) provides background information about research problem, purpose of the study and in-text citation of resources such as books, research articles etc. consulted. There is a logical connection between paragraphs of introduction section.		10
5.	Statement of the problem, objectives of the study, research question and/or hypotheses and significance of the study are clearly described and aligned together. Operational definitions of variable(s) and specific terms are provided.		05
6.	Research Methodology clearly describes research design, population, sampling technique used, sample size, research tool(s), validity and reliability of research tool(s) and data analysis techniques. Research methodology section is aligned with statement of the problem and objectives of the research study.		20

7.	Findings and discussion are written on the basis of analysis of collected data. Discussion includes properly cited and relevant scholarly work such as books, research articles etc. related to the research problem. Findings and discussion are clearly written.		15
8.	Conclusion and recommendations are written in connection with research objectives of the study. Conclusion and recommendations are clearly written.		15
9.	References (APA referencing style is used for referencing throughout the research proposal/project.)		10
Total			100

8. WORKSHOP

Workshop of 03 days duration is a mandatory part of this course. It is compulsory to attend the workshop for passing the course. Workshop will be conducted by the Directorate of Regional Services (DRS). Workshop will provide procedures and guidelines for successfully completing research project.

During workshop, the trainee teacher will finalize his/her research topic and the supervisor's name for research project. For this purpose, the workshop coordinator and two resource persons will finalize the research topic and supervisor name for each student. At the end of workshop, trainee teachers are required to finalize their research proposals and submit it to their respective supervisors. The tentative program for workshop is given below. However, minor amendments can be made in it to adjust to local circumstances.

Table 03: Program of Workshop

Day	Activity	Responsibility	Time	Duration
01	Session-I: Inauguration of the Workshop, communication of purpose, pattern, schedule of workshop & research project	Officer from concerned Regional Centre of the University/Faculty Member in case of Workshop in Main Campus	02:00 p.m. to 03:00 p.m.	01 Hour
	Session-II: Consulting online databases and resources	Resource person	03:00 p.m. to 04:00 p.m.	01 Hour
	Session III: Selection of Research Problem, formulation of statement of the problem, research objectives, research questions and/ or hypotheses	Resource person	04:00 to 05:00 p.m.	01 Hour
	Session-IV: Writing background of the study and review of related literature	Tutor & Trainee Teachers	05:00 p.m. to 06:00 p.m.	01 Hour
	Session-V: Plagiarism, its types & ways to avoid plagiarism	Tutor & Trainee Teachers	06:00 p.m. to 07:00 p.m.	01 Hour
02	Session I: Practice on developing research proposal, paraphrasing related research work and, using APA style of formatting and referencing	Resource Person	02:00 p.m. to 03:00 p.m.	01 Hour
	Session II: Time Management	Resource Person, Tutor & Trainee Teachers	03:00 p.m. to 04:00 p.m.	01 Hour

	Session III: Pre-requisite for data collection: pilot-testing of research tool	Resource Person	04:00 p.m. to 05:00 p.m.	01 Hour
	Session IV: Pre-requisite for data collection: Data collection letter and informed consent from authority	Resource Person	05:00 p.m. to 06:00 p.m.	01 Hour
	Session V: Research Ethics for data collection with respect to respondents: Informed consent, voluntary participation, confidentiality, anonymity, privacy and physical & psychological safety	Tutor & Trainee Teachers	06:00 p.m. to 07:00 p.m.	01 Hour
03	Session I: Research Ethics with respect to report-writing: Reporting results and drawing conclusions	Resource Person	02:00 p.m. to 03:00 p.m.	01 Hour
	Session II: Students' presentation of their research proposal	Tutor & Trainee Teachers	03:00 p.m. to 04:00 p.m.	01 Hour
	Session III: Students' presentation of their research proposal	Resource Person	04:00 p.m. to 05:00 p.m.	01 Hour
	Session IV: Students' presentation of their research proposal	Tutor & Trainee Teachers	05:00 p.m. to 06:00 p.m.	01 Hour
	Session V: Students' presentation of their research proposal	Tutor & Trainee Teachers	06:00 p.m. to 07:00 p.m.	01 Hour

9. INTRODUCTION TO RESEARCH PROJECT

The purpose of research project is to engage trainee teachers in action research process. Action research helps student teachers to begin a cycle of posing questions, gathering data, reflection, and deciding on a course of action. Research project helps to understand a particular problem or phenomenon along with strengthening their comprehension of research process. They discover firsthand knowledge about (a) how the steps of the research process are related to one another, (b) develop an understanding and appreciation of how knowledge evolves, and (c) adds a contribution to the body of knowledge.

The purpose of action research project is either to solve a problem or to improve a practice in education within local settings. The output of an action research project may provide immediate solution to a problem at classroom or school level.

9.1 What is not an action research?

- Action research is not a library project where we learn more about a topic that interests us.
- Action research is not an attempt of trying to find out what is wrong. But it is a quest for knowledge about how to improve a particular practice/situation.
- Action research is not about doing research on or about people, or finding all available information on a topic looking for the correct answers.
- Action research involves people working to improve their skills, techniques, and strategies.
- Action research is not about learning why we do certain things. But it is about how we can do things better.
- It is about how we can change our instruction to impact students' learning.

10. TYPES OF RESEARCH PROJECT

For action research project, qualitative and/or quantitative research design may be selected. In quantitative research design, a¹correlational study involves studying the extent of relationship between two or more quantitative/quantifiable variables. For example, relation between grades of students and number of study hours. A ²causal comparative research seek to identify the associations between one independent and one dependent variables. It attempts to identify the causes or consequences of difference that already exists among two or more groups. For example, an action research project investigating the classroom behavior of good and poor readers in eighth class. An ³experimental research manipulates one independent variable, and measures its effect on a dependent variable while controlling all other variables. For example, action research project involving the study on effect of cooperative teaching method for improving social skills of student in class four.

