



Report of Four-Week Online Faculty Development Program under Quality Enhancement Cell

February 3-26, 2021

By:

Professor Dr. Muhammad Saeed

Director

Quality Enhancement Cell

**University of the Punjab
Lahore.**

March 05, 2021

ACKNOWLEDGEMENTS

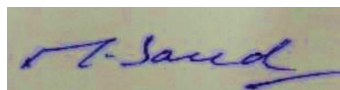
We bow our heads to Almighty Allah, Who is the Most Beneficent and Merciful. Allah may give us the opportunity and potential to gain and transfer more knowledge to others.

I am indebted to the honourable Vice Chancellor, Professor Dr. Niaz Ahmad Akhtar who always encourage to promote the quality of teaching and research in the University of the Punjab. It was due to his visionary leadership that Quality Enhancement Cell (QEC) could plan and execute this four-week faculty development program for its University teachers.

I am grateful to the resource persons who voluntarily gave consent to share their expertise with the faculty members of various disciplines in the University. I appreciate their commitment for the cause of capacity building of the faculty in the key areas of curriculum and program development, citation, and development, marking and analysis of test items. This team included: Professor Dr. Khalid Mahmood, Dean Faculty of Economics and Management Sciences; Professor Dr. Rafaqat Ali Akbar, Director Institute of Education and Research; Professor Dr. Muhammad Saeed, Chairman Department of Educational Research and Evaluation, IER; Dr. Muhammad Aamir Hashmi, Chairman & Associate Professor, Centre for Institutional Strengthening and Policy Analysis, IER; Dr. Muhammad Abiodullah, Associate Professor, Department of Educational Research and Evaluation, IER; and Dr. Aroona Hashmi, Assistant Professor, Department of Secondary Education, IER.

I acknowledge the contribution of Mrs. Hafsa Zahid, Deputy Director QEC who has been quite responsible for arranging online training sessions by keeping in contact with IT Centre of the University. Mr. Ubaidullah from IT Centre has assisted in conducting all sessions, so he is deserved for appreciation. I am also thankful to Ms. Nida Asima, Assistant Director and support staff at QEC who have been engaged to provide all kind of support in this activity.

I appreciate the head of the departments who motivated their faculty to join the faculty development program in their busy schedule. Also the participants who remained eager to learn and made the sessions interactive.



Professor Dr. Muhammad Saeed
Director
Quality Enhancement Cell

List of Contents

Sr. No.	Titles of Sessions/ Resource Persons	Page No.
	Needs and Objectives of Faculty Development Program	4
1	Curriculum Design/Patterns Professor Dr. Rafaqat Ali Akbar, Director IER	6
2	Transforming Curriculum According to PU Template Professor Dr. Muhammad Saeed, Chairman DERE-IER/ Director QEC	8
3	Writing Program Mission and Objectives Dr. Aroona Hashmi, Assistant Professor IER	13
4	APA style 6th and 7th Edition Professor Dr. Muhammad Saeed, IER/Director QEC	23
5	Chicago, Harvard and Oxford Referencing Styles Professor Dr. Khalid Mahmood, Dean FEMS	44
6	Question Papers/Test Development Professor Dr. Muhammad Saeed, IER/Director QEC	49
7	Scientific Mechanism of Test Scoring Dr. Muhammad Aamir Hashmi, Associate Professor/Chairman CID&PA, IER	57
8	Test Item Analysis Dr. Muhammad Abiodullah, Associate Professor IER	62
	Appendix A: Schedule of Online Faculty Training	68
	Appendix B: List of Nominees/Participants	69-78

Need and Objectives of Training

The Director Quality Enhancement Cell as being Secretary/Member of the Curriculum Review Committee constituted by the Academic Council has been entrusted the task of reviewing curricula of various programmes on the prescribed template developed by the Curriculum Committee in September 2019. During the course of time after reviewing over 100 academic programmes at undergraduate and postgraduate levels in different disciplines and other academic documents, it was felt that the faculty engaged in developing these programmes needs training in program/course development and citation. The matter was discussed with the Vice Chancellor, who agreed with this proposal and the Director QEC planned this online training for the capacity building of the faculty of the University. The plan was approved by the Vice Chancellor in the first week of January 2021. At second step, nominations of interested faculty members were invited through their heads. At third step, letters for training were sent to the nominees via email in the following three areas.

1. Program/course development
2. Citation/Referencing
3. Tests development, scoring and analysis

QEC received 115 nominations in the area of program/course development, 90 in the area of Citation, and 98 in the area of question papers/tests development, scoring and analysis in the four week of January 2021 (appendix B). On 26-01-2021 the concerned departments were communicated about the four weeks training schedule via email commencing from 03-02-2021 (appendix A).

The first online training session was started on 03-02-2021 at 2:00PM with the recitation of the Holy Quran. Professor Dr. Muhammad Saeed, Director Quality Enhancement Cell while inaugurating the training programme, shared importance and objectives of the training course. He shared that QEC received over 300 nominations from the faculty of all departments/centres/institutes/colleges of the University of the Punjab through their heads in following of the three areas. The training programme is expected to enhance the professional development of the faculty members in various disciplines of the university. Mainly, the training programme had following objectives.

1. Equip faculty members with the theoretical knowledge about curriculum designs and patterns at higher education level

2. Aware them of the curriculum templates of the degree programmes and associate degree programme to be offered in affiliated colleges
3. Improve teachers' skills in writing mission statement and objectives/learning outcomes
4. Enhance the skill of teachers in citation focusing APA, Harvard, MLA, Oxford and Chicago
5. Develop the skills of test development, item analysis and scoring the tests employing scientific procedure

Curriculum Design/Patterns
Professor Dr. Rafaqat Ali Akbar
Director, Institute of Education and Research
University of the Punjab, Lahore
February 3-2-2021

What is curriculum?

Curriculum is derived from two Latin words “Curree” and “Cullum” which means course of study. The term curriculum is generally considered the instructions taught within the class, which is a misconception. Curriculum includes all the curricular and co-curricular activities carried out within the classroom or outside.

Models of Curriculum

With the advancements in science and technology, new innovations in knowledge expansion of different fields are in progress. Therefore, curricula should also be reviewed periodically.

Two models or approaches of curriculum are prevalent: a) product model, and b) process model. The former focuses on students’ achievement and relatively structured and the later focuses on learning process and carries flexibility. Due to its openness, process model is recommended to make the teaching learning process more effective.

While sharing his experiences, Professor Rafaqat shared that following six questions are important.

1. What will be done (enlist all activities)
2. Who will do it (teachers)
3. When it will be done (suitable time)
4. For whom it will be done (students)
5. What are the objectives to do it (change attitude and behavior of students)
6. How it will be implemented (in labs, library, handouts, classroom environment)

Types of Curriculum Design

There are three types of curriculum designs. Teacher should be clear which curriculum design will be appropriate in a particular situation.

1. Subject centered – it is teacher centered, and less concerned with individual learning difficulties
2. Student centered – subject matter is taught according to the needs of the learners, so students’ learning is enhanced.

3. Problem solving centered – it is modern approach and focuses on problem skills. Students identify their problems and make efforts to solve these by active participation.

Some of the participants raised some questions which were responded by the resource person. On this occasion, he shared that each discipline has its special requirements, so teachers should accordingly resolve the issue. For the science subjects, lab work should be increased. Class strength should be 25 to give individual attention to the students. They should give written feedback on students' work so that they may keep with them as a permanent source of learning.

At the end, the Director QEC paid thanks to the resource person and the participants.

Transforming Curriculum into PU Template

Professor Dr. Muhammad Saeed

Director Quality Enhancement Cell/

Chairman, Department of Educational Research and Evaluation, IER

February 4-2-2021

Dr. Muhammad Saeed welcomed the participants who attended the online training session. He focused his presentation on the prescribed two curriculum templates.

1. Template for a degree programme
2. Template for associate degree programme (to be offered in affiliated colleges)

The resource person, Dr. Muhammad Saeed firstly shared that the face validity of the academic programmes is ensured by observing the templates. Many of the institutions of higher learning in the world follow any specific format so that the main and minor themes of contents could be more clear and understandable for the teachers and students.

1. Template for a Degree Programme

He emphasized that while developed any degree programme i.e. BS or M.Phil/MS and Ph.D levels, the prescribed template should be followed which contained following 14 aspects.

1. **Department Mission**
2. **Introduction**
3. **Program Introduction**
4. **Program Objectives**
5. **Market Need / Rationale of the Program**

Program need assessment may include feedback from multiple sources such as:

- a) **Potential Students for the program.** (career needs, subject interest etc.)
- b) **Potential Employers** (Public, private, NGOs, required skill set, industry projections, employment opportunities/estimated market demand/Number of job openings, Current and future prospects)
- c) **Academic Projections** (The national/ international universities that have launched the similar program)
- d) **Faculty** (Faculty credentials, capacity, resources sufficiency etc.)

e) **Physical Facilities**(Lab and library facilities etc.)

6. Admission Eligibility Criteria

- Years of Study completed
- Study Program/Subject
- Percentage/CGPA
- Entry Test (if applicable) with minimum requirement
- Any other (if applicable)

7. Duration of the Program

Semesters/Years/ Credit hours

8. Categorization of Courses as per HEC Recommendation and Difference

Semester	Courses	Category(Credit Hours)					
		Core Courses	Basic Courses	Major Electives	Minor Electives	Any Other	Semester Load
1							
2							
3							
4							
5							
6							
7							
8							
PU							
HEC Guidelines							
Difference (HEC & PU)							

**Core: Compulsory, Basic: Foundation, Major Electives: Professional Minor Electives: Specialization*

Note: The course/column heads are customizable according to nature and level of the program.

9. Scheme of Studies / Semester-wise workload

Research Thesis / Project /Internship

Details (credit hours, semesters etc.)

10. Award of Degree

Degree awarding criteria stating:

CGPA percentage required to Qualify

Thesis /Project/Internship

Any other requirement, e.g. Comprehensive examination (if applicable)

11. NOC from Professional Councils (if applicable)

12. Faculty Strength (mentioning their areas of specializations in M.Phil and PhD)

13. Present Student Teacher Ratio in the Department

14. Course Outlines separately for each course

- Title and Code Number, Semester, and Credit Hours
- Introduction of the Course (100-150 words)
- Course Objectives
- Course Contents
- Teaching-learning Strategies
- Assignments- Types / Number / Nature
- Assessment and Examinations
- Textbooks. In the detail of course outline, one may mention chapters of the textbook with the content topics
- Suggested Readings (recommended referencing style should be used)

Note:

1. It is preferable to use latest available editions of books. Mention the publisher & year of publication.
2. The References/ bibliography may be in accordance with the manual of the concerned faculty/subject.

2. Template for Associate Degree Programme (to be offered in affiliated colleges)

1. Program Introduction

2. Program Objectives

3. Market Need / Rationale of the Program

The program should include a need assessment to justify the need.

- f) *Potential Students for the program.* (career needs, subject interest etc.)

g) *Potential Employers* (Public, private, NGOs, industry projections, employment opportunities/estimated market demand/Number of job openings, Current and future prospects)

4. Admission Eligibility Criteria

- FA/FSC/ICS or Equivalent

5. Duration of the Program

- 4 Semesters/ 2 Years/ 60 Credit hours (minimum)

6. Categorization of Courses as per HEC Recommendation and Difference

Semester	General Education Courses	Subject Specialized Courses	Semester Load (in credits)
1			
2			
3			
4			
PU			
HEC Guidelines			

7. Scheme of Studies / Semester-wise Workload

Type of course means General Education or Subject Specialized courses. Course sub-category means courses come under stream of Breadth, Function skills, Pakistan Studies, Islamiyat/Religious Studies).

