LEARNING OUTCOMES OF EDUCATIONAL RESEARCH

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Nowadays society has interest and concern about the Education because it directly or indirectly invests in education. Membersof the society are also called stakeholders as students and their parents, institution and industries, faculty and government. They can affect the educational institutions actions or be affected by their actions, objectives and policies of education .In our India, national goals are achieved through education. Stakeholders want outcomes from education in the form of knowledge, attitudeskills, values what their children get andlearn through curriculum or programme of Educational Institutions. Hence, it is responsibility of Educational Institutions to develop their programmes and courses which are outcome based .The programme is nothing but the curriculum which includes totality of students experiences that occur in the educational processes in the form of Extracurricular activities, Co-curricular activities along with Theory and practicum components. The course is nothing but the syllabus which is part of the curriculum. For example M.Ed. is curriculum while its core papers, practicum, dissertation, internship, field visits, optionalpapers, specializationpapers, educational tour are the courses throughout the Semesters.

The programme has purpose or aim which is satisfied through the objectives of each courses hence, each course should have objectives so that learning outcomes can be easily identified.
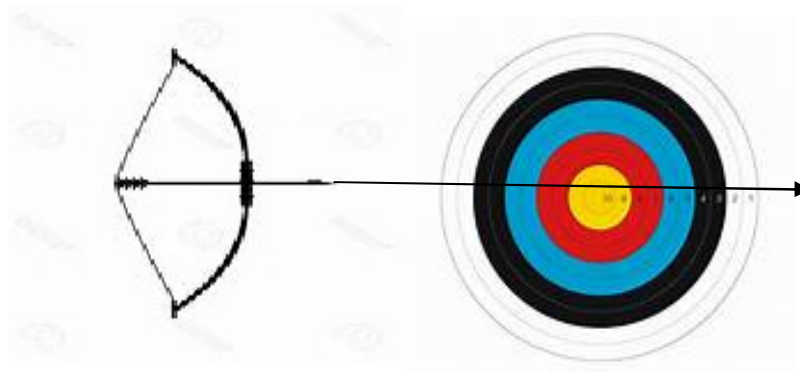
Learning outcomes

Education that is outcome based is a learner centered, result oriented, future oriented. Outcome focuses on programme, courses and instructional efforts which we want all students to demonstrate when they leave their institutions. Inshortoutcomes means what students don't know before but learn after completion of the programme.

Levels of the outcomes

Outcomes can be identified at many organizational levels:

- Institutional
- College/School
- Department
- Programme
- Course
- Class session/lesson

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Relationship between programme outcomes (Pos) and course outcomes (Cos)

Programme/Curriculum   Programme Outcome

Figure no.1: Programme outcomes (Pos) and course outcomes (Cos)

How the program outcomes are attained?

Curriculum, Teaching–learning process, Assessment, Evaluation through which course outcomes are achieved which determines program outcomes and ultimately programme objectives are satisfied, if not again process will get repeated.
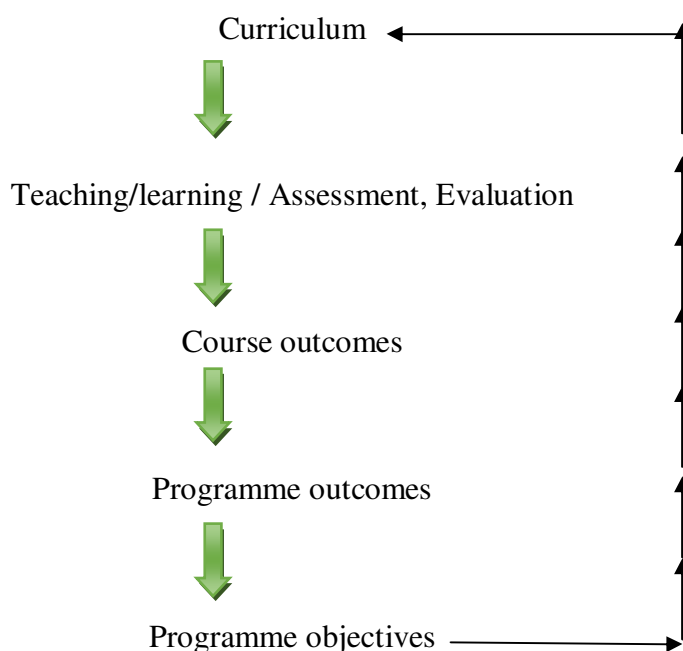