A research project using qualitative research design may also be conducted e.g., a case study of an event/action/situation/practice about classroom/subject/teaching method. ⁴Case study involves detailed contextual analysis of a unit of study using multiple sources of data. The unit of case study may be a school, classroom etc. For example, you have observed that student of 7th class did not perform well in the subject of English in their last examination. Now, you may conduct a case study to highlight the background of the problem and suggest suitable ways for improving their performance in that subject.

¹ If you wish to study correlational research in more detail, go to the link
<https://explorable.com/correlational-study>

² If you require more information on causal comparative research, go to the link
http://web.utk.edu/~ewbrewer/pdf/encyclopedia/Encyclopedia%20of%20Research%20Design_Volume%201.pdf

³ If you require more information on experimental research, go to the link
http://results.mu.ac.in/myweb_test/Research%20Methodology-Paper-3/Chapter-7.pdf

⁴ If more information is required, go to link
<https://www.ischool.utexas.edu/~ssoy/usesusers/1391d11b.htm>

11. PREPARATION OF A RESEARCH PROPOSAL

A research proposal is the summary of proposed research. It provides information about which research problem you are going to investigate, what are your research objectives and what procedure you will use to achieve your research objectives. It is developed before starting work on a research project. It guides the researcher during the research process.

The goal of the research proposal is not only to communicate the reader what would be done, but also to make the reader believe that the research study is practical and appropriate. The research proposal is written by keeping in mind logic and reason for conducting research study. The effectiveness of your proposal will depend on your ability to explain the nature, context and scope of your research project.

The research proposal is developed to ensure that your research project has a single purpose and direction. Most of the content of research proposal become part of your research project report e.g., introduction of the study, statement of the problem, research objectives, research questions, research methodology and significance of the study. So, it must be carefully planned and written. Future tense is used for writing research proposal except background of the study. Background of the study is written in past tense. It consists of the following sections:

- i. **Research Topic:** Research title is the main focus of your research project. It must be clear and brief. It should not consist of more than 15-20 words. A good research topic has four important elements: ⁵variable(s), phenomenon to be studied (survey, analysis, correlation, comparison or effect), subject (population of the study) and geographical distribution. For example:

“Effect of Professional Training on Communication Skills of Elementary School Teachers in F.G. Schools of Islamabad”

The above research topic is aimed at determining the effect of one variable (professional training) on another variable (communication skill) of subject (elementary school teachers) in a geographical area (F.G. schools of Islamabad).

Trainee teacher would select a research topic related to his/her area of specialization. It is important to carefully select a research topic. A research topic once finalized will not be changed afterwards.

⁵ A Variable is a characteristic of a person, nonhuman object or a research condition/environment that can take different values. For example, gender, academic achievement, age, weather, personality, social group, job satisfaction, difficulty of the task to be completed etc. The opposite of a variable is a constant. Its value always does not change e.g., there are 60 seconds in one minute (Weathington, Cunningham & Pittenger, 2010).

Trainee teacher would select a research topic that can easily be completed within 06 months time period. If the research problem involves more variable(s) or a large population then it would be difficult to complete it within one semester. It may also require additional resources to accomplish it.

- ii. **Abstract:** See appendix F
- iii. **Keywords:** It is important to figure out the keywords in your proposal as they will help you to search for relevant research studies/literature for your research project (see appendix F for some examples of keywords).
- iv. **Introduction of the Study:** Background of the study helps reader to understand the research problem and recent debates about it. It also tells about the importance of studying a particular research problem. Its length may vary from two to three pages. For writing background of the study, you need to consult related research articles, theses, books etc.
The first paragraph of the background of the study must be stated in your own words. It should reflect your understanding of the research problem. In next paragraphs, you need to include properly cited research work of other researchers. The reference of all the related research work included in your background of the study must be provided in your bibliography. For bibliography and in-text citation, you will use APA (American Psychological Association) style of referencing. We will see APA style in more detail in a separate section of this manual.
- v. **Statement of the Problem:** The statement of the problem is based on your research title. It consists of a single statement that gives direction to your research project. So, it must be clear, simple and understandable. For example:
“To determine the effect of professional training on communication skill of elementary school teachers over a period of three years in F.G. schools of Islamabad”.
- vi. **Research Objectives:** Research objectives are based on statement of the problem. There may be more than one research objectives for a research project. Its number depends on the breadth and depth of statement of the problem. However, there must be at least one research objective for a research problem. For writing research objectives, you need to use ⁶measurable verbs e.g., measure, classify, compare, contrast, assess etc. Some examples of research objectives related to above mentioned statement of the problem are given below:
 - 1. To assess the effect of professional training on written communication skills of elementary school teachers.

⁶ For more measurable verbs, you can check the following links:
https://www.academia.edu/2912798/Verbs_Used_to_Write_Research_Objectives_2013_?auto=download &
http://www.sae.org/training/seminars/instructorzone/measurable_verbs_for_learning_objectives.pdf

2. To examine the areas of communication skills of elementary school teachers influenced by professional training.

vii. Research Questions: The research questions are based on research objectives. The research questions deal with more detailed aspects of statement of the problem. There may be one or more research questions for one research objectives depending upon the breadth and depth of research objective.

For second research objective mentioned above, the following research questions can be formulated:

1. Is there any change in specific components of communication skills of elementary school teachers as a result of professional training?
 - 1.1 *What is the change in written communication skill of elementary school teachers after professional training?*
 - 1.2 *Is there any change in verbal communication skill of elementary school teachers after professional training?*
 - 1.3 *How the non-verbal communication skill of elementary school teachers is affected after professional training?*

viii. Hypothesis/Hypotheses: A hypothesis is a statement that predicts about a relation/difference between two or more variables. It depends on your research topic and research design that whether it requires hypothesis testing or not.

There are two main types of hypothesis: alternative hypothesis and null hypothesis. **Null hypothesis** asserts that no statistically significant variation exists between two variables in a given condition. Null hypothesis is denoted " H_0 " (pronounced as H not). Examples of null hypotheses for above mentioned research objectives are given below:

H_0 There is no statistically significant difference in written communication skills of elementary school teachers those who took professional training and those who did not.