Tarjamtul Quran course and Practical Learning Lab will also be reflected in semesters deemed suitable.

There will be 9weeks mandatory internship.

The departments may add one or two subject specialized courses, if deemed essential.

8. Award of Degree

CGPA/ percentage required to Qualify Associate Degree (As per PU rules)

- Minimum CGPA 2.00 is required for the award of Associate Degree (As per PU rules)

Non-credit mandatory 9 weeks Internship (as per HEC/PU guidelines)

Practical Learning Lab (as per HEC/PU guidelines)

Non-credit course (if any)

9. Course Outlines separately for each course. The course outline has following elements:

- Title and Code Number, Semester, and Credit Hours
- Introduction of the Course (100-150 words)

- Course Objectives
- Course Contents
- Teaching-learning Strategies
- Assignments- Types / Number / Nature
- Assessment and Examinations
- Textbooks. In the detail of course outline, one may mention chapters of the textbook with the content topics
- Suggested Readings (recommended referencing style should be used)

Note:

3. It is preferable to use latest available editions of books. Mention the publisher & year of publication.
4. The References/ bibliography may be in accordance with the manual of the concerned faculty/subject.

Vision, Mission, Goals and Objectives

Dr. Aroona Hashmi

Assistant Professor

Department of Secondary Education, Institute of Education and Research

February 4-2-2021

SUMMARY

Dr. Aroona Hashmi delivered her session on formulation of program mission, goals and objectives with reference to curriculum development. Firstly she shared definitions and made distinction among these terms.

Vision is an institute or program's overarching aspiration of what it hopes to achieve or to become. Mission is a concise statement of general values and principles which guide the curriculum. Goals and objectives are formulated in the light of mission statement. Goals are the targets that a program plans to accomplish or achieve in future.

There are three components of a program's mission statement: a) primary functions of the institute, b) purpose of the program, and c) stakeholders i.e. groups or individuals who participate in the program. A mission statement has following key characteristics.

- ▶ Is the statement clear and concise?
- ▶ Is it distinctive and memorable?
- ▶ Does it clearly state the purpose of the program?
- ▶ Does it indicate the primary function or activities of the program?
- ▶ Does it indicate who the stakeholders are?
- ▶ Does it support the mission of the department, college, and university?
- ▶ Does it reflect the program's priorities and values?

Goal setting involves the development of an action plan designed to motivate and guide a person or group toward a goal. It gives you long-term vision and short-term motivation. Goals may be short-term or long-term.

An objective describes an intended result of instruction, rather than the process of instruction itself. Specifications of "what learners should be able to do as a result of instruction. Objectives are formulated for the following three purposes: a) To provide direction to instruction, b) To provide guidelines for assessment, and c) To convey instructional intent to others.

Objectives may be general such as of a program or unit. These may be specific or instructional or behavioural. There are six components of instructional objectives.

1. Performance

2. Condition
3. Criterion
4. Working in pairs,
5. learners will provide enough information
6. for their partner to draw a three generation family tree

With regard to taxonomy of educational objectives, learning domains are classified into three types: a) cognitive, b) affective and c) psychomotor. The curriculum of every academic program should include objectives of all these three domains of learning so that the holistic development of the individual could be possible.

While writing objectives, following principles should be observed.

1. Variability in specificity
2. Flexibility (they are not permanent)
3. Consensus-based in nature
4. Program specificity
5. Teacher-friendliness

The complete presentation is seen below.

Writing Program Mission and Objectives/ Learning Outcomes

Dr. Aroona Hashmi

Assistant Professor

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DETAILED PRESENTATION

LEARNING OUTCOMES

The worthy colleagues will be able to:

- ▶ Distinguish between Program vision, mission, and

Goals

- ▶ Formulate mission and objectives/ learning outcomes for degree programs

Three core questions:

- ▶ Where the Institution/Program is going?
- ▶ What it will do to get there?
- ▶ How it will be achieved?

Vision, Mission and Goals

- ▶ A vision statement is a statement of an Institute /program's overarching aspirations of what it hopes to achieve or to become.
- ▶ The Program Mission Statement is a concise / brief statement of the general values and principles which guide the curriculum. It sets a tone and a philosophical position from which follow a program's goals and objectives.
- ▶ Goals: Goal is defined as the targets or purpose that a program plans to accomplish or to reach or to achieve in future. They are driving force that directs the program to make efforts to achieve it.

Vision, Mission and Goals of University of the Punjab

▶ Vision

Punjab University intends to be a leading public university in providing affordable educational opportunities to develop scientific, socio-cultural, economic and political leadership, through learner-centred teaching and research, while strengthening our identity at National and International level.

► Mission

Our mission is to provide a holistic education as such an approach has a two fold benefit.

The first is that young people are nurtured to be sensitive, tolerant, humane and capable of thinking in a creative and critical way. The second is, that armed with a sense of history and equipped with knowledge and expertise, the graduates whom we send out into the world are in a better position to develop their leadership potential and make a positive contribution to public life. We hope that understanding as they do, their role in the wider community of human kind and responsible to it their action and attitudes will reflect their education.

Goals

- Improve quality and standard of education to conform the national / international needs
- Promote of development-oriented applied research.
- Find out accountability in finances and academic programs.
- Develop character of youth with an emphasis on morality and growth of maturity.

Mission Statement

- The *Program Mission Statement* is a concise statement of the general values and principles which guide the Program. It sets a tone and a philosophical position from which follow a program's goals and **objectives**.

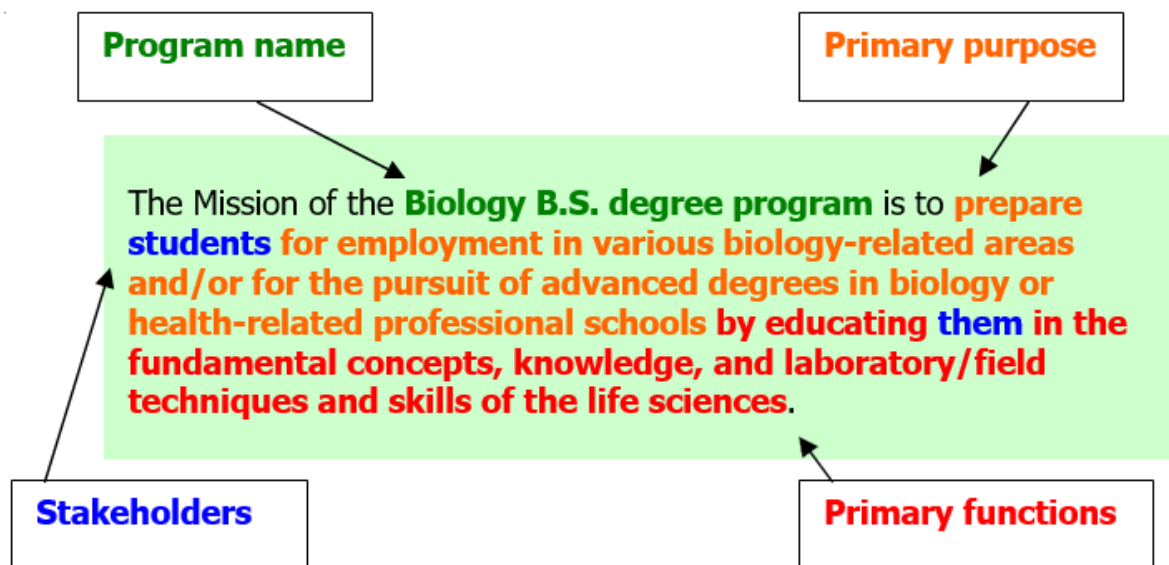
Program Mission Statement

- Is a broad statement of *what the program or unit is, what it does, and for whom it does it?*
- Is a clear description of the *purpose* of the program or unit and the learning environment?
- Reflects how the program contributes to the education and careers of students graduating from the program or how the unit supports its customers?
- May reflect how the teaching and research efforts are used to enhance student learning?
- Is *aligned* with department, college, and university missions?
- Should be distinctive for the program or unit?

Components of a Program Mission Statement

- **Primary functions** or activities of the Institute /Program—
What does this program uniquely offer that differentiates it from other programs?
- **Purpose** of the program— primary reasons
why you perform your major activities or operations?

- ▶ **Stakeholders** – groups or individuals that participate in the program and those that will benefit from the program. What kinds of learning opportunities does the program provide?
- ▶ THE MISSION of the Biology B.S. degree program is to prepare students for employment in various biology –related areas and /or for the pursuit of advanced degrees in biology or health-related professional schools by educating them in the fundamental concepts, knowledge , and laboratory/ field techniques and skills of the sciences.



Example: Academic Success Center

- ▶ The mission of the Academic Success Center is to ensure that [all Wayne State University students] become [self-determined, motivated and independent learners.] We accomplish this through [tutoring, Supplemental Instruction, individual instruction and workshops] that support students' development of skills to achieve academic excellence.

Checklist for a Mission Statement

- ▶ Is the statement clear and concise?
- ▶ Is it distinctive and memorable?
- ▶ Does it clearly state the purpose of the program?
- ▶ Does it indicate the primary function or activities of the program?
- ▶ Does it indicate who the stakeholders are?
- ▶ Does it support the mission of the department, college, and university?

- ▶ Does it reflect the program's priorities and values?

Mission Statement: Pitfalls to Avoid

- ▶ Wording that is: Too general, applicable to any program.
- ▶ Descriptive of a department or unit rather than one specific program.
- ▶ Focused on teaching or research rather than student learning.
- ▶ Written for a specialist/expert audience rather than a general audience.

Goals

- ▶ Goal setting involves the development of an action plan designed to motivate and guide a person or group toward a goal.
- ▶ It gives you long-term vision and short-term motivation.
- ▶ Goals may be Short Term or Long Term.
- ▶ **Vision**
- ▶ Punjab University intends to be a leading public university in providing affordable educational opportunities to develop scientific, socio-cultural, economic and political leadership, through learner-centred teaching and research, while strengthening our identity at National and International level.
- ▶ **Mission**
- ▶ Our mission is to provide a holistic education as such an approach has a two-fold benefit.
- ▶ The first is that young people are nurtured to be sensitive, tolerant, humane and capable of thinking in a creative and critical way. The second is, that armed with a sense of history and equipped with knowledge and expertise, the graduates whom we send out into the world are in a better position to develop their leadership potential and make a positive contribution to public life. We hope that understanding as they do, their role in the wider community of human kind and responsible to it their action and attitudes will reflect their education.

Goals

- Improve the quality and standard of education to conform the national / international needs
- Promote development-oriented applied research.
- Find out accountability in finances and academic programs.
- Develop character with an emphasis on morality and growth of maturity

Goals

The Institute of Education and Research will strive to achieve the following goals:

- ▶ To provide and promote facilities for advanced studies and research in Education.
- ▶ To provide teaching, training and guidance in order to prepare students for the Bachelor, Master, M.Phil, and Ph.D. degrees in Education of the University, and such other diplomas in education as may be instituted.
- ▶ To provide opportunities for professional educators to improve their knowledge and skills through summer courses.
- ▶ To publish the results of research, and act as an educational information dissemination center.
- ▶ To provide outreach guidance to the schools of Punjab.
- ▶ To render other services to educational institutions.

Objectives / Learning Outcomes

- ▶ An objective describes an intended result of instruction, rather than the process of instruction itself.
- ▶ Specifications of “what learners should be able to do as a result of instruction.”

Why have objectives?

- To provide direction to instruction
- To provide guidelines for assessment.
- To convey instructional intent to others.