Figure. no. 2: Attainment of programme outcomes

Attainment of programme outcomes

1) Illustrate how course outcomes contribute to the Pos.
2) Mention how teaching –learning methods and techniques for the delivery of the content help in Attainment of Pos.
3) State which tools are used to assessment.

Attainment of programme outcomes indicates that job is well done by faculty and students.Course outcomes statement should match with programme outcomes statements. Every course leads to some outcomes .All the courses together must cover all the programme outcomes and programme objectives.

Programme and course outcomes are like salads and its ingredients. The ingredients contribute to the salad, but a salad is more than the sum of its parts.

Course outcomes identify the ingredients that make the programme. Course outcomes are embedded in programme outcomes.

Programme Outcomes are:

- Focus for the programme and courses.
- Specific measurable statements of what existing students should know be able to do, believe or value after completing the programme.
- Observable behaviors(whenever possible)
- Focused on results of the student learning, not on the learning processes or on teaching
- Focused on programme's mission statements
- Difficult to attain, assess and evaluate (Some of them)

Outcomes of Educational Research

The Department of Education conducts Master of Education M.Phil. and Ph.D.programmes in the field of Teacher education.

M.phil. and Ph.D. are Research degrees which enhances academic and professional development of Teacher Educators. The outcomes of this Research degrees are;

Teacher educator will:

- Be Research Personnel
- Generate new knowledge
- Add knowledge in the discipline
- Solve educational problems
- Solve problems of the society
- Develop standardized Research Tools and techniques
- Develop product and process
- Take patents etc.

Master of Education (M.Ed.) is a two year professional programme in the field of teacher education which aims at preparing Teacher educators and other educationprofessionalsincluding curriculum developers,educational policy analyst, planners ,administrators ,supervisors, school principals and researchers.

In general, after completion of the M.Ed. programmeteacher educator will understand the theoretical foundation of Teacher education and get acquaint with values and skills required for teaching profession.

Teacher educator will be:

- Faculty for D.Ed., B.Ed.and M.Ed. programmes
- Curriculum developers
- Educational policy analyst
- Educational planners
- Educational policy makers
- Educational administrators
- Educational supervisors
- School principals
- Researchers
- Educational specialists
- Educational consultants
- Writers, Authors in the field of Education

M. Ed Programme outcomes in detail

Po1- Develop Teacher Educators and other Education Professionals

Students- teachers will understand perspective courses in the areas of philosophy of Education, Psychology of learner and learning process, Sociology- History-Political Economy of Education, Educational studies, Curriculum studies, Tool courses as Basic and Advanced level   Educational Research and Statistic, academic and professional writing and communication skills and educational technology and ICT, Teacher Education courses as Elementary and Secondary and Senior secondary education, Selected Thematic areas at school stage as Educational management, Inclusive education, Educational evaluation and assessment, Comparative education and apply, demonstrate and empowered with these knowledge, values, skills pertaining to research, ICTcounseling, management, curriculum development and employability to become Teacher educators and other Education professional

Po2- Execute Educational Research and Investigation

Will understand basic and advanced level of educational research and statistics, Identify research problem, formulate research proposal, apply research methodology for selection of appropriate research design , use appropriate statistical techniques for analysis and interpretation of data and provide valid conclusions, use computer for research, communicate research, accept professional and research ethics, generate, create, new knowledge and solve educational problems.

Po3- Empower with pedagogical and androgogical principles and practices

Will understand pedagogy of school subjects, acquire observational, pedagogical, analytical, interpretative and managerial skills, apply and generate pedagogical and androgogical principles and practices in the classroom and teaching profession and research.