Alternative hypothesis states that there exists a statistically significant difference/relation between two variables in a given condition. Examples of alternative for above mentioned research objectives are given below:

H_1 There exists a statistically significant difference in written communication skills of male and female elementary school teachers after attending professional training.

A hypothesis is accepted or not accepted on the basis of statistical results obtained after data analysis. In most of the research studies, null hypothesis is generally formulated as it reduces the chance of bias on the part of researcher. If null hypothesis is accepted then it means that there is no difference in variation of two factors. It may also assert that any variation between two variables is due to chance.

ix. Significance of the Study: Significance of the study depicts how the proposed research study will help to solve the educational/social problem. It informs the reader about the potential beneficiaries of the research project. It also tells about how the proposed research study is beneficial for a particular group(s) of people.

For example, the significance of the above mentioned research problem can be stated as below:

“The proposed research project would be beneficial for institutions responsible for professional training of teachers. They will be able to know about the effect of professional training programmes for improving various areas of communication skills of teachers. They may work on improving professional training programmes keeping in view least effective areas of communication skill. The research study will also be beneficial for teachers as they will know about their strong areas and work on their improvement areas regarding communication skills.”

- x. **Limitation and Delimitation of the Study:** The limitation of the study refers to those aspect(s) that a researcher was unable to control. Limitation of the study might affect the generalizability or utility of research results. Any influence or condition that may affect the research results must be mentioned by the researcher in his/her research proposal/report. For example, for above mentioned statement of the problem, the possible limitations may be low response rate, inability to control variable of introvert/extrovert personality trait or inability to get equal number of responses from teachers of different subjects.
- Delimitation of the Study** refers to intentional choices made by a researcher to restrict a research project to particular geographical area or selected variables. The reason for delimitation of the research project may be time and/or resource constraints. For example, delimiting a research to a particular population, gender or age group etc.
- xi. **Research Methodology:** Research methodology involves following components:
- a. **Type of Research Study:** A description of the research study must be provided that whether it is descriptive, correlational, causal comparative, experimental research study or case study etc.
 - b. **Population:** The population is a group of people with at least one and/or more than one common characteristic which is the focus of the researcher. For example, elementary teachers for subject of Urdu in government schools, students of English subject in class six, teachers who attended a professional training course during past three years.
It is not possible to collect data from all of the members of a population. So, a group of people from population is selected for data collection. This small group of people selected from population for data collection is called sample.
 - c. **Sample and Sampling Technique:** Sample is a subgroup of population. A sample must be representative of population so that researcher must get a reliable data for a research problem.

A sample is selected from population using a sampling technique. There are two main types of ⁷sampling techniques: probability sampling and nonprobability sampling. ⁸Probability sampling gives equal and independent chance to every member of population to be selected in sample. In ⁹non-probability sampling, sample is selected without giving equal and independent chance to every population member for selection in a sample. The sample is selected on the basis of subjective judgment of researcher in non-probability sampling.

Probability sampling is preferred most of the time for use because it reduces the chance of bias in selecting a sample. It also enables the researcher to generalize the research result to whole population. Generalization of research results to whole population is not possible in non-probability sampling.

In a research project, if the population is spread over a vast geographical area then it may not be possible for a researcher to access randomly selected sample. In such a case, non-probability sampling can also be used.

- d. Research Instrument:** Research instrument is used to collect data in a research project. There are different types of research instruments such as close-ended questionnaire, open-ended questionnaire, rating scale, checklists, attitude scale, achievement test, interview and observation schedule.

You need to specify the research instrument(s) for your research project during research proposal stage. The selection of research instrument is decided on the basis of research topic and data required for it. You can select already available research instrument developed by researchers or you can develop your own research instrument¹⁰. You need to consult research studies related to your topic for already available research instrument.

It is also important to mention in your research proposal about how you will determine the ¹¹validity and reliability of your research instrument.

- e. Data Collection Procedures:** Your research proposal must contain information about the data collection procedures you will use. It may include information about how you accessed the respondents, how would you administer the research instrument, would there be special situation required for administering the research instrument(s) etc.

⁷ For more information about difference between probability and nonprobability sampling, go to the link <http://keydifferences.com/difference-between-probability-and-non-probability-sampling.html>

⁸ For more reading about probability sampling and its types, go to the link <http://dissertation.laerd.com/probability-sampling.php>

⁹ For further reading about non-probability sampling and its types, go to the link <http://dissertation.laerd.com/non-probability-sampling.php>

¹⁰ For more information about development of a research instrument, go to the link <http://korbedpsych.com/R09DevelopInstruments.html>

¹¹ For further reading on validity, its types, reliability and its types, go to the link <https://www.slideshare.net/razifshahril/8-validity-and-reliability-of-research-instruments-54665082>

- f. **Data Analysis Procedures:** Briefly describe in your research proposal about what techniques you would employ to analyze the data and reason behind using those techniques. If your data is quantitative in nature, you will use statistical techniques (for example mean, median, mode, ANOVA, t-test etc.). If you are using coding for your qualitative data such as data obtained from interviews or observations, what procedure you will adopt to perform coding must be stated in your research proposal. You would clearly state about data analysis procedures in your research proposal.
- g. **Ethical and Legal Considerations:** A research proposal requires data collection that's why a researcher must think of various ethical and legal considerations involved in the research study. It must be ensured to safeguard the rights, physical/psychological safety, dignity and well-being of the people involved in the research project. The researcher must seek *informed consent* of participants/respondents before time for filling a questionnaire or providing information in an interview. The respondents selected in sample must be *free to decide about participating or not participating* in your research study.