Components of Instructional Objectives

- ▶ **Performance**
- ▶ **Condition**
- ▶ **Criterion**
- ▶ Working in pairs,
- ▶ learners will provide enough information
- ▶ for their partner to draw a three generation family tree

Types of objectives

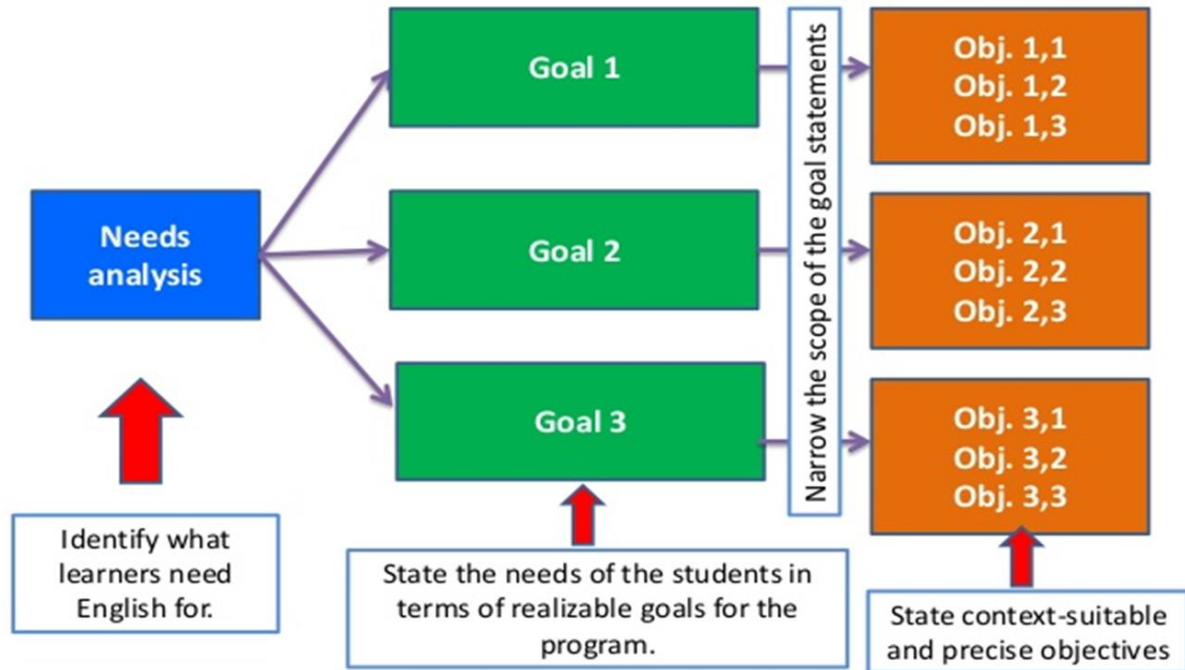
- **Cognitive:** understandings, awareness, insights (e.g., "List and explain..."). This includes information recall, conceptual understanding, and problem-solving.
- **Psychomotor:** special skills (e.g., "dissect a frog so that the following organs are clearly displayed...")
- **Affective:** attitudes, appreciations, relationships, values, behaviours etc.

Tips for writing objectives

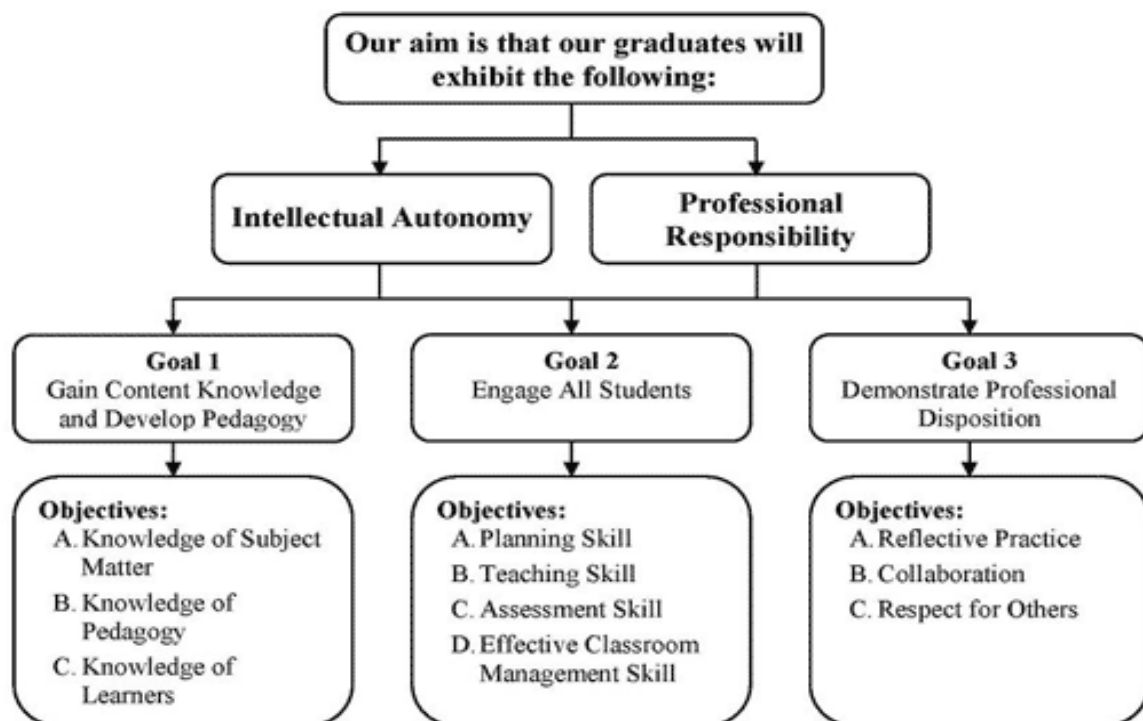
- Variability in specificity
- Flexibility (they are not permanent)
- Consensus-based in nature
- Program specificity
- Teacher-friendliness

Learning level	Associated action verbs
Knowledge	define, describe, state, list, name, write, recall, recognize, label, underline, select, reproduce, outline, match
Comprehension	identify, justify, select, indicate, illustrate, represent, name, formulate, explain, judge, contrast, classify
Application	predict, select, assess, explain, choose, find, show, demonstrate, construct, compute, use, perform
Analysis	analyze, identify, conclude, differentiate, select, separate, compare, contrast, justify, resolve, break down, criticize
Synthesis	combine, restate, summarize, precise, argue, discuss, organize, derive, select, relate, generalize, conclude
Evaluation	judge, evaluate, determine, recognize, support, defend, attack, criticize, identify, avoid, select, choose

Developing goals and objectives from needs



In order to achieve our primary purpose of preparing educators who possess intellectual autonomy and professional responsibility, our work centers on three goals and their respective objectives:



APA 6th and 7th Edition
Professor Dr. Muhammad Saeed
Director Quality Enhancement Cell/
Chairman, Department of Educational Research and Evaluation, IER
February 11, 2021

SUMMARY

Professor Dr. Muhammad Saeed delivered his online presentation to the nominated faculty of the University on key features of American Psychological Association style version 6 and 7. While sharing his experiences, he stressed that all academicians should follow peculiar style while writing any academic document such as curriculum/syllabi of programs, research proposals, research reports/theses, assignments etc.

Dr. Saeed shared that APA was initially started as journal manuscripts guidelines at Washington, DC, USA. Later on, manual was extended to detailed guidelines for journals, thesis and other such academic writings. It contained guidelines on footnotes, in-text and end references, tables, figures/graphs, headings, font type and size etc.

The presentation covered key aspects of APA manual 6 and the changes made in its edition 7 introduced in October/November 2019. He presented that the key elements / components of citation are as following.

- Author or authoring body
- Date of publication
- Title of the work
- Edition
- Publisher
- Place of publication
- Title of the source
- Location information within the source
- URL or DOI
- Nonroutine information

Each of the above elements was explained by giving examples. Along with differences between its version 6 and 7 were discussed. In this regard, following differences can be seen between APA 6 and 7.

1. Name of city / country while writing bibliographical references are not needed according to APA 7th edition but was mandatory in APA 6
2. Titles of figures are written above the figures/graphs in Title Case according to APA 7 whereas in APA 6 it was recommended to write title after the figure and in lower/sentence case.
3. One of another notable difference between both styles is regarding paper format is flexibility in font style/type and size in APA 7 which recommends five type style: a) Times New Roman = 12; b) Calibri = 11; c) Arial = 11; d) Georgia = 11, and e) Lucida Sans = 10.
4. Another notable feature that distinguishes APA 6 and 7 is the appropriate level of specificity for example a person's age (exact age; 15 years old or in the range of 15-18 years is to be indicated according to APA 7th edition, instead as under 18 years or over 15 years as recommended in APA 6th edition; same in the case of other demographics like experience etc.
5. As regards disability, if necessary to mention, write exact disability such as physical disability or people with physical disabilities, instead 'disability or disabled.
6. About racial and ethnic identity (Chinese Americans, Mexican Americans are more specific than Asian and Latin Americans as per APA 7th edition.
7. Instead of using adjectives as nouns to label groups of people, descriptive phrased are preferred. For example, under APA 6, it is written "The poor people feel" while according to APA 7, it is recommended as "The people living in poverty feel ...".
8. The singular 'they or their' is written as a gender – neutral pronoun. For example,
 - A researcher's career depends on how often he or she is (**APA 6th ed.**).
 - A researcher's career depends on how *they* are (**APA 7th ed.**).

The complete presentation is given below.

APA Style 6th & 7th Edition

Professor Dr. Muhammad Saeed
Chairman, Department of Educational Research & Evaluation/
Director, Quality Enhancement Cell
University of the Punjab, Lahore

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director.qec@pu.edu.pk

February 11, 2020

DETAILED PRESENTATION

What does mean citation?

- Citation means the way of referencing others' work according to set principles.
- Many referencing styles are prevalent globally such as Oxford, Harvard, APA, MLA, ASA, Chicago etc.
- The most frequently referencing style/ format used worldwide in various disciplines is APA, means "American Psychological Association".
- APA explains citations of information: a) within text, and b) in a reference list/bibliography at the end of the paper/report/thesis/book etc.

APA

- APA publishes the Manual called as APA Manual every year at Washington, DC.
- In 1929, APA published instructions for authors on how to prepare manuscripts for APA journals. Later used for theses, term papers, other academic writings etc. The manual includes all details of language, font size, format and style of tables, figures, headings, subheadings etc.
- Currently its 7th edition of APA is in practice.
- Published in November 2019.

Elements of citation

- Author or authoring body
- Date of publication
- Title of the work
- Edition
- Publisher

- Place of publication (In APA 6th ed.) (Not in 7th ed.)
- Title of the source
- Location information within the source
- URL or DOI
- Nonroutine information

Citation of author

- Surname/Initials
Saeed, M.
- Hyphenated
Nisa, M. –U (Mehr-un-Nisa)
- Editor's(name)
Robinson, D. N. (Ed.)
- No(author)
write title
- Delete Prof., Dr., Maj., Retd., etc.

Authoring body or group

- Full
National Institute of Health
- Subordinate
University of the Punjab, Institute of Business Administration
- Government
Government of Pakistan, Ministry of Finance

Date of publication

- Journal/book/AV/media
1993
- Monthly/Magazine/Newsletter
1993, June
1993, Spring
- Daily, Weekly
1994, September 28

- Accepted work but not yet published
in press
- No date available
n.d.
- Publication over long period
1959-1963
- Republished work, a note at the end
(Original work published 1923)

Title of the work

- Title of book
- Title of book chapter/yearbook
- Title of journal article
- Title of encyclopedia article
- Subtitle with colon

Edition

- Edition in Arabic numeral
2nd ed.
- Rev. ed.
4th rev. ed.