Po4- Facilitate Sustainable and inclusive global society

Will understand the concept and need for sustainable and inclusive global society , design and develop conductive environment and teaching-learning strategies for inclusive schools, get equipped

with skills, competencies, responsibilities for inclusive schools and sustainable environment, reflect on gender discrimination, disability and marginalized , respect human diversity and value nature.

Po5- Prepare for Lifelong Learning

Will understand the need and prepare for self development and lifelong learning in the broadest context of technological changes in the field of education

Po 6- Get acquaint with ICT and E- Education

Will understand the fundamentals of ICT and E- Education, understand Cyber crime and cyber laws, acquire with OER and FOSS, LOR. Apply social networking sites and application softwares, Web technology for teaching, learning, evaluation and research, use LMS and LCMS

Courses and their Outcomes

Co1- Perspective Courses

- Philosophy of Education
- Sociology-History- Political Economy of Education
- Psychology of learner and learning process
- Educational Studies
- Curriculum Studies

Outcomes -will understand conceptual framework of perspective courses and apply analyse, demonstrate, evaluate, criticizes this knowledge and get empowered to become Teacher educators and other education professionals

Co2- Educational research

- Basic and Advanced level of Educational Research and Statistics
- Professional/ExpositoryWriting
- Dissertation,reports

Outcomes -will understand the theoretical foundation of research andapply, analyse, identify and conduct investigations,develop tools, techniques, processes, productto solve educational problems and be prepare for research personel, explain, communicate ,defend the results ,prepare reports, articles , commit to research ethics

CO3- Teacher Education Courses

- Teacher and Teaching Process
- Teacher Education
- Internship- 1 Teacher Education
             2 Specializations

Outcomes -will understand ,apply , practice the knowledgeof teacher education in classrooms and provide substantial base to prepare teaching and other educational professional, commit to professional ethics and responsibilities and norms of teaching practice and profession.

CO4- Specialization courses

- Perspective in elementary education
- Perspective in Secondary and Senior Secondary education.

- Teaching - learning process in elementary education
- Teaching- learning process in Secondary and Senior secondary education
- Elementary Teacher Education
- Secondary and Senior Secondary Education

Outcomes- will understand theoretical foundation of elementary and secondary education and apply, analyse,appraise, practice and select specialized area for professional development

Co5- Schools stage Specialization/ Selected thematic areas

- Educational Guidance and Counseling
- Educational Management
- Comparative Education
- Educational Measurement and Evaluation
- Inclusive Education

Outcomes-Will understand ,apply analyse , select thematic areas to equip with guidance and counseling, management, evaluation skills, identify the problems, criticize educational system

Co 6- Ability and Skills Enhancement courses

- Communication Skills
- Academic Writing
- Expository Writing
- Self Development and Yoga Education
- ICT and E- Education

Outcomes-   will Understand ,apply and get acquaint with communication skills ,ICT skills , coping skills, life skills, use and practice in teaching- learning, research and daily life

Co7 Communication

Outcomes-will communicate effectively with teaching community, peers, students
 and society ,write effective reports and articles, make effective presentations, participation, seminars, conferences.

CO 8- Educational Tour/ Visit

Outcomes-will get opportunity to interact and discuss with experts and educationists,
demonstrate knowledge, skills, values ,reflect on social problems and advanced professional practices and education system.

Table no.1

M. Ed. Programme and Course Outcome Matrix/ Mapping 1

Po^s/Co^s	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6	CO 7	CO 8
PO1	√	√	√	√	√	√	√	√
PO2		√	√	√	√	√	√	
PO3			√	√	√	√		
PO4	√				√		√	√
PO5	√	√	√	√	√	√	√	√
PO6	√	√	√	√	√	√	√	
PO7								

Table no.2

M. Ed. Programme and Course Outcome Matrix/ Mapping 2

Co^s/Po^s	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO1	√			√	√	√
CO2	√	√			√	√
CO3	√	√	√		√	√
CO4	√	√	√	√	√	√
CO5	√	√	√		√	√
CO6	√	√	√		√	√
CO7	√			√	√	√
CO8	√			√	√	