The researcher should provide the necessary information to respondents/participants that they need to know for becoming part of your research study. Safety from physical harm may include providing safety from pain, injury and illness at the time of data collection. Safety from psychological harm involves providing safety from cognitive and emotional disturbances e.g., avoid asking respondents about their painful experiences etc. Anonymity of a respondent/participant must be ensured that his/her name and identity must not be disclosed at any time during/after the research study.
- h. **Operational Definition(s):** Terms that have special meaning in your research project must be defined in this section. It is important to define your variables in this section so that you are focused on those aspects of variables only. It also helps readers to understand the meaning of specific terms in your research project.
- i. **Bibliography:** Provide references using APA style for research articles, theses, books, dictionaries, blogs etc. that you have consulted and included in background/literature review of the study.
- j. **Time Schedule:** Break down all the activities involved in the research project and allocate appropriate time to each activity. For example, time required for instrument development, time required for determining validity and reliability of research instrument, time required for data collection, time required for data analysis etc. It helps the researcher to estimate the time necessary to complete a research project.

12. STRUCTURE OF RESEARCH REPORT OF PROJECT

A research report of project is written after the completion of a research project. The research report of project consists of following sections:

Table 04: Sections of Research Project Report

S/No.	Section of Report	Details of Section
1.	Preliminary Section	Title Page (Appendix B)
		Approval Sheet (Appendix C)
		Declaration (Appendix D)
		Acknowledgement (Not compulsory): Acknowledgement is optional. It must be on a separate page. It cannot exceed one page and should not exceed one paragraph in length, and should adopt a restrained and decorous tone.
		Abstract (Appendix F)
		Table of Contents (Appendix G)
		List of Tables (Appendix H)
		List of Figures (Appendix I)
2.	Main Body of Report	<p>Chapter 01: Introduction (see appendix K for chapter format) Introduction of a research study involves building up logic/argument for studying a particular research problem. It consists of six to eight paragraphs. All the paragraphs are connected to one another. A well written introduction will highlight:</p> <ol style="list-style-type: none"> i. Size of the problem ii. What attempts are already being made to deal with the problem; it will depict importance of the topic. iii. What are the ways out for future work related to the problem? iv. How the researcher will tackle this problem in this research study? <p>Along with building argument for studying a particular research problem, chapter 01 includes statement of the problem, objectives of the study, research question and/or hypotheses, significance of the study and a very brief information about research methodology. Research methodology in chapter 01 has brief description about research design, population, sample, sampling technique, data collection and data analysis.</p>
		<p>Chapter 02: Review of Related Literature Review of related literature is written by consulting resources (books, articles, theses, encyclopedia and/or</p>

		<p>dictionaries etc.) related to the research problem. A review of related literature consists of three portions:</p> <ol style="list-style-type: none"> i. First portion consists of explaining the variables. ii. Second portion deals with the ¹²<i>theoretical framework</i> of the study i.e., analysis of the phenomenon you are studying keeping in view the variables of the research. Theoretical framework describes the theory to explain either why the research problem exists or what could be solution of the problem. (See appendix L) iii. Third portion consists of results of previous research studies related to research problem. <hr/> <p>Chapter 03: Research Methodology Methodology includes the detailed description about:</p> <ol style="list-style-type: none"> i. Research design of the project (whether it is quantitative, qualitative or mixed method) ii. Population of the research study iii. Sampling technique and how it is used for selecting sample iv. Sample and its size for data collection v. Research instrument(s) used for data collection vi. Validity and reliability of research instrument(s) vii. Data collection procedures viii. Statistical techniques used for data analysis <hr/> <p>Chapter 04: Data Analysis and Interpretation Chapter 04 involves details about the analysis and interpretation of data which was collected using the research instrument. In case of quantitative data, statistical techniques (descriptive and inferential statistics) are used for data analysis. Qualitative data is analyzed through coding. Tables, charts and graphs are used to better explain results of analysis. It reports the acceptance or rejection of null hypothesis in case of correlational, causal comparative or experimental research.</p> <hr/> <p>Chapter 05: Summary, Findings, Conclusion and Recommendations Chapter 05 is written on the basis of result reported in chapter 04. Summary is the brief description of research questions, research methodology and two or three main findings of the research study. Findings are written by quoting the data analysis results. Findings are more detailed description of what is found about the research problem as a result of data analysis.</p>
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¹² For further reading on theoretical framework, go to the link <http://www.statisticssolutions.com/theoretical-framework/>

		Conclusions are written keeping in view your research questions and findings of data analysis. Recommendations are made for future researches in the light of conclusions. The purpose of writing recommendations is to provide suggestions to explore other aspects of research problem that were not addressed in your research study. The recommendations are written keeping in mind its three major parts: what to do, how to do it and whom to do it.
3.	Bibliography &	Bibliography includes the detailed reference of the related research work you cited in first and second chapter of your report. It may include books, research articles, theses, encyclopedias and dictionaries etc.
4.	Appendix/Appen dices	Appendices constitute the last part of your research report. It may include any details related to your research study which were not provided in chapters. For example, educational institutions you visited for data collection, your research instrument(s) etc. (See appendix J)

Books Suggested For Further Reading

Cresswell, J. W. (2008). *Research design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: Sage Publications.

Denzin, K., & Lincoln, Y. S. (Eds.). (1994). *Handbook of qualitative research*. London: Sage Publications. Retrieved from <http://nersp.nerdc.ufl.edu/~ufruss/documents/ryanandbernard.pdf>

Gay, L.R.(1995).*Educational Research: Competencies for Analysis and Application* (5th Ed.). Washington: Merrill Pr.

Ferrance,E.(2000). *Action Research*. Retrieved from https://www.brown.edu/academics/education-alliance/sites/brown.edu.academics.education-alliance/files/publications/act_research.pdf

Weathington, B.L.,Cunningham, C.J. & Pittenger,D.J. (2010). *Research Methods for the Behavioral and Social Sciences*. New Jersey: John Wiley & Sons, Inc.

13. FORMATTING OF RESEARCH PROPOSAL/REPORT

APA style consists of rules or guidelines that are used for clear and consistent presentation of written material. It includes rules for selection and style of heading, font and length of text, punctuations, abbreviations, tables, figures, citation of references and general arrangement of headings of a written material e.g., thesis, research paper, book, dissertation etc. APA style is practised in the field of education and social sciences for formatting purposes. Following rules must be kept in mind for formatting of a research proposal/report.