Publisher

- Publisher name for non-periodicals
- Omit superfluous terms, such as Publishers, Publications, Co., Inc.
Sage (not preferred as: Sage Publications)
Wiley
McGraw-Hill
Prentice Hall
Ferozesons

Place of publication

- Name of city

- If city is not well known, then add state/province and/or country
Hafizabad, Pakistan
Medford, NJ
- US postal service abbreviations for states (2-digit codes)
CA for California, NY for New York
- If more cities are given, use the first or the publisher's head office if clearly mentioned

(APA 6th ed.)

- In APA 7th edition, place of publication is not recommended/desired.

Title of the source

- Title of the book should be Italic in case of a book chapter
- Title of the journal should be Italic in case of journal article

Journal title be written in full. However if journal management uses abbreviations, then that may be used.

Harvard Business Review

Not Har. Bus. Rev. OR HBR)

Location

- Journal volume and issue number in Arabic numerals
33(4)
- Volume of a book
Vols. 1-10
(Vol.6, pp. 501-508)
- Start and end page numbers for journal article or book chapter
215-224 OR pp. 215-224.
- Discontinuous pages
5-7, 11-12

URL / DOI

- Uniform Resource Locator (URL)
<http://www.topicsinclinicalnutrition.com>
- Digital Object Identifier (DOI)
10.1037/0002-9432.76.4.482

Non-routine information

- Give non-routine but important information in square brackets, e.g.
[Letter to the editor]
[Special issue]
[Brochure]

Part –I: Citation in Text

- APA uses ‘author-date method of citation. This means the last name of the author and the date of publication are inserted in the text at appropriate place.
- While referencing or summarizing a source, name of author and year is written but while quoting or summarizing a particular passage/text, there is need to mention specific page number/s.

Citation in Text

- If a direct quotation is up to 40 words, incorporate it into your text while putting quotation marks i.e. “...” if exact quotation is to be quoted, but if information is described in own words then no need to put “...”.
- If the direct quotation is more than 40 words, write the quotation in a free-indented block of text and quotation marks are not used. Leave 5-7 spaces or just one normal tab from left side while composing on computer
- In above both cases, to mention page number is mandatory.

Citation in Text:

Example – Long quotation

Meile (1993) found that:

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)

Citation in Text

- **One/single author text reference**

In one of the assessment study (Haris, 2009) found OR

In the study conducted by Haris (2009), secondary grade students

Writing Text Ref.:**Single author example**

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

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

Citation in Text (more authors)

- **In case of two authors**

Ali and Ahmad (2007) or (Ali & Ahmad, 2007)

- **For three to seven authors:**

First citation will be: Irshad, Kausar and Sadia (2007) and in the subsequent citations, write the last name of first author followed by et al., as in above example, Irshad et al. (2007).

- **For more than 7 authors:**

Write the last name of first author followed by ‘et al.’ and the year.

Irshad et al. (2007) or (Irshad et al., 2007).

Citation in Text:**Multiple citations**

- Multiple sources from same author – chronological order, separated by comma
(Bokhari, 2010, 2011, in press)
- Within same year:
(Bokhari, 2010a, 2010b, 2011, in press)
- Multiple sources – separated by semicolon, alphabetical order
(Bokhari, 2010; Pervez, 2002; Salma, 2020)

Citation in Text:**Secondary reference**

- In 1947 the World Health Organization proposed the following definition of health. “Health is a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity” (World Health Organization, as cited in Potter & Perry, 2001, p. 3).

Citation in Text

- **Work by no identified author**

In case name of author is unknown, cite the first few words of the reference within quotation marks and mention year, e.g. (“Student-centered learning,” 1999)

- **Two or more works in the same parenthesis**

In such case the text references should be cited in alphabetical order, and then chronologically in context to year, e.g.

Previous researches (Irum, 2019; Saeed, 2018; Usman & Amina, 2015, 2017) show that.....

Citation in Text

Personal communication

- Personal communication (email, phone, conversation, letter, etc.)

(T.K. Lutes, personal communication,
September 19, 2020)

- Not included in reference list

Citation in Text:

Handling parenthetical citations

- More than one author with the same last name

(H. James, 1878); (W. James, 1880)

- Specific part of a source

(Jones, 1995, chap. 2)

- If the source has no known author, then use an abbreviated version of the title:

Full Title: “California Cigarette Tax Deters Smokers”

Citation: (“California,” 1999)

Levels of Headings

1. Level I heading: (16 font size)

Bold, Centered, Uppercase and Lowercase Heading

2. Level II heading: (14 font size)

Bold, Flush Left, Uppercase and Lowercase Heading

3. Level III heading: (12 font size)

Indented, bold, sentence case paragraph heading ending with a period.

4. Level IV heading: (12 font size)

Indented, boldface, italicized, lowercase paragraph heading ending with a period.

5. Level V heading: (12 font size)

Indented, italicized, lowercase paragraph heading ending with a period.
(APA 6th ed.)

Introduction

In October 2019, the American Psychological Association (APA) introduced the 7th edition of the APA Publication Manual, which replaces the 6th edition published in 2009. In that time a lot of things have changed. Citing online material has become more common, the use of inclusive and bias-free language is increasingly important, and the technology used by researchers and students has changed (Taylor et al., 2019).

Paper Format

In the 7th edition, APA decided to provide different paper format guidelines for professional and student papers. For both types a sample paper is included.

Page header. The running head on the title page no longer includes the words “Running head:”. It now contains only a page number and the (shortened) paper title.

Page header for students. The running head is omitted in student papers (unless your instructor tells you otherwise).

Page header for professionals. The running head is obligatory for professionals unless it is not the requirement of any specified journal.

Levels of Headings

Centered, Bold, Title Case Heading

Text begins as a new paragraph.

2. Flush Left, Bold, Title Case Heading

Text begins as a new paragraph

3. Flush Left, Bold Italic, Title Case Heading

Text begins as a new paragraph

4. Indented, Bold, Title Case Heading, Ending With a Period.

Text begins on the same line and continues as a regular paragraph.

5. *Indented, Bold Italic, Title Case Heading, Ending With a Period.*

Text begins on the same line and continues as a regular paragraph.

(APA 7th ed.)

Introduction

In October|2019, the American Psychological Association (APA) introduced the 7th edition of the APA Publication Manual, which replaces the 6th edition published in 2009. In that time a lot of things have changed. Citing online material has become more common, the use of inclusive and bias-free language is increasingly important, and the technology used by researchers and students has changed (Taylor et al., 2019).

Paper Format

In the 7th edition, APA decided to provide different paper format guidelines for professional and student papers. For both types a sample paper is included.

Page Header

The running head on the title page no longer includes the words “Running head:” It now contains only a page number and the (shortened) paper title.

Page Header for Students. The running head is omitted in student papers (unless your instructor tells you otherwise).

Page Header for Professionals. The running head is obligatory for professionals unless it is not the requirement of any specified journal.

Table

APA Style tables have the following basic components:

- **Number.** Table 1
- **Title.** *Title Case.*
- **Headings.** *Italic.*

- **Body.** The table body includes all the rows and columns of a table (including the headings row).
 - Single-spaced, one-and-a-half-spaced, or double-spaced.
 - Left-align the information in the leftmost column (but center the heading).
 - (APA 6th ed.)

The diagram illustrates the components of a prototypical APA table. Annotations include:

- table number:** Points to "Table 1".
- table title:** Points to the title "Numbers of Children With and Without Proof of Parental Citizenship".
- stub heading:** heading that describes the leftmost column. Points to the "Grade" column header.
- column spanner:** heading that describes the entries in two or more columns in the table body. Points to the "Girls" and "Boys" group headers.
- decked heads:** headings that are stacked, often to avoid repetition in column heads. Points to the "With" and "Without" sub-headers under "Girls" and "Boys".
- table spanner:** heading that covers the entire width of the table body, allowing for further divisions. Points to the "Wave 1" and "Wave 2" section headers.
- column heading:** heading that identifies the entries in just one column in the table body. Points to the "Total" column header.
- cell:** point of intersection between a row and a column. Points to a data cell in the table body.
- table body:** rows and columns of cells containing the primary data of the table. Points to the data rows.
- stub column or stub:** leftmost column of the table; usually lists the major independent or predictor variables. Points to the "Grade" column.
- table notes:** explanations to supplement or clarify information in the table body. Points to the "Note" at the bottom.

Grade	Girls		Boys	
	With	Without	With	Without
Wave 1				
3	280 ^a	240 ^b	281	232
4	297	251	290	264
5	301	260	306	221
Total	878	751	877	717
Wave 2				
3	201	189	210	199
4	214	194	236	210
5	221	216	239	213
Total	636	599	685 ^a	622

Note. This table demonstrates the elements of a prototypical table. A general note to a table appears first and contains information needed to understand the table, including definitions of abbreviations (see Sections 7.14–7.15) and the copyright attribution for a reprinted or adapted table.

Figure

APA Style figures have the following basic components:

Number: The figure number appears below the image, *Italic* and not bold (e.g. *Figure 1*).

Title: write title in sentence case and do not bold.

Description: Write description of figure above the figure.

(APA 6th ed.)

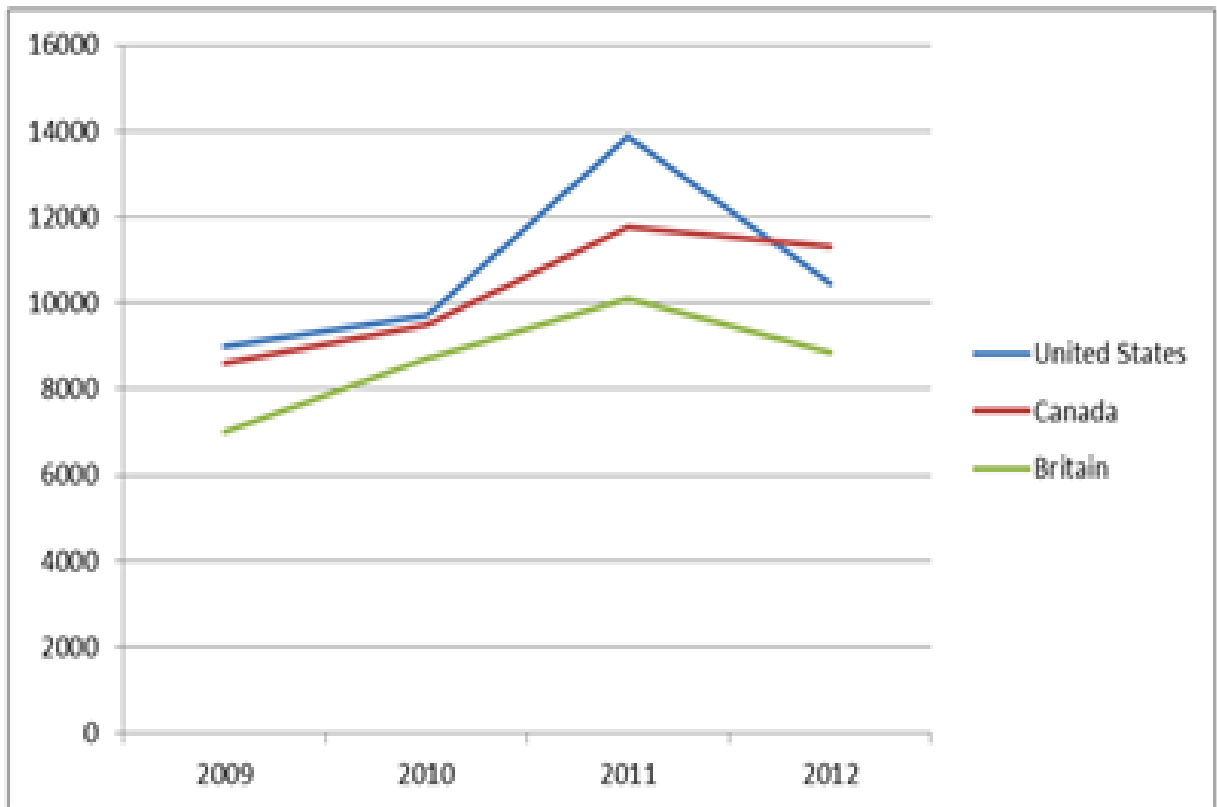


Figure 1. Sale of luxury goods in the United States, Canada, and Britain by value 2009-2012. Data for the United States from Euromonitor (2013a), for Canada from Statistics Canada (2012), and for Britain from Kurtzman (2013).