Outcomes of the Educational Research Course

The M.Ed. programme consists two research papers /courses for Semester I-Basics of Educational Research and Statistics and Semester II Advanced Educational Research and Statistics with Dissertation course throughout the four semesters as follows:

Semester I– Formulation of Research Proposal

Semester II – 1) Presentation of Research Proposal

2) Preparation of tools for data collection

Semester III- Preparation and presentation of First draft of the Research Report

Semester IV- 1) Final Research Report (Dissertation) submission

2) Viva voce of the Dissertation

The learning outcomes are to be specified as per the Domains of students development and in terms of verbs or actions

- Cognitive domain -   Knowledge
- Affective domain-   Attitude or self
- Psychomotor domain-   Manual or physical skills

Benjamin Bloom and his colleagues gave the Taxonomy of above domains.

The revised taxonomy of cognitive domain is listed as follows:

Table no.3

Revised Taxonomy of Cognitive Domain

Category	Verbs
Remembering	Defines, describes, identifies, knows, labels, lists, matches names, recalls, recognizes, reproduces, selects, states etc.
Understanding	Comprehends, Converts, defends, distinguishes, explains, extends, rewrites, summarizes ,translates etc.
Applying	Applies, changes, computes, constructs, demonstrates, discovers,manipulates,modifies, operates, predicts, prepares, produces, relates shows,solves,uses etc.
Analyzing	Analyses, breaks down, compares, contrasts, diagrams, deconstructs ,differentiates, discriminates, distinguishes, identifies, illustrates, infers etc.
Evaluating	Appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes,evaluates,explains,interprets, justifies,relates,supports etc.
Creating	Categorizes, combines, compiles, composes, creates, devises, designs,generates,modifies,organizes,plans,rearranges,reconstructs,tells,writes etc.

(Source: Bloom's Taxonomy of learning domains-Internet source)

The learning outcomes of the Educational Research in the Cognitive Domain are given below-

1) **Category- Remembering**

Teachereducator recalls and recognizes the concepts related to Educational Research.

2) **Category - Understanding**

Teacher Educator will define and understand:

- Meaning of Educational Research
- Nature of Educational Research
- Purpose of Educational Research
- Areas of Educational Research
- Types of Educational Research
- Types of variables in Educational Research
- Sources of knowledge generation
- Research paradigms in Education
- Research Methods in Education
- Methods of data collection

- Techniques of data collection
- Types of data in Educational Research
- Descriptive statistics for Educational Research
- Inferential statistics for Educational Research
- Research skills and competencies
- Style of writing references etc.

3) Category - Applying

Teacher Educator will:

- Apply appropriate design for Educational Research
- Select appropriate research tools and techniques
- Select proper style of writing references
- Construct educational research tools and techniques
- Apply knowledge and understanding of research in writing Research Proposal and Report etc.

4) Category- Analyzing

Teacher Educator will:

- Illustrate a set of data in tabular and graphical form
- Classifies reviews as per the Variables of study
- Prepare a research review article
- Use computers and other devices in educational research etc.

5) Category- Evaluation

Teacher Educator will:

- Justify results
- Concludes the results as per the objectives of the study
- Criticizes results as per the objectives of the study
- Criticizes results with reference to reviewed researches
- Evaluate the data, research tools etc.
- Evaluate research hypothesis etc.
- Summarizes results of research study with reference to reviews etc.

6) Category -Creating

Teacher educator will :

- Compile the results
- Formulate research proposal
- Design Research process
- Prepare Research report etc.

Table no.4
Taxonomy of Affective Domain

The Affective Domain includes the manner in which we deal with things emotionally,such as feelings,values,appreciation,enthusiasms, motivations and attitude.

Category	Verbs
Receiving	Acknowledge, asks, attentive, courteous, dutiful, follows, gives, listens.
Responding	Answers, assists, aids, complies, conforms. Discusses, greets, helps, labels, performs, presents, tells.
Valuing	Appreciates, cherish, treasure, demonstrates, initiates, invites, joins, justifies, proposes, respect, shares.
Organization	Compares, relates, synthesizes
Internalizes Values	Acts, discriminates, displays, influences, modifies, performs, qualifies, questions, revises, serves, solves, verifies.