- i. **Page Size and Weight:** A4 size paper (8 ½” – 11”) with 90 gms weight is used for research report. Only one side of the paper be used for printing.
- ii. **Binding:**
 - a. Hard bound, Maroon colour
 - b. Rexine/cloth: Rexine/cloth edges uncut
 - c. Letters on cover page written in golden colour
- iii. **Margins:** The margins of page are as given below:
Left side of page = 1×1/2 inch or 3.8 cm
Right side of page = 1 inch or 2.5 cm
Top of the page = 1 ¼ inch or 3.2 cm
Bottom of the page = 1 inch or 2.5 cm
The first page of each chapter may have one and half inch margin at the top.
- iv. **Font:** In APA style, Times New Roman is used for writing research proposal/reports. For chapter title, 16 size font and bold is used, whereas 14 size font and bold is used for level 1 headings. For text, font size is 12 points. For footnotes/endnotes, the font size is 10. All the text except bibliography must be double spaced.
- v. **Pagination:** Page numbers for preliminary pages are written in small Roman numerals (i, ii, iii, iv, v....) that are centered at the bottom of the page. Title Page counts as page i, but the number is not printed on the page. Approval sheet, declaration and acknowledgement count as page ii, iii and iv, respectively. The Abstract begins on page v. Table of contents, list of tables, list of figures and list of appendices are numbered as vi, vii, viii and ix, respectively.
For the main body of the paper, all pages are numbered with Arabic numerals (1, 2, 3....) in the upper right corner. Just before the page number, use a shortened form of your title (that is research topic) as a header.
- vi. **Line Spacing:** The text must be double-spaced throughout the research report. For tables, single line spacing is used. For a new paragraph, indent/give 5-7 word spaces before writing the text. Abstract is written without indent for 5-7 word spaces.

- vii. Abbreviations:** Use the abbreviation for a word that you are going to use more than three times in your research proposal/report. Do not use abbreviations in your abstract and title page. Abbreviations which appear as word entries, may be used without further explanation IQ, HIV, AIDS. Some Latin abbreviations for parenthetical materials used are given below along with their meaning.

Table 5: Latin Abbreviations

Abbreviation	Purpose for Use
cf.	Compare
et al.	Others
etc.	And so forth
i.e.,	That is
viz.,	Namely
e.g.,	For example
vs.	Versus, against

The first time you use an abbreviation in the text, present both the spelled-out version and the short form. When the spelled-out version first appears in the narrative of the sentence, put the abbreviation in parentheses after it:

Example: We studied attention-deficit/hyperactivity disorder (ADHD) in children. When the spelled-out version first appears in parentheses, put the abbreviation in brackets after it:

Example: The diagnosis (i.e., attention-deficit/hyperactivity disorder [ADHD]) was confirmed via behavioral observation.

After you define an abbreviation (regardless of whether it is in parentheses), use only the abbreviation. Do not alternate between spelling out the term and abbreviating it. It is useful to include a page “LIST OF ABBREVIATIONS” after “LIST OF FIGURES” in your preliminary pages so that a reader can refer to it for detail.

- viii. Chapter Title:** Each chapter must have a heading and a title. Chapter heading refers to chapter number i.e., CHAPTER 1, CHAPTER 2. Chapter title refers to brief descriptive title for each chapter to indicate content i.e., INTRODUCTION, REVIEW OF RELATED LITERATURE, RESEARCH METHODOLOGY. The heading and title of chapter are bold, centered and in capital letter (see appendix K).
- ix. Heading:** Headings are meant to help the reader for grasping outline of your research proposal/report. APA provides rules for formatting of five levels of headings in a topic. It is described below:
- Centered, Boldface, Uppercase and lowercase Heading**(Level 1)
 - Flush Left, Boldface, Uppercase and Lowercase Heading**(Level 2)
 - Indented, boldface, lowercase heading ending with a period:** (Level 3)
 - Indented, boldface, Italicized, lowercase heading ending with a period***(Level 4)

Indented, Italicized, lowercase heading ending with a period: (Level 5)

Level 1 heading is placed in your text; it does not refer to your chapter title/chapter heading. A decimal notation is used for identifying the heading and sub-headings.

¹³For Heading 8 of CHAPTER 01: INTROUCTION, the different levels of headings along with decimal notation is given below:

1.8 Research Methodology (Level 1)

1.8.1 Population (Level 2)

1.8.2 Sample and Sampling Technique (Level 2)

1.8.2.1 Teachers: (Level 3)

1.8.2.1.1 Teachers with above than 05 years' experience: (Level 4)

1.8.2.1.1.1 Teachers who attended training in last 03 years: (Level 5)

1.8.2.1.1.2 Teachers who attended training in last 03 years: (Level 5)

1.8.2.1.2 Teachers with less than 05 years' experience: (Level 4)

1.8.2.1.2.1 Teachers who attended training in last 03 years: (Level 5)

1.8.2.1.2.2 Teachers who attended training in last 03 years: (Level 5)

- x. **Seriation:** For listing factors/components within a paragraph/sentence, use lowercase letters in parentheses. For example,

Participants considered (a) some alternative courses of action, (b) the factors influencing the decision, and (c) the probability of success.

For listing factors/components etc. in separate paragraphs, number each paragraph with an Arabic numeral, followed by a period:

1. Begin with paragraph indent. Type second and succeeding lines flush left.
2. The second item begins a new paragraph.

- xi. **Enumeration:** When the items are enumerated, they may be distinguished by using the following format and bringing the second and succeeding lines of each item back even with the number or letter of the item.

1. According to....
 - I. According to....
 - A. According to....
 - (i). According to....
 - (1) According to....
 - (a). According to....

- xii. **Number and Numerals:** Use ¹⁴numerals to express numbers 10 and above, and use words to express numbers below 10. For example, "Of the students, 13 were

¹³For decimal notation of remaining chapters of your research project report, please see appendix G.