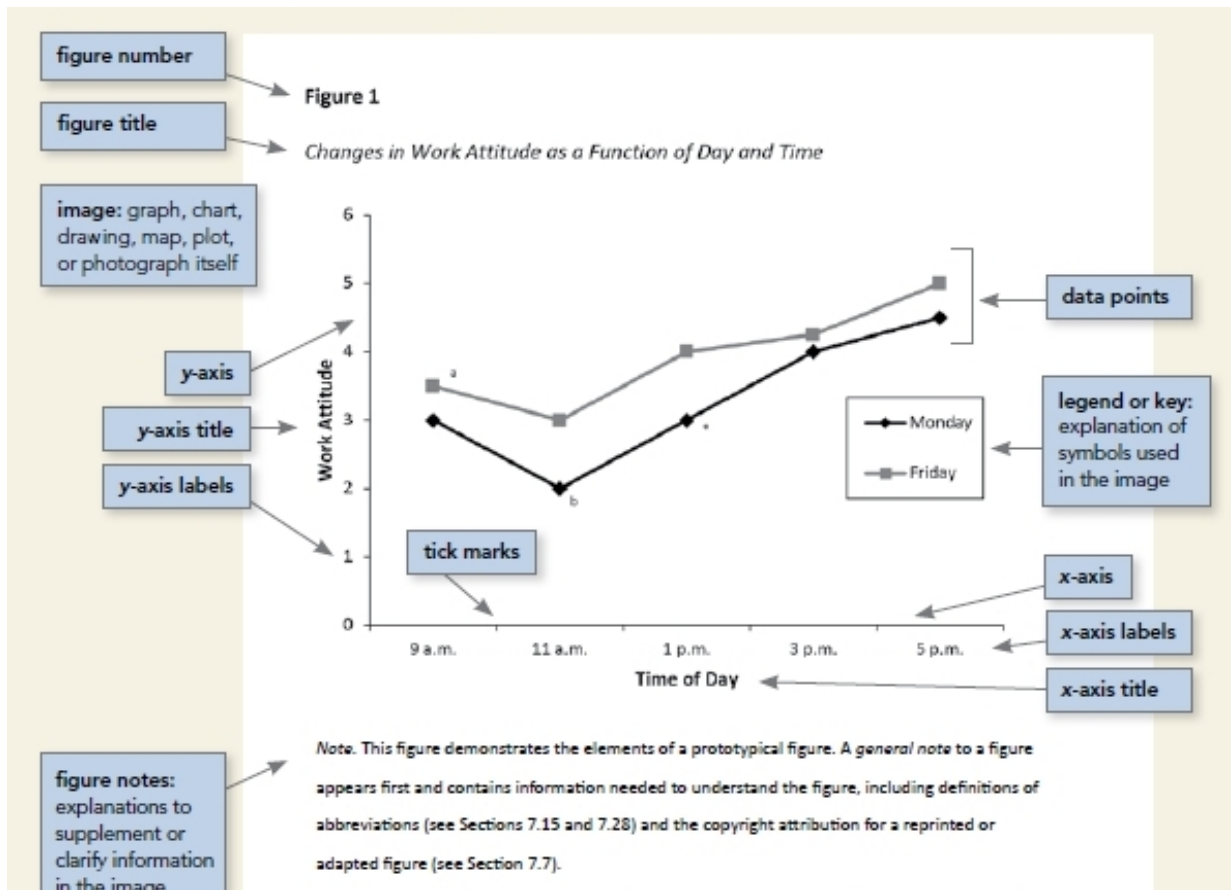
Figure

Number: The figure number (e.g., **Figure 1**) appears above the figure title and image in **bold font**.

Title: Capitalize the figure title in *Italic* and *Title Case*.

Description: The description of figure is recommended to write before the image.

(APA 7th ed.)



This is an example of figure as per APA 7th edition.

Part-II

Reference list/ Bibliography

- Place the list of references cited at the end of the paper/book/thesis etc.
- Start references on a new page
- Begin each entry flush with the left margin
- Indent subsequent lines five to seven spaces (hanging indent)
- Double space both within and between entries
- *Italicize* the titles of books, magazines, journals, etc.

Reference list/Bibliography

- Arrange sources alphabetically beginning with author's last name
- If author has more than one source, arrange entries by year, earliest first
- When an author appears both as a sole author and, in another citation as the first author of a group, list the one author entries first
- If no author given, begin entry with the title and alphabetize without counting a, an, or the
- Do not underline, rather italicize or use quote marks for titles used instead of an author name
- For online information, search through DOI
- DOI is a unique alphanumeric string assigned to identify content and provide a persistent link to its location on the internet. It is usually located on the first page of the e-journal near the copyright notice. When DOI is cited, then no other retrieval information is needed. It is usually written like, doi:xxxxxxx

- **Reference from a book**

Saeed, M. (2002). *Knowledge management*. Lahore: Ghulam Rasul & Sons.

(APA 6th ed.)

Saeed, M. (2002). *Knowledge management*. Ghulam Rasul & Sons.

(APA 7th ed.)

- **Reference from a book**

Gregory, G., & Party, T. (2006). *Designing brain-compatible learning* (3rd ed.). Thousand Oaks, CA: Corwin.

(APA 6th ed.)

Gregory, G., & Party, T. (2006). *Designing brain-compatible learning* (3rd ed.). Corwin.
(APA 7th ed.)

Reference List/Bibliography

- Akhtar, N. A. (2016a). Control ...
- Akhtar, N. A. (2016b). Roles of ...
- Bloom, B. S. (1956). Taxonomy of ...

- Bloom, B. S. (1961). Taxonomy of ...
- Chaudhry, M. H. (2018). Preventions ...
- Tasneem, K. (2015). Teacher ...

Book with seven or more authors

Wolchik, S. A., West, S. G., Sandler, I. N., Tein, J., Coatsworth, D., Lengua, L.,
et al. (2000). An experimental evaluation of...

Book with no author

Merriam-Webster's Collegiate Dictionary (10th ed.). (1993). Springfield, MA:
Merriam-Webster.

• **Citation of chapter of a year book/ Encyclopedia**

Saeed, M. (2007). Developing primary school teachers mentoring model. In *ICET international yearbook* (pp. 23-32). University of Illinois.

Note: Here title of yearbook is italicized, instead title of chapter/theme.

• **Citation of a chapter from a book edited/ handbook**

Mehmood, S. (2008). Tacit and explicit knowledge. In A.R. Kausar & M. Azam (Eds.), *Knowledge management in a global society* (2nd ed., pp. 50-72). Ferozesons

Reference from a multivolume book

Koch, S. (Ed.). (1959-1963). *Psychology: A study of science* (Vols. 1-6). McGraw-Hill.

• ***Reference from a journal***

Lee, Y. J., & Greene, J. (2007). The predictive validity of an **ESL** placement test: A mixed- methods approach. *Journal of Mixed-Methods Research*, 1(4), 366-389.

If paper in press

Jones, R. (in press). The new healthcare lexicon. *Journal of Health*.

Reference from a magazine

Posner, M. I. (2003, October 29). Seeing the mind. *Science*, 262,
673-674.

- **Reference from dissertation/thesis**

Altaf, F. (2021). Implementation of National Professional Standards for Teachers in Public Sector Secondary Schools of Punjab (Unpublished doctoral thesis, University of the Punjab).

- **References from an official document**

Government of Pakistan. (2009). National Education Policy 2009. Curriculum Wing, Ministry of Education.

Allama Iqbal Open University. (2010). Annual report 2009. AIOU Press.

Videotape reference

National Institute on Mental Health. (2001). *Drug abuse* [videotape]. Bethesda: Author.

- **Web/Online citation**

It is better to write complete online reference that appears at the top while downloading the materials and then mention retrieved date or date of access of the material.

You may also mention website as

www.hec.gov.pk

www.moe.edu.pk

Web/doi citation

Green, C. (2000, April 16). History & philosophy of psychology web resources. Retrieved from <http://www.yorku.ca/dept.htm>

(APA 6th ed.)

In APA 7th ed. The word “Retrieved from” is omitted.

Saeed, M. (2019). *Knowledge management*. Ghulam Rasul & Sons. <http://www.pu.edu.pk> (APA 7th ed.)

Stultz, J. (2006). Integrating exposure therapy and analytic therapy in trauma treatment. *American Journal of Orthopsychiatry*, 76(4), 482–488.

<http://doi:10.1037/0002-9432.76.4.482>

(APA 7th ed.)

Reference List/Bibliography

Heuristic. (n.d.). In Merriam-Webster’s online Dictionary. Retrieved from <http://www.m-w.com/dictionary>

(APA 6th ed.)

Heuristic. (n.d.). In *Merriam-Webster's online dictionary*. <http://www.mw.com/dictionary>

(APA 7th ed.)

Activity 1: Write a name of any e-book according to APA style (7th edition)

Reference from PowerPoint slides

Columbia University, Teachers College, Institute for Learning Technologies.

(2010). Smart cities: New York: Electronic education for the new millennium [PowerPoint slides]. Retrieved from

<http://www.ilt.columbia.edu/publications/index.html> (APA 6th ed.)

Columbia University, Teachers College,
Institute for Learning Technologies.

(2010). Electronic education for the new millennium [PowerPoint slides].

<http://www.ilt.columbia.edu/publications/index.html> (APA 7th ed.)

Reference of press release

American Psychological Association. (2006, April 30). Internet use involves both pros and cons for children and adolescents [Press release]. <http://www.apa.org/releases/youthwww0406.html> (APA 7th ed.)

Other Key Features of APA 7th Edition

- APA paper format
- Heading of paper
- Inclusive and bias-free language
- Mechanics of style

Paper Format

The most notable change regarding paper format is flexibility in font style/type and size in APA 7 such as:

Times New Roman = 12

Calibri = 11

Arial = 11

Georgia = 11

Lucida Sans = 10

Page Header

Page header appears in the same place as in **APA 6th version** but change for students and professionals in **APA 7th version**.

- For students' papers, page header only includes page number.
- For professionals, page header consists of page number and running head with all capital letters without labelling "Running Head" before writing running head.

Introduction

In October 2019, the American Psychological Association (APA) introduced the 7th edition of the APA Publication Manual, which replaces the 6th edition published in 2009. In that time a lot of things have changed. Citing online material has become more common, the use of inclusive and bias-free language is increasingly important, and the technology used by researchers and students has changed (Taylor et al., 2019).

Paper Format

In the 7th edition, APA decided to provide different paper format guidelines for professional and student papers. For both types a sample paper is included.

Inclusive and Bias Free Language

Describe at the appropriate level of specificity for example:

- Person's age (exact age; 15 years old or in the range of 15-18 years indicated in **APA 7th edition**)

(not as under 18 years or over 15 years as mentioned in **APA 6th edition**)

*Same in the case of other demographics like experience etc.

- Disability (write exact disability such as physical disability or people with physical disabilities, instead ‘disability or disabled’)
- People who took part in research (patients, participants, clients, students etc.).
- Racial and ethnic identity (Chinese Americans, Mexican Americans are more specific than Asian and Latin Americans).
- Instead of using adjectives as nouns to label groups of people, descriptive phrases are preferred. For example,

The poor people feel (**APA 6th edition**)

The people living in poverty feel ...