(Source: Bloom's Taxonomy of learning domains-Internet source)

The Learning outcomes of the Educational Researchin Affective Domain are as follows -

1) Category -Receiving

Teacher Educator will:

- Curious to select research problem
- Aware about the problems in the field of teacher education
- Attend the course regularly
- Follows the instructions given by supervisors etc.

2) Category -Responding

Teacher Educator will:

- Participate in class discussion of this course
- Gives presentations on the topic
- Questions in order to fully understand this course
- Defend the results of the study
- Perform Research duty well etc.

2) Category -Valuing

Teacher Educator

- Shows the ability to solve the research problem
- Critically reflect on gender, disability and marginalized by undertaking research and publishing articles
- Proposes plan for future studies
- Respect teachers
- Acknowledge the persons who helped in conduct of research etc.

4) Category -Organizing

Teacher Educator will:

- Accept-Professional ethics
- Accept research ethics
- Explain role in solving problems
- Values the subjects and samples
- Performs duties well as a researchers etc.

Table no.5
Taxonomy of Psychomotor Domain

The psychomotor domain includes physical movements, coordination and use of the motor skill areas.Development of these skills requires practice and is measured in terms of speed, precision,distance,procedures or techniques in execution.

The psychomotor domain taxonomies given by Dr. Dave is considered.

Category	Verbs
Imitation	Copy, follow, mimic, repeat, replicate, reproduce, trace
Manipulation	Act, build, execute, perform
Precision	Calibrate, demonstrate, master, perfectionism
Articulation	Adopt, constructs, combine, creates, customize, modifies, formulate.
Naturalization	Create, design, develop, invent, Manage, naturally.

(Source: Bloom's Taxonomy of learning domains-Internet source)

The learning outcomes related to this domain are as follows:

1) Category -Imitation

Teacher Educator will:

- Reproduce research skills =
- Trace literature reviews
- Repeat the experiment
- Replicate the results etc.

2) Category -Manipulation

Teacher educator will:

- execute research study as per the plan
- Perform/act as a researcher/analyst
- Acquaint with web technology used for Educational Research
- Acquaint with research skills and competencies etc.

3) Category- Precision

Teacher educatorwill:

- Demonstrate duties as a researcher well
- Perfect in research

- Master in research
- Calibrate web tool technology for research
- Use precisely social media, well to us for research etc.

4) Category –Articulation

Teacher educator will:

- Combine skills competency
- Produce multimedia
- Create e-content
- Develop soft wares
- Develop videos etc.

5) Category- Naturalization

Teacher educator will:

- Operates computers quickly and accurately
- Display research competencies and skills while communicating research Invent in future
- Will undertake Research projects in future etc.

The Learning outcomes of Educational Research discussed above will give directions to Research Guides/Supervisors /Teacher educators to plan, execute research at M.Ed., M.Phil. and Ph.D. level.

At M.Ed. level the main emphasize will be on Cognitive Domain but at M.Phil. and Ph.D.level main attention can be given to affective and psychomotor domain.

Table no.6

Programme Outcome, Course Outcomes, Transaction modes andassessment and Evaluation Tools related to Educational Research at M. Ed. Level

PO 2	CO 5	Transaction modes	Assessment and Evaluation Tools
Educational research and investigations	CO 2 Educational Research CO 3 Teacher Education Courses CO 4 Specialization Course CO5 School Stage Specialization CO 6 Skill Enhancement Courses	• Lecture cum discussion • Brain Storming • Group-Discussion • Panel -Discussion • Seminar Presentation • Demonstration • Web Based Technology • Individual and group exercises • Study of published empirical research article • Field visit etc	• Semesters • Internal Examination • Dissertation • Continuous Internal Evaluation throughout the semesters • Viva- Voce

It is just example, they may be add additional verbs in learning outcomes of each domain Today,NAAC criteria II Teaching-Learning and evaluation which has key indicatorteaching-learning process for 5 marks also demand programme outcomes and courseoutcomes.

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