¹⁴ Numeral refers to symbol that represents a number i.e., 1,2,3,...

present and nine were absent.” However, words should be used to express units of time when those units are approximate. For example, “It took the rats about three seconds to discover the new food source.”

- xiii. Quotation:** Quotation refers to including a group of words in your report in the same form as it is in original source. When fewer than 40 words, put prose quotations in running text and put quote marks around quoted material. Provide author’s last name, publication year, and page number(s) of quote besides it, as shown in example below:

Caruth (1996) states that a traumatic response frequently entails a “delayed, uncontrolled repetitive appearance of hallucinations and other intrusive phenomena” (p. 11). OR

A traumatic response frequently entails a “delayed, uncontrolled repetitive appearance of hallucinations and other intrusive phenomena” (Caruth, 1996, p. 11).

The quotation with 40 words or more is used in block form with 5-7 spaces in the start of quotation. Do not use the quotation marks. If the quotation has internal paragraphs, indent the internal paragraphs a further 5-7 spaces. Double space the block quote. Cite the source after the end punctuation of the quote. Example is given below:

Meile (1993) found the following:

The “placebo effect,” which had been verified in previous studies, disappeared when behaviors were studied in this manner. Furthermore, the behaviors were never exhibited again, even when real drugs were administered. Earlier studies were clearly premature in attributing the results to a placebo effect. (p. 276)

- xiv. Numbers and Numerals:** One digit number should be spelled out (written in word form) e.g., 1,2,3.... The numbers 10 and above should be written in numeral form. Never start a sentence with a number/numeral.

Table 6: Examples of Numbers and Numerals

Correct	Incorrect
Altogether, five groups were selected.	Altogether, 05 groups were selected.
The group consisted of 20 undergraduates.	The group consisted of twenty graduates.
A total of 42 teachers were approached.	A total of forty-two teachers were approached.

- xv. Tables:** Tables helps in the presentation of a complex information in concise, clear and efficient visual form. Especially in chapter 04, the researcher makes use of

tables for communicating his work in precise way. Each table directly pertinent to the presentation should be included as an integral part of the research report. Number all the tables with Arabic numerals (1,2,3,...). Use single spacing for table caption. Table caption includes table number and title. Table title depicts information contained by that table. The decimal notation in table caption would be helpful to know which chapter of your research proposal/report it belongs to. For example, table in chapter 04 of your research report may be numbered as Table 4.1. Table note is mentioned below the table (Font for table note is 10; Rest of table content will be in 12 font size). Information necessary for understanding the table and definitions of abbreviations used within the table appear in a table note. The table caption is aligned left and mentioned above the table, as shown in example below:

Table 4.1

Teachers' Years of Experience by Instructional Management Style

S/ No.	Group	<5	5-10	10-15	15+	Total
1.	Interactionist	9	5	3	7	24
2.	Interventionist	1	2	3	1	07
3.	Non-Interventionist	3	1	5	4	13
	Total	13	8	11	12	44

<5= Less than 05 years of teaching experience; 5-10= 5-10 years of experience; 10-15= 10-15 years of teaching experience; 15+= more than 15 years of teaching experience

Tables must not exceed the usual margins of the page in the thesis. Wide tables(broadside) may be oriented in "landscape" position with the heading on the left-hand margin, i.e., at the binding. This margin must remain 1.5 inches wide. Tables may use single-spacing or one-and-a-half spacing. Table with one page or less in length should never be divided. It must appear on a page where it is first mentioned in the text. If it is too long to fit in the appropriate position on that page, it must immediately follow the page on which it is first mentioned. Excessively long tables may be continued from one page to the other page. The caption of all the tables included in your research proposal/report, are listed along with page number in "LIST OF TABLES" in preliminary section.

xvi. Figures: Charts, graphs, photographs, structures and diagrams are called figures. It should be numbered using Arabic numerals (1,2,3,...). Figure caption includes figure number and title. Figure title clarifies any label/ label abbreviations used on photograph, diagram, graph or chart. The decimal notation along with figure

caption would be helpful to know which chapter of your research proposal/report it belongs to. For example, figure in chapter 02 of your research report may be numbered as Fig. 2.1. The figure caption is centered and mentioned two lined below the figure, as mentioned in the example Fig. 2.1.

• Standrad 1	Subject Matter Knowledge
• Standrad 2	Human Growth and Development
• Standrad 3	Knowledge of Islamic values and ethics
• Standrad 4	Instructional Knowledge and Practice
• Standrad 5	Assesment
• Standrad 6	Learning Enviornment
• Standrad 7	Effective communication & use of ICT
• Standrad 8	Collebration and Partnership
• Standrad 9	Continues prof.dev&code of ethics
• Standrad 10	Teaching of English as a foriegn Language

Fig.2.1: National Professional Standards for Teachers in Pakistan

Any chart, graph, diagram etc. should follow the paragraph in which it is first mentioned. The figure must not exceed the usual margins of the page, it must be on one page or if it is more than one page in length, it should be placed on the page immediately following its first mention and continued on the succeeding page(s) as necessary. The caption of all the figures included in your research proposal/report are listed along with page number in “LIST OF FIGURES” in preliminary section.

- xvii. Footnote/Endnote:** Footnotes in APA style can only be used to provide additional content that supplements the text e.g., to briefly acknowledge an idea that is important to the discussion or to note copyright permission for reprinting a lengthy quote. Endnotes are never used in APA style.