(**APA 7th ed.**)

- Socioeconomic status (e.g. income; below the federal poverty threshold for a family of four is specific than low income).

(**APA 7th ed.**)

- **Activity 2: Write any other example describing each of the above two types of in-text situations.**

The singular ‘they or their’ is written as a gender – neutral pronoun. For example,

- A researcher’s career depends on how often he or she is (**APA 6th ed.**).
- A researcher’s career depends on how *they* are (**APA 7th ed.**).

Mechanics of Style

- Use only one space after a period at the end of a sentence (**APA 7th edition**) instead of double spaced as in (**APA 6th edition**).

Use double quotation marks to refer to linguistic examples rather than italicize (e.g. APA 7th edition endorses the use of singular pronoun as “they” instead of they).

- **Activity 3: Write any other linguistic example describing above situation.**
- Capitalize second part of hyphenated words such as Self-Report (APA 7) instead Self-report (APA 6).
- Words of four letters or more will be written in title case if come in title of table or heading (Before, After, With, From) (**APA 7th edition**) instead of before, after, with , from (**APA 6th edition**).

- First use of key terms or phrases will be written in Italic (*Assessment* is defined as)

THANKS &

Any Questions or Comments

For more information, please see APA Manual Website www.apastyle.org

Acknowledgments

The presenter acknowledges the professional input of Professor Dr. Khalid Mahmood and assistance of his M.Phil advisees - Ahmad Khan (late) and Shumaila Tariq in developing this presentation.

Citations in Harvard, MLA and Chicago Styles

Professor Dr. Khalid Mahmood

Dean Faculty of Economics and Business Management,

University of the Punjab, Lahore

February 12, 2021

SUMMARY

Professor Dr. Khalid Mahmood delivered his valuable online talk at 2:00PM on 12-02-2021 on the citations as per Harvard, MLA and Chicago styles. While commencing the talk, he shared that Harvard style is not developed by Harvard University, USA. It is unclear why this style is named so but some people say that some teachers of this university started writing according to set principles by giving citations in their pattern which was gradually named as Harvard style. He shared that different styles are prevalent in the world including the following key ones;

- APA – American Psychological Association
- MLA – Modern Language Association
- Chicago Style – Chicago Manual of Style
- Turabian Style – based on Chicago Style
- Harvard Referencing System
- ASA – American Sociological Association
- CBE - Council of Biology Editors

Dr. Khalid Mahmood also discussed the following key softwares of citations.

- Software packages, e.g. EndNote, Mendeley, etc.
- Free citation generators, e.g. Scribbr, EasyBib, etc.
- Indexing databases, e.g. Google Scholar, etc.
- Library guides, e.g. Many guides searchable on Google

He shared that first of all the researcher/writer needs to be clear about the type of reference to be made i.e. Book, Book chapter, Journal article, Webpage, News, Video, Computer file etc. The accordingly the reference should be written keeping in view its peculiar principles. He gave examples for each of these types of references under Harvard, MLA and Chicago.

The complete presentation is given below.

Citations in Harvard, MLA and Chicago Styles

Prof. Dr. Khalid Mahmood

Faculty of Economics and Management Sciences

University of the Punjab

DETAILED PRESENTATION

Various style manuals

- APA – American Psychological Association
- MLA – Modern Language Association
- Chicago Style – Chicago Manual of Style
- Turabian Style – based on Chicago Style
- Harvard Referencing System
- ASA – American Sociological Association
- CBE - Council of Biology Editors

Resources for citation styles

- Software packages
 - EndNote, Mendeley, etc.
- Free citation generators
 - Scribbr, EasyBib, etc.
- Indexing databases
 - Google Scholar, etc.
- Library guides
 - Many guides searchable on Google

Type of document

- Book
- Book chapter
- Journal article
- Webpage
- News

- Video
- Computer file

Citing elements

- Author or authoring body
- Date of publication
- Title of the work (Article, chapter, etc.)
- Edition
- Publisher
- Place of publication
- Title of the source (Journal, edited book, etc.)
- Location information within the source (vol., issue no., pages, etc.)
- URL or DOI

Information from citing elements

- Author
 - Full name, initials, inverted form, etc.
- Publication date
 - Year, month, date
- Publisher
 - Full name, part, etc.

Use of abbreviations

- ed.
- pp.
- vol.
- no.

Format of citing elements

- Title case, sentence case, etc.
- Italicization

Order of citing elements

- Starting with

■ Author

■ Title

Use of punctuation marks

■ Period

■ Comma

■ Colon

■ Parenthesis

■ Quotation marks

Harvard Style – Examples

Mitchell (2017, p. 189) states...

or

(Mitchell, 2017, p. 189)

Mitchell, J. A. and Thomson, M., 2017. *A Guide to Citation*. London: London Publishing.

Mitchell, J. A., 2017. "How citation changed the research world." *The Mendeley*, 62(9), p70-81. doi:10.2196/tm.4069.

MLA Style – Examples

Mitchell states "... " (189)

or

(Mitchell 189)

Mitchell, James A. *A Guide to Citation*. 2nd ed, My London Publisher, 2017.

Mitchell, James A. "Citation: Why is it Important". *Mendeley Journal*, vol. 4, no. 6, Summer 1999, pp. 607-674.

Chicago Style – Examples

Notes style

1. Zadie Smith, *Swing Time* (New York: Penguin Press, 2016), 315–16.

2. Brian Grazer and Charles Fishman, *A Curious Mind: The Secret to a Bigger Life* (New York: Simon & Schuster, 2015), 12.

Shortened notes

3. Smith, *Swing Time*, 320.

4. Grazer and Fishman, *Curious Mind*, 37.

Author-date style

Grazer and Fishman (2015, 12) argued... or

(Grazer and Fishman 2015, 12)

Grazer, Brian, and Charles Fishman. *A Curious Mind: The Secret to a Bigger Life*. New York: Simon & Schuster, 2015.

Satterfield, Susan. "Livy and the *Pax Deum*." *Classical Philology* 111, no. 2 (April 2016): 165–76.

Question Papers/Test Development
Professor Dr. Muhammad Saeed
Chairman, Department of Educational research & Evaluation/
Director Quality Enhancement Cell
University of the Punjab, Lahore
February 18, 2021

SUMMARY

The sixth session of online training organized by QEC was on scientific way of developing a question paper / test items at higher education level. This session was conducted by Professor Dr. Muhammad Saeed. The session was started at 2:00PM with the recitation from the Holy Quran.

Dr. Saeed initially shared the significance of assessment and specifically test development. He said that test is the most popular tool of measuring students' achievement in all disciplines and at all educational levels i.e. elementary, secondary and higher education. It might be because the teacher can seek its quantitative results of his/her students' academic scores. He focused on the broad categories of test items i.e. objective and subjective. Objective type questions include matching, alternative response questions (True/False), fill in the blanks/completion items, re-arrangement, and multiple choice questions (MCQs). He shared that supply type questions include completion items, short answer / restricted response questions and extended response / long answer questions / essay type questions and selection type includes MCQs, true/false, matching and re-arrangement. In supply type questions, the examinee has to provide some response from his/her own either a word, a few sentences or detailed answer while in selection type questions, the examinee just tick/mark or arrange the already provided answers instead writing any information from his/her own.

Dr. Saeed shared the steps of developing a good test, specifically focusing the table of specification. TOS is a chart that reflects three main aspects to be included in a tests: a) list of contents, b) types/categories of tests items, and c) cognitive levels as per Bloom's taxonomy of Educational Objectives i.e. knowledge, comprehension, application, analysis, synthesis and evaluation. He shared recommended action verbs for each of these levels while stating questions for any test.

After sharing Bloom's taxonomy, he presented the basic principles/rules of constructing MCQs, short answer and essay type questions by taking the examples from the BS/master level course on Research Methods in Education. For MCQs, he shared a rule and then explained with an example by showing its poor example and better example. He said that at university level, each MCQ should have five or six plausible alternatives/options. For short answer questions, he said that these questions should be developed according to the marks allocated to each. Generally such questions carry two to four marks. These questions can assess students' comprehension, application and analysis abilities. The essay type or extended response questions must assess students' higher cognitive levels such as analysis, synthesis and evaluation. All these detail should be reflected in the table of specification.

The complete presentation is given below.

Developing Good Test Items

**Professor Dr. Muhammad Saeed
Chairman DERE-IER/
Director Quality Enhancement Cell
University of the Punjab
February 19, 2021**

DETAILED PRESENTATION

Basic Questions

1. Why to assess students?
2. Why to use test in classroom to assess students?
3. How to make good tests?

Types of Test Items

- Objective test items
 - Supply type (e.g. fill in the blank)
 - Selection type (e.g. MCQs, Matching exercise, True-False, Re-arrangement)
- Essay type test items / Supply type questions
 - Short answer / Restricted response
 - Extended response/ Essay type
- Performance Tasks
 - Individual activity/task
 - Group task (big project)

Steps in Test Development

1. Review curriculum/syllabus of the course
2. Review/analyze textbook materials
3. Decide about categories of test items
4. Decide about levels of questions in terms of Taxonomy of Educational Objectives
5. Decide number of items for each category
6. Develop test specification or TOS
7. Develop test items/questions

8. Review questions on your own /consult relevant colleague/s
9. Piloting test (to ensure reliability, if possible)

Taxonomies of Educational Objectives and Testing

- The history of students' assessment goes back to Benjamin S. Bloom's work (1956) on Cognitive Domain of learning. Gradually others (Krathowl, Simpson etc.) worked on affective and psychomotor domains of learning.
- Bloom divided cognitive domain into six levels-knowledge (lowest), understanding, application, analysis, synthesis, and evaluation (highest).
- **Knowledge:** define, identify, label, list, enlist, name, recall, reproduce, outline, select, memorize, state, grasp....
- **Comprehension:** convert, compare, match. infer, predict, explain, estimate, extend, differentiate...
- **Application:** change, demonstrate, apply, manipulate, modify, prepare, produce, relate, solve, calculate, use
- **Analysis:** analyze, break down, differentiate, illustrate, subdivide, infer, discriminate, distinguish, compare, ...
- **Synthesis:** concise, precise, revise, modify, reconstruct, summarize, categorize, combines, generate, organize....
- **Evaluation:** evaluate, appraise, conclude, contrast, justify, interpret, explain, critique, argue...

Writing Multiple-Choice Questions (1x6=6)

The stem should include as much of the item as possible. If, after writing the item, you notice that each of your alternatives begins with the same word or phrase, incorporate the word/phrase into the stem, deleting it from each of the alternatives.

Poor: Sample:

- A. is called accessible population
- B. is a part of target population
- C. is a representative of population
- D. is called as specimen of universe
- E. is called specimen of population

Better: Sample is referred to:

- A. Accessible population
- B. Part of population
- C. True representative of population
- D. Specimen of universe
- E. Specimen of population

- **The stem should be stated positively if possible; if negatives are included they should be highlighted in some way (in capital letters or bold type)**

Poor: For testing a hypothesis where two groups comparison is desired, it is better not to apply:

- A. Mean statistics
- B. Median statistics
- C. Mode statistics
- D. T-test
- E. Anova

Better: For testing a hypothesis where two groups comparison is desired, it is better NOT to apply:

- A. Mean
- B. Median
- C. Mode
- D. t-test
- E. ANOVA

- *List alternatives vertically beneath the stem, beginning a new line with each response in chronological order.*

Poor: The best reliability of a research tool is:

- A. .05 B. .95 C. .50 D. .25 E. .75

Better: The BEST reliability of a research tool is:

- A. .05
- B. .25
- C. .50

D. .75

E. .95

- *All alternatives should be approximately of the same length, at least the correct answer should not be too long/short*

Poor: Qualitative data is:

- A. usually analysed by a software
- B. usually analysed by using thematic analysis approach
- C. explanatory in nature
- D. logically arranged
- E. easier to analyse

Better: Qualitative data is better to analyse by:

- A. using a suitable software
- B. using thematic analysis approach
- C. applying explanatory data analysis rules
- D. developing different categories
- E. developing different codes

- **Be conscious about grammatical aspects**

Poor: Research is not a:

- A. Addition in existing knowledge
- B. Addition in skills
- C. Creation of knowledge
- D. Generation of knowledge
- E. Change in attitude

Better: Research is NOT a/an:

- A. Addition in existing knowledge
- B. Addition in skills
- C. Creation of knowledge
- D. Generation of knowledge
- E. Change in attitude

Rules for Short Answer Questions

- The marks of short answer questions shall be determined on the basis of length and difficulty level of each question.
- Questions of all cognitive abilities, especially problem solving and analytical reasoning should be asked.
- All questions or most of the questions should not be of the similar nature. For example, all questions should not start with what, which, why or how, rather there should be a mixture of questions. Use different verbs/words like differentiate, compare, describe, explain, identify, how..., why ..., what ..., etc. to assess different cognitive abilities of the students.
- The questions should be asked from the entire curriculum or syllabus.
- The questions should not be included which were already asked in the MCQs.
- If each question carries different marks, then these must be indicated at the end of each question.
- There should be no ambiguity in the statement of the questions. These should be free of all grammatical mistakes.
- Questions should not be quoted exactly from the textbook or any reference book.
- A Marking Key should be developed for each question.
- After developing all questions should be revised.
- These pose a specific problem for which student needs to recall suitable information, organize it, derive a defensible conclusion, and express it within the given limits of the questions (like 200 words, 10 minutes etc). e.g.
- *Write abstract of research study you have conducted in your BS (Hons.) program in 150-200 words and also give key words*

Examples in the course of Research Methods (3x6=18)

1. State a significant research problem in your discipline following basic principles of problem identification
2. Distinguish between probability and non-probability sampling? Give an example of each.
3. Write down four characteristics of survey research.
4. Under what situations correlation and regression are applied on research data?
5. Why it is said that the research instrument should be valid and reliable?
6. What are the sources of literature review? Explain briefly.

Essay Type Questions

- Essay questions are supply or constructed response type questions and can be the best way to measure the students' higher order thinking skills, such as applying, organizing, synthesizing, integrating, evaluating, or projecting while at the same time providing a measure of writing skills. Essay items can vary from very lengthy (usually one page to many).
- These questions allows students to
 - 1) Select any factual information that they think is relevant
 - 2) Organize information as it suits best according to their judgment
 - 3) Integrate, evaluate and present ideas as the feel appropriate.

Rules for Construction of Essay Type Questions

- Restrict the use of essay questions to those learning outcomes that cannot be measured by objective type items
- Have clearly in mind the mental processes i.e. comprehension, application, analysis etc., you want the student to use before starting to write the question.
- Indicate the approximate time and/or expected length of the answer.
- Start essay questions with such words or phrase as compare, contrast, give reason, predict what would happen if, critically analyze etc. Sometimes you may write a statement and put any higher order verb, such as discuss, give your arguments, comment etc. For example
- Avoid giving choice in essay questions. Students must be asked to attempt all questions in the test. Otherwise it decreases the validity and the basis for comparison among students.

Examples of extended response questions (2x8=16)

1. Briefly discuss the similarities and differences between research proposal and research report.

2. What are the types of an interview protocol? What ethical considerations a researcher should keep in mind while conducting a research interview and writing its response?

Table of Specification

Final Test: Research Methods in Education Level: Master

Marks: 40

Sr. No.	Contents	MCQs			SAQs			ETQs			Total	
		K	C	C	Ap	An	An	S	E	Q	M	
1.	Research	1		1	1					3	7	
2.	Types of Research	1			1					2	4	
3.	Sampling and Instrumentation	2		1						5	9	
		1		1								
4.	Application of Statistics in Research				1					3	4	
		1										
5.	Research Ethics							1		1	8	
6.	Research Proposal and Report						1			1	8	
7.	Total Questions	4	2	2	3	1	1	1		14	-	
	Marks	4	2	6	9	3	8	8		-	40	

Scientific Mechanism of Test Scoring
Dr. Muhammad Aamir Hashmi
Associate Professor & Chairman
Centre for Institutional Strengthening and Policy Analysis
University of the Punjab, Lahore
February 19, 2021

SUMMARY

The seventh session of online training organized by QEC was on scientific way of scoring or marking responses of tests at higher education level. This session was conducted by Dr. Muhammad Aamir Hashmi. The session was started at 2:00PM with the recitation from the Holy Quran by Professor Dr. Muhammad Saeed.

Prior to discussing test scoring mechanism, Dr. Hashmi explained the concepts of measurement, assessment, evaluation and test. He gave examples to distinct among these terms. He said that measurement is referred to numerical values, e.g. marks of a test. Assessment is value judgment for which different methods are used. Evaluation is decision making about a student's academic achievement and it shows cumulative picture of the student based on different assessments and measurements. Test is a tool to assess and measure the student's performance in terms of scores/marks.

Dr. Hashmi discussed with the participants the four types of assessment i.e. formative, summative, placement and diagnostic. He also briefly explained the types of test items i.e. objective and subjective types. Later he talked on rubric for scoring essay type questions responses. A systematic scoring guideline to evaluate students' performance (papers, speeches, problem solutions, portfolios, cases) through the use of a detailed description of performance levels. A rubric is a flexible tool that can be used to measure student learning related specifically to a department's objectives. Rubric is used to get consistent scores across all students. It allows students to be more aware of the expectations for performance and consequently improve their performance.

He shared six steps for developing a rubric followed by an example of rubric.

1. Clearly define the assignment
2. Consider what student learning outcomes will be assessed.
3. Determine the key criteria that you are interested in-- for example, for the senior seminar paper, what aspects of writing will be assessed?
4. Clearly define those key criteria
5. Establish clear and detailed descriptors for each performance level for each criteria
6. Try out the rubric on a few students with several raters to see if the rubric works and gets consistent scoring from multiple raters.

The complete presentation is given below.

Scientific Mechanism of Test Scoring

By

Dr. Muhammad Aamir Hashmi

PhD, Post Doc (USA & UK) Fellow HEA UK

Associate Professor, IER, University of the Punjab

Chairman Center for Institutional Development and Policy Analysis

DETAILED PRESENTATION

Measurement

- The procedure of assigning a numerical value to assessment task.
- Educational measurement is the science and practice of obtaining information about characteristics of students, such as their knowledge, skills, abilities, and interests.
- Measurement in education includes the development of instruments or protocols for obtaining information, procedures for analyzing and evaluating the quality of that information, and strategies for communicating the information to audiences, such as educators, policymakers, parents, and students.

Assessment

- The term assessment refers to the wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students
- Assessment is an integral part of instruction, as it determines whether or not the goals of education are being met. Assessment affects decisions about grades, placement, advancement, instructional needs, curriculum, and, in some cases, funding.
- Assessment inspire us to ask these hard questions: "Are we teaching what we think we are teaching?" "Are students learning what they are supposed to be learning?" "Is there a way to teach the subject better, thereby promoting better learning?"

Evaluation

- Evaluation is a continuous process and is concerned with than the formal academic achievement of pupils. It is interpreted in the development of the individual in terms of desirable behavioral change relation of his feeling, thinking, and actions.

Test

- Test is a set of questions. In the classroom situation, the word ‘test’ means to judge the knowledge understanding and intelligence of the students.
- A test can be held in short after completing the chapter a teacher can take a test of his students to know about their grasping power. Thus the test can be informal.

Types of Assessment

- Placement: Before start the learning process
- Formative: During Instructional Process
- Diagnostic: During Instructional Process to find the difficulties faced by students
- Summative: At the end of the instructional process

Types of Test Questions

Objective Type Questions

- Objective tests are questions whose answers are either correct or incorrect. They tend to be better at testing 'low order' thinking skills, such as memory, basic comprehension and perhaps application (of numerical procedures for example) and are often (though not necessarily always) best used for diagnostic assessment.
- However, this still affords a great variety of both textual and numerical question types including, but not limited to: calculations and mathematical derivations, mcqs, fill-in-the-blanks questions and short essay (short answer) questions.

Subjective/Essay Type Questions

- The essay tests are still commonly used tools of evaluation, despite the increasingly wider applicability of the short answer and objective type questions.
- There are certain outcomes of learning (e.g., organizing, summarizing, integrating ideas and expressing in one's own way) which cannot be satisfactorily measured through objective type tests. The importance of essay tests lies in the measurement of such instructional outcomes.

How to Evaluate Essay Type Questions?

Rubric

- A systematic scoring guideline to evaluate students' performance (papers, speeches, problem solutions, portfolios, cases) through the use of a detailed description of performance levels.
- Used to get consistent scores across all students.
- Allows students to be more aware of the expectations for performance and consequently improve their performance.
- A rubric is a flexible tool that can be used to measure student learning related specifically to a department's objectives.
- Because rubrics provide descriptions of each score level, it is easier for different faculty to use a rubric to grade consistently across students.

For assessment purposes, we usually want to develop a rubric that:

- allows us to directly evaluate performance on program level student learning outcomes.
- is general enough that it can be used for different assignments (e.g. papers may be collected from different courses/faculty).
- is understood and agreed upon by faculty who will be using the rubric.

Steps of developing a rubric

1. Clearly define the assignment.

- What is the student expected to produce?
- What are the common expectations across instructors?

2. Consider what student learning outcomes will be assessed.

- Often with a culminating project, students are expected to demonstrate several of the department/program outcomes.
- For example, for a senior seminar paper, outcomes related to writing and critical thinking may be assessed, as well and more discipline-specific outcomes.

3. Determine the key criteria that you are interested in-- for example, for the senior seminar paper, what aspects of writing will be assessed?

- Coherence
- Organization
- Mechanics

4. Clearly define those key criteria.

- What do you mean by organization?
- What does organized writing look like?

5. Establish clear and detailed descriptors for each performance level for each criteria

- Determine what the different levels of performance look like within each criteria
- Use sample papers of high, mid and low performers to help
- It is usually easiest to begin by describing the highest level of performance
- Using specific language for the descriptors of performance levels increases the chances that multiple faculty members will apply the rubric in a similar manner.

6. Try out the rubric on a few students with several raters to see if the rubric works and gets consistent scoring from multiple raters.

Rubric Example 1

	Below Expectation	Meets Expectation	Exceeds Expectation
Citations	The paper fails to cite sources using a consistent, formal, citation style	Most follow a consistent style, although some contain minor errors or incomplete information	All citations are complete, accurate, and consistently conform to a formal style

Rubric Example 2

	Sentence Structure	Spellings	Work flow	Relevancy	Overall presentation
Essay (20 Marks)	1 Inadequate	1 Major Mistakes	1 Inadequate	1 Inadequate	1 Inadequate
	2 Acceptable	2 Minor Mistake	2 Acceptable	2 Acceptable	2 Acceptable
	3 Good	3 Accurate	3 Good	3 Good	3 Good
	4 Excellent	4 Quite Accurate	4 Excellent	4 Excellent	4 Excellent

Test Items Analysis

Dr. Muhammad Abiodullah

PhD, PU, Post Doc (Liverpool, UK)

Associate Professor, Department of Educational Research & Evaluation, IER

University of the Punjab, Lahore.

February 26, 2021

Objectives of Session

1. Determine the use of the different ways of establishing an assessment tools' validity and reliability.
2. Familiarize on the different methods of establishing an assessment tools' validity and reliability.
3. Assess how good an assessment tool is by determining the index of validity, reliability, item and discrimination and item difficulty.

Levels of Measurement

- Nominal
- Ordinal
- Interval
- Ratio

Correlation Coefficient

- Relationship of two variables(X,Y)
- Direction
- Positive
- negative

Degree of Relationship

- 0.80-1.00 Quite Strong Relationship
- 0.6-0.79 Strong Relationship
- 0.40-0.59 Moderate Relationship
- 0.20-0.39 Weak Relationship
- 0.00-0.19 Very Weak Relationship

Test for Significance

- Nominal: Phi Coefficient
- Ordinal: Spearman rho
- Interval & Ratio : Pearson r
- Interval with nominal: Point biserial
- Decision rule:
- If $p \text{ value} < \alpha = .05$: significant relationship
- If $p \text{ value} > \alpha = .05$: no significant relationship

Variance

- R^2

- Square the correlation coefficient
- Interpretation: percentage of time that the variability in X account for the variability in Y.

Reliability

- Consistency of scores obtained by the same person when retested with the identical test or with an equivalent form of the test

Test-Retest Reliability

- Repeating the identical test on a second occasion
- Temporal stability
- When variables are stable ex: motor coordination, finger dexterity, aptitude, capacity to learn
- Correlate the scores from the first test and second test. The higher the correlation the more reliable

Alternate Form/Parallel Form

- Same person is tested with one form on the first occasion and with another equivalent form on the second
- Equivalence;
- Temporal stability and consistency of response
- Used for personality and mental ability tests
- Correlate scores on the first form and scores on the second form.

Split half

- Two scores are obtained for each person by dividing the test into equivalent halves
- Internal consistency;
- Homogeneity of items
- Used for personality and mental ability tests
- The test should have many items
- Correlate scores of the odd and even numbered items
- Convert the obtained correlation coefficient into a coefficient estimate using Spearman Brown

Kuder Richardson(KR20/KR 21)

- When computing for binary (e.g., true/false) items
- Consistency of responses to all items
- Used if there is a correct answer (right or wrong)
- Use KR20 or KR21 formula

Coefficient Alpha

- The reliability that would result if all values for each item were standardized (z transformed)
- Consistency of responses to all items
- Homogeneity of items
- Used for personality tests with multiple scored-items
- Use the Cronbach's alpha formula

Inter-item reliability

- Consistency of responses to all items
- Homogeneity of items
- Used for personality tests with multiple scored-items

- Each item is correlated with every item in the test

Scorer Reliability

- Having a sample of test papers independently scored by two examiners
- To decrease examiner or scorer variance
- Clinical instruments employed in intensive individual tests ex. projective tests
- The two scores from the two raters obtained are correlated with each other

Validity

- Degree to which the test actually measures what it purports to measure

Content Validity

- Systematic examination of the test content to determine whether it covers a representative sample of the behavior domain to be measured.
- More appropriate for achievement tests & teacher made tests
- Items are based on instructional objectives, course syllabi & textbooks
- Consultation with experts
- Making test-specifications

Criterion-Prediction Validity

- Prediction from the test to any criterion situation over time interval.
- Hiring job applicants, selecting students for admission to college, assigning military. personnel to occupational training programs
- Test scores are correlated with other criterion measures ex: mechanical aptitude and job performance as a machinist

Concurrent validity

- Tests are administered to a group on whom criterion data are already available
- Diagnosing for existing status ex. entrance exam scores of students for college with their average grade for their senior year.
- Correlate the test score with the other existing measure

Construct Validity

- The extent to which the test may be said to measure a theoretical construct or trait.
- Used for personality tests. Measures that are multidimensional
- Correlate a new test with a similar earlier test as measured approximately the same general behavior
- Factor analysis
- Comparison of the upper and lower group
- Point-biserial correlation (pass and fail with total test score)
- Correlate subtest with the entire test

Convergent Validity

- The test should correlate significantly from variables it is related to
- Commonly for personality measures
- Multitrait-multidimensional matrix

Divergent Validity

- The test should not correlate significantly from variables from which it should differ
- Commonly for personality measures
- Multitrait-multidimensional matrix

Item analysis

- The examination of individual items on a test, rather than the test as a whole, for its difficulty, appropriateness, relationship to the rest of the test, etc.
- Item analysis is useful in helping test designers determine which items to keep, modify, or discard on a given test; and how to finalize the score for a student
- If you improve the quality of the items on a test, you will improve the overall quality of the test – hence improving both reliability and validity

Item Difficulty Index

- The proportion of test takers who answer an item correctly
- For maximizing validity and reliability, the optimal item difficulty level is 0.50
- However, this does not mean every item should have a difficulty level of 0.50, simply that the average of all items should be 0.50
- .76 or higher Easy Item
- .25 to .75 Average Item
- .24 or lower Difficult Item

Optimal P Values For Items With Varying Numbers Of Choices

- The act of guessing on a test can cause some complications when a multiple choice test is used as the form of assessment; therefore, having different numbers of choices can influence the

Number of Choices	Optimal Mean p Value
2 Number of Choices (e.g. True/False)	0.85
3	0.77
4	0.74
5	0.69
Constructed response (essay)	0.50

Special Assessment Situations and Item Difficulty

- However, much of this is only true for norm referenced tests
- For criterion-referenced tests, such as mastery tests, item difficulty is evaluated differently
- On mastery tests, p values may be as high as 0.90, since student performance is a function of repeated attempts with feedback.
- Generally, students are expected to do much better than “chance” because they have been taught the material that is being assessed.

Item Discrimination

- How well an item can discriminate among test takers who differ on the construct being measured by the test

A calculation that determines the difference between those test takers who score well on a test and those who score poorly

- $D = \text{Discrimination index } T(\%) - B(\%) / (T+B) \times .5$

- $T(27)$ = proportion of examinees getting the item correct from the top group (e.g., top 27%)
- $B(27)$ = proportion of examinees getting the item correct in the bottom groups (e.g., bottom 27%)

Guidelines For Evaluating D Values

Discrimination Index	Remarks
0.40-Larger	Excellent
0.30-0.39	Good
0.11-0.29	Fair Poor
0.00-0.10	Fair Poor
Negative values	Miskeyed or other major flaw

Item-Total Correlation Coefficients

- The correlation of performance on the test items (scored as either a 0 or 1) with the total test score.
- This is usually calculated using a point-biserial correlation.
- A large item-total correlation indicates that an item is measuring the same construct as the overall test measures.

Item Analysis of Speed Tests

- Item analyses of speed tests are sometimes complicated by the fact that a majority of items are designed to be easy to be answered in a short amount of time
- However, items later on the test should be somewhat more difficult as it is intended that less students will get them correct
- There is no perfect calculation that takes these factors into consideration, however, they should be kept in mind when designing speed tests.

Distracter Analysis

- An incorrect alternative on a multiple choice item
- Because of time constraints, teachers designing tests usually only perform distracter analysis for items that need further scrutiny based on their p or D values
- A distracter analysis allows you to examine how many students in the top and bottom groups selected each option on a multiple choice item
- When examining each distracter, consider:
 - Did the distracter distract some students?
 - Did the distracter attract more examinees in the bottom group than the top group?
 - If “yes” for both questions, the option is a good distracter

Practical Strategies

- If you prefer to do item analysis by hand, you can separate students’ tests by grouping the top 10 (or 5 or 15) and the bottom 10 (or 5 or 15), and setting the middle group aside
- Determine how many students in the top group answered an item correctly, and how many in the bottom group did

- You can use this information to calculate the overall item difficulty index (p), and separate item difficulty indexes, which can then be used to calculate the discrimination index (D)
- Item difficulty can also be calculated for the entire group of test takers (not just the top and bottom group)

Using Item Analysis to Improve Items

- Consider the following questions based on your analyses:
- Is the item difficulty level appropriate for the testing application?
- Does the item discriminate adequately?
- Are the distractors performing adequately?
- What is your overall evaluation of the item?
- Use your answers to these question to decide which items to include, revise, or omit from a test

Item Analysis – Examples

- So, a test item may have an item difficulty of .70, and item discrimination of .40. This means that 70% of the test takers passed the item, and more students in the top group than the bottom group got the item correct.
- Another example – item difficulty of .40 and item discrimination of -.35. This means that only 50% of the test takers answered the item correctly, and more individuals in the bottom group (compared to the top group) answered in correctly. This might be a item that needs revision (may be ambiguously worded) or may have a miskeyed answer. Other explanations may also be possible.

Item Analysis of Performance Assessments

- For performance assessments that include one task, item analysis can typically not be done
- However, if a performance assessment includes multiple tasks that receive scores on a numeric scale (i.e. from a rubric), item analysis may be done
- You can compare how the top 10 students performed versus the bottom 10; if the average discrimination score is relatively high, it means that the item (or task) is discriminating between the two groups of students.

Qualitative Item Analysis

- Along with performing equations for item analysis, you can set a test aside for a few days following its creation, and then proof it for errors
- This “cool-off period” can help with the proofing process and identifying problematic test items
- Consider having a colleague review the test and give you feedback on it
- Ideally, you should incorporate both quantitative and qualitative item analysis into test development

Using Item Analysis to Improve Classroom Instruction

- When a large number of students miss an item, this indicates that the content or construct it is assessing probably needs to be reviewed in class

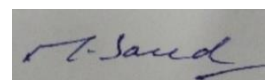
- Distracter analysis can also help the teacher identify which misconceptions are shared by the majority of her students and correct them
- Discarding bad items from the student score may make the score more reliable and valid. It might also serve to improve student motivation.

**Quality Enhancement Cell
University of the Punjab**

Schedule of Online Faculty Development (February 03 – 26, 2021)

Sr #	Titles of Training	Resource Persons	Date and Time
Curriculum / Course Development			
1	Curriculum Patterns / Designs	Prof. Dr. Rafaqat Ali Akbar Director IER	3 rd Feb, 2021 (Wednesday) 2:00 Pm to 3:30 PM
2	Transforming Curriculum on PU format	Prof. Dr. Muhammad Saeed Director QEC/ Chairman DERE - IER	4 th Feb, 2021 (Thursday) 2:00 Pm to 3:00 PM
3	Writing Program Mission and Objectives/Learning Outcome	Dr. Aroona Hashmi Assistant Professor, IER	4 th February, 2021 (Thursday) 3:00PM to 4:00PM
Citation			
5	APA Manual 6 th & 7 th Edition	Prof. Dr. Muhammad Saeed Director QEC / Chairman DERE - IER	11 th Feb, 2021 (Thursday) 2:00 Pm to 3:30 PM
6	Other Referencing Styles (Chicago/Harvard/MLA)	Prof. Dr. Khalid Mahmood Dean Faculty of Economics and Management Sciences	12 th Feb, 2021 (Thursday) 2:00 Pm to 3:30 PM
Question Papers/Test Development, Marking and Analysis			
5	Question Paper/ Test Development	Prof. Dr. Muhammad Saeed Director QEC/ Chairman DERE - IER	18 th Feb, 2021 (Thursday) 2:00 Pm to 3:30 PM
6	Scientific Mechanism of Test Scoring	Dr. Muhammad Amir Hashmi Associate Professor & Chairman, Centre for Institutional Development and Policy Analysis - IER	19 th Feb, 2021 (Friday) 2:00 Pm to 3:30 PM
7	Analyzing Tests	Dr. Muhammad Abiodullah Associate Professor, IER	26 th Feb, 2021 (Friday) 2:00 Pm to 3:30 PM

Dated: 26-01-2021



**Professor Dr. Muhammad Saeed
Director, Quality Enhancement Cell
University of the Punjab, Lahore.**

List of Participants/Trainees

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