14. APA REFERENCING STYLE

A reference list consists of all sources cited in the text of a research proposal/report/paper, listed alphabetically by author's last name. A bibliography, however, may include resources that were consulted but not cited in the text as well as an annotated description of each one. In research project proposal/report, bibliography is recommended for use. Some guidelines for formatting the bibliography are given below:

- Bibliography starts on a new page with heading "BIBLIOGRAPHY" (see appendix L).
- In all entries except in case of anonymous works (work with no author mentioned), the last name of the author should be written first with comma after it, followed by first alphabets of first and middle names. For example, John W. Best is written in bibliography as Best, J.W.
- In case an editor, compiler or chairman is responsible for publication, his/her name should be given in place of author, followed by the word "editor", "compiler" or "chairman" as the case may be. For example, John, T.H.(chairman).(2013)... or John, T.H.(Ed).(2013)...
- If an institution, association, commission or similar group has put out a publication and no author, editor or compiler is given, the organization name should be placed as the author. For example,
McGraw-Hill. (1983). *Guidelines for bias-free publishing*. New York: Author.
American Psychological Association. (1994). *Publication Manual of American Psychological Association* (4th Ed.). Washington, DC: Author.
- Reference to a report made by a committee or section of an organization should be entered under the name of the larger organization of which it is a part. This should be followed by the name of the committee or organization. If no author or group responsible for the publication is given, the title of the references should be used in alphabetizing. For example,
Scientific Illustration Committee.(1988). *Illustrating Science: Standards for Publication*. Bethesda,MD: Council of Biology Editors.
- The entries in the bibliography are arranged in an under hang, single-spaced form with double-spacing between references. Each entry begins flush with the left margin; the second and ensuing lines of that entry are indented five to seven spaces (follow this style throughout the reference list).
- Bibliography is arranged in alphabetical order with reference to last name of first author (see appendix L).
- When a reference has more than one author, the names should be listed in the order in which they appear on the title page of the reference and should be alphabetized under the last name of the author whose name appears first.
- If only one section of a book is referred to and the sections have different authors, the specific reference should be listed in the bibliography under the name of author of the part cited (also see reference of chapter of a book).

- If you have cited many works by one author, order them in reference list by publication date older to newest e.g., reference of an article published in 2000 would appear before an article published in 2003 of same author.
- When an author appears as a sole author in one publication whereas first author of a group in another citation, list the sole author entries first.
- Italicize the titles of books and journals.
- Capitalize only the first letter of the first word of a title and subtitle of a work.
- For ease of reading and interpreting, Arabic numerals (1,2,3,...) should be used for all series, parts, volumes, issues, sections and articles even though they may be given in Roman numerals (I,II,III,...) in publication themselves.

In-text citation: It refers to providing reference of source besides text from that source in research report. It is also called parenthetical citation and author-date reference. It involves the last name of the author(s) and year of publication of source.

It can be done in following two ways:

- i) Author name (year) in the start of sentence, for example:
Khan (2003) found new methods _____.
- ii) (Authors name, year) with or at the end of sentence, for example:
It was _____ (author name, year)
In a recent survey of the teaching practices (Khan, 2003), it was _____.

APA style rules and guidelines are set out in a reference book called “The Publication Manual of the American Psychological Association”. Necessary details of APA style of formatting and referencing are provided in this manual. However, if any of formatting/referencing example required by you is not available in this manual, then consult the above publication for more detailed information and examples. Current information can also be obtained via the Internet from the official APA Style website <http://www.apastyle.org/>. This website has tutorials, blogs and frequently asked questions (FAQs) about APA style.

15. PLAGIARISM

Plagiarism involves copying the verbatim or ideas of another person without properly citing the source. It also refers to use of ideas or work of another person and presenting it as one's own. It involves scientific misconduct and academic fraud. Even if you are properly citing the source, you cannot copy the words of another author as it is in your research proposal/report. Because it also involves plagiarism. Only 19% plagiarism is allowed in the research project, as per HEC guidelines.

You are also required to avoid plagiarism by properly citing the source for an idea/research result. Definition(s), if required, can be quoted followed by proper in-text citation. Definition(s) are one or two sentences long, mostly. You cannot copy multiple sentences/paragraphs from the work of another person. It also involves plagiarism even if you are properly citing the source. You have to include the results of various researches in by writing your own words. However, you must ensure that the meaning and context of the research idea/result may not be affected/moulded in this process. It must also be kept in mind that if you first copy someone's words and then explain the same idea in your own words, not making it clear which are your words and which are borrowed, this is also plagiarism.

In order to avoid plagiarism, you have to consider three key points:

- Whenever you are including any idea/research result into your research proposal or report, always cite the source (in-text citation plus bibliography).
- Do not copy exact words of another author. Borrow the idea of author in your words and then properly cite the source.
- Even if you are paraphrasing the idea/work of other author(s), you need to provide proper citation, as it still belongs to them.

In case a research project of a trainee teacher is found to be plagiarized version of another research work i.e., published or unpublished, his/her research project will not be acceptable. In case the plagiarism of research project is proved after the completion of programme, the degree will be cancelled/withdrawn retrospectively.

Spin

APPENDIX A

Name

**Sample Cover Page for B.Ed. Research Report
(Hard bound, Maroon colour)**

Full research Topic (Use font size to fit in the space)

**THIS IS HOW THE TITLE OF YOUR
M.PHIL/PhD THESIS SHOULD APPEAR
ON COVER PAGE**

(20 font, New Times Roman, in gold)

Researcher's Full Name

(16 font, bold New Times Roman centered, in gold)

Roll Number

Degree



year

ALLAMA IQBAL OPEN UNIVERSITY ISLAMABAD

(16 font, in gold)

Month-Year

(Mention date and year on which it was submitted for evaluation)

APPENDIX B

(Sample Title Page for B.Ed. (1.5 year) Research Report)

Title of Research Project (16 font, bold)



By (12 font)

Researcher's Full Name

(16 font, bold, centered)

Roll No. -----

(16 font, bold, centered)

(12 font, Times New Roman, Bold)

Submitted in partial fulfillment of the requirements for

B.Ed. (1.5 year) program in ----- (Area of Specialization)

at ----- (Department Name)

FACULTY OF EDUCATION (14 font, Times New Roman, central)

ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD

Month and year (12 font, Times New Roman)

© Full Name of Researcher, Year



APPENDIX C

**Faculty of Education
Allama Iqbal Open University, Islamabad**

APPROVAL FORM

The research project attached hereto, titled* _____

Proposed and submitted by _____ Roll No. _____
in partial fulfillment of the requirements for the degree of B.Ed. (1.5 year)
(mention area of specialization) is hereby accepted.

Supervisor: _____ (Signature)
(Supervisor Name Here)

Evaluator: _____ (Signature)
(Evaluator Name Here)

Dated: _____
(Day-Month-Year)

APPENDIX D

(DECLARATION BE FILLED IN BY STUDENT
AT THE TIME OF SUBMISSION OF RESEARCH PROJECT
TO THE SUPERVISOR FOR EVALUATION)
(To be retained by the Controller of Examination)

DECLARATION

I _____ Daughter/ Son of _____

Roll No. _____ Registration # _____

A student of B.Ed. (1.5/2.5 year) programme (mention here area of specialization) at Allama Iqbal Open University do hereby solemnly declare that the research project entitled

_____ submitted by me in partial fulfillment of B.Ed. (1.5/2.5 year) programme, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

I also understand that if evidence of plagiarism is found in my thesis/dissertation at any stage, even after the award of a degree, the work may be cancelled and the degree revoked.

Date: _____
(Day-Month-Year)

Signature of Candidate

Name of Candidate

APPENDIX E

Research Project Submission Approval Form

(SUPERVISOR)

(To Be Attached with Research Project)

Research Project entitled _____

Submitted by _____ (Student's Name) Roll No. _____

Registration No. _____ Programme _____

has been read by me and has been found to be satisfactory regarding its quality, content, language, format, citations, bibliographic style, and consistency, and thus fulfils the qualitative requirements of this study. It is ready for submission to Allama Iqbal Open University for evaluation.

Name of Supervisor

Date: _____
(Day-Month-Year)

Signature of Supervisor

APPENDIX F

{Abstract should be limited to 150-250 words appearing on only one page, in one paragraph. The word count does not include the thesis title and the word ABSTRACT. (font size- 12 Times New Roman with double spacing)}

{The general structure of abstract includes “one sentence explaining one or two main objectives of the research project, one sentence about research design., one sentence about population and sampling techniques for selecting the sample, one sentence about research instrument, one sentence about validity and reliability of research instrument, one sentence about data collection, one sentence about data analysis techniques used in the research project, one or two main findings of the research project, one or two recommendations made”.}

ANALYSIS OF TEXTBOOK OF BIOLOGY FOR HIGHER SECONDARY STUDENTS WITH REFERENCE TO 21ST CENTURY LIFE SKILLS

ABSTRACT

The science education in 21st century has become more challenging with reference to educating students in 21st century skills in addition to imparting scientific attitude, knowledge and skills required for science education. The present paper investigated the biology textbook of higher secondary school level published by National Book Foundation Islamabad (Pakistan) in accordance with 21st century requirements like creativity, critical thinking, collaboration, flexibility and responsibility etc. The content analysis of the selected chapters of textbook of Biology for higher secondary class was executed. Findings reported that the textbook of Biology for higher secondary school level did not meet the requirements of 21st century for students of secondary level. The research study suggested that there is need to update the content of textbook of Biology of higher secondary school level according to the life skills requirements of 21st century. The present paper is useful for curriculum experts and for teachers of Biology.

Keywords: Science education, Biology textbook, Higher secondary level, 21st century skills, Inquiry-based learning, Life and career skills

APPENDIX G

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INTRODUCTION

Chapter number should appear as **CHAPTER 1:** 16 points Times New Roman, **boldface**, and placed at three spaces single space from the top margin and centered between the margins.

Chapter title is two single spaces below the chapter number and all in capital letters, 16 points, Times New Roman, **boldface** and on single space.

The first line of a chapter shall begin two single spaces below the title. This is where you begin typing the body of text for your research project. Follow the adjustments to the margins, line spacing, and pagination, which should be consistent throughout the thesis.

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APPENDIX M

TOPIC APPROVAL FORM FOR RESEARCH PROJECT (CC: 8613)

Note: Research proposal must be approved before the data collection. This form must be submitted in original along with research project for evaluation.

Student Name: _____

Registration Number: _____

Roll Number: _____

Programme: _____

Supervisor Name: _____

Date of Approval of Topic: _____

Topic of Research Project:

Workshop Coordinator Signature: _____

(Name)

Resource Person Signature: _____

(Name)

Resource Person Signature: _____

(Name)

APPENDIX N

EVALUATION PERFORMA FOR RESRACH PROJECT

S/No	Component of Research Project	Marks	Comments
1.	Formatting (margins of 1” on top, bottom and right side of page while 1.5” margin on left side of page, Page number on top right corner, double line spacing, font size (chapter heading 16 bold, main headings 14 bold and text 12 size)		
2.	Preliminary section and references are given (title page, approval sheet, declaration, acknowledgement, abstract, table of contents, list of figures, list of tables, list of abbreviations, list of appendices, references)		
3.	Abstract (approx.150-250 words) contains information about research objectives, research design, population, sampling technique, sample, research instrument(s), results and recommendations.		
4.	Introduction (2-3 pages) provides background information about research problem, purpose of the study and in-text citation of resources such as books, research articles consulted. There is a logical connection between paragraphs of introduction section.		
5.	Statement of the problem, objectives of the study, research question and/or hypotheses and significance of the study are clearly described and aligned together. Operational definitions of variable(s) and specific terms are provided.		
6.	Research Methodology clearly describes research design, population, sampling technique used, sample size, research tool(s), validity and reliability of research tool(s) and data analysis techniques. Research methodology section is aligned with statement of the problem and objectives of the research study.		
7.	Findings and discussion are written on the basis of analysis of collected data. Discussion includes properly cited and relevant scholarly work such as books, research articles related to the research problem. Findings and discussion are clearly written.		
8.	Conclusion and recommendations are written in connection with research objectives of the study. Conclusion and recommendations are clearly written.		
9.	References (APA referencing style is used for referencing throughout the document.)		
Total			

General Remarks:
