



TRAINING NEEDS ANALYSIS (TNA) UNDERTAKEN AT SHAHID BURKI INSTITUTE OF PUBLIC POLICY AT NETSOL

by

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ACKNOWLEDGEMENT

The author wishes to take this opportunity to convey his appreciation and thanks to Mr. Shahid Najam Vice Chairman Shahid Javed Burki Institute of Public Policy (BIPP) for having taken the initiative of holding the first conference on TNA at BIPP on 23rd May 2023. The conference provided just the right impetus to generate the interest in TNA and to highlight the importance of TNA with respect to skill development.

The author would also like to thank Mr. Babar Yaqoob Vice Chairman (Operations) for his valuable suggestions and advice which has made it possible to develop a better methodology for implementation of TNA within BIPP.

Thanks, are also due to Dr. Ejaz Sandhu Director (Operations, Education & Learning) without whose cooperation, the TNA exercise would not have been possible.

Particular thanks are due to Ms. Aiman Adnan who has played a pivotal role in the expeditious completion of the TNA tasks and also inspired other team members to do the same. Her professional approach throughout is indeed laudable.

Special thanks are due to Ms. Tabinda Naz and Mr. Awais Khalid of the I.T and Finance Groups respectively for their keen interest in this project and for their worthy inputs and assistance in the overall development of the TNA Manual.

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Chapter 1:

An Overview of TNA

1.1 INTRODUCTION

- 1.1.1 Most people would accept that an organisation needs to realise the potential of its people and that it needs to ensure that its people are acquiring the knowledge and skills they need to make an effective contribution towards the organisation's goals. At the heart of human resource development therefore is **Training Needs Analysis**.
- 1.1.2 Employees are the greatest asset when it comes to meeting the overall goals and objectives set forth by the organization. In turn it is obligatory for the organization to recognize the importance of training and accordingly to arrange appropriate job-related training programs.
- 1.1.3 The effectiveness of training is heavily dependent upon the processes and procedures employed towards identifying the training needs. Training Needs Analysis is the first step on the path towards effective training.
- 1.1.4 Training is about helping people learn so that they can do their jobs to the required standards. However, often training fails to redress the real individual, occupational, departmental, or organisational needs. One of the major factors contributing to this situation is that training programmes are not based on mission critical needs. Training should be based on systematic assessment of current and future needs of organisations.

1.2 DEFINITION OF TNA

- 1.2.1 A training needs analysis (TNA) is used to gather & interpret data for identifying areas for personal & organizational performance improvement. A TNA helps to determine whether a 'gap' exists between actuals & optimal where:

Actuals	= what one knows or does &
Optimals	= what one should know or should do.

1.3 TYPES OF NEEDS ANALYSIS

- 1.3.1 It is important to identify training needs before trying to implement any training solution. The following type of needs analysis should be considered and, where possible, included to ensure you have a comprehensive overall view of the situation before deciding on and implementing a solution:
- Context analysis
 - User analysis
 - Work analysis
 - Content analysis
 - Training suitability
 - Cost-benefit analysis
- 1.3.2 Data from the above analysis would provide information about organizational requirements, existing capability, the learning gap and how best that gap can be closed.

Context Analysis

- 1.3.3 This refers to an analysis of the business needs or other reasons as to why the training is desired. In other words, we should analyze as to why a training program is seen as the recommended solution to a business/organizational problem.

User Analysis

- 1.3.4 This is an Analysis dealing with potential participants and their instructors. The important questions being answered by this analysis are:
- Who will receive the training and their level of existing knowledge on the subject.
 - What their learning style is in relation to what they need to know.
 - Who will conduct the training.

Work Analysis

- 1.3.5 Identifying the main duties & skill level required. This helps to ensure that the training which is developed will include relevant links to the content of the job.
- 1.3.6 In completing a work **training needs analysis**, one needs to gather data to answer questions such as the following:
1. In what jobs is training recommended?
 2. What are the key components of the work being performed?
 3. What skills and knowledge are required to perform the work?
 4. What are the different levels of skills and knowledge required?
 5. What are the measures of successful performance of the work?
 6. Is individual performance compared to the measures of successful performance?
 7. Are people performing at the benchmarked levels?

Content Analysis

- 1.3.7 An analysis of documents & procedures used on the job i.e what knowledge or information is used and required on this job. it is important that the content of the training does not conflict or contradict job requirements.
- 1.3.8 In completing a **content training needs analysis**, one needs to gather data to answer questions such as the following:
1. What on-the-job documentation is used to help the application of learning?
 2. Is learning material available in an electronic format so it can be converted into training materials?
 3. How is this content normally taught?
 4. What are the key building blocks of the training materials?
 5. What is the logical order of teaching the material?
 6. What has been the experience to date with existing methods of teaching the material?
 7. What can be done to ensure the subject is relevant to learners?

Training Suitability

1.3.9 Analysis of whether training is the desired solution. Training is one of several solutions to employment problems. However, it may not always be the best solution. It is important to determine if training will be effective in its usage.

Cost-Benefit Analysis

1.3.10 This is an analysis of the return on investment (ROI) of training. Effective training results in a return of value to the organization that is greater than the initial investment to produce or administer the training.

1.3.11 In completing a cost-benefit training needs analysis, one needs to gather data to answer questions such as the following:

- What steps will be involved in all phases of the training design and delivery?
- Who will be involved in all phases of the design and delivery?
- For how long will each resource be involved in all phases of the design and delivery?
- What are the direct costs of everyone involved in all phases of the design and delivery?
- What are the indirect costs such as travel and accommodation involved in the design and delivery?
- What have been the bottom-line benefits of similar programmes?
- What are the forecasted benefits of the training programme being developed?

1.3.12 To achieve effective training needs analysis we would need to approach training needs analysis that considers the organizational context of the training requirement, users of the training, the content of the documentation used in the training, the suitability of training to resolve the identified organization / performance problems / needs and, lastly, to conduct a cost-benefit analysis of the proposed training.

1.4 STEPS INVOLVED IN UNDERTAKING TNA

- Clarify the organizational goal
- Identify the target group
- Identify the skill sets required
- Determine the current skill levels
- Determine the skill levels required
- Carry out the skill-gap analysis: Determine the skill gap (using the organizational objectives, performance standards & staff appraisals as the basis).
- Develop a Training Strategy: Develop a training plan including dates, training strategy & resources required.
- Implementation of the training strategy.

1.5 IMPLEMENTATION OF A TRAINING NEEDS ANALYSIS PROGRAM

1.5.1 A skill audit is usually conducted to analyze as to what are the employees' current performance levels (CPL), as compared to the required performance levels (RPL). The difference between the RPL and the CPL would provide us the performance/competency gap which needs to be fulfilled through implementation of an appropriate training program.

1.5.2 The Required Performance Levels (RPLs) would be adjusted as an on-going process with the objective of expanding our knowledge/learning base.

1.6 Gap Analysis Report

- 1.6.1 Without knowing where you are it is hard to decide where to go. The objective of a Gap Analysis Report is to assess our current compliance to a given standard and to identify the areas that need attention so as to achieve compliance to specified standards.
- 1.6.2 To make training needs analysis easy, an organisation needs to establish exactly the level of performance it is looking for and then find an appropriate way of measuring the gap.
- 1.6.3 If an organisation has clearly defined learning objectives, it then becomes easy to match an appropriate development measure.

1.7 Find the Right Benchmark

- 1.7.1 An organisation should start by determining the 'gap in performance', which can be identified by establishing the standard or benchmark that it is looking to achieve. The organisation should then look at the difference between the benchmark and the actual performance achieved by its employees.

1.8 Methodology for Undertaking the Gap Analysis Program

- 1.8.1 As mentioned above, we need to set required performance/competency standards to start with, which can be used as a benchmark or yardstick against which we can gauge our existing skill/competence/performance levels. These standards can be wrt our organizational needs and objectives or they can be based on internationally recognized and accepted standards.
- 1.8.2 Having established the RPLs for our employees, Instructional Designers would need to prepare a trade specific syllabus to facilitate employees to hone-up and improve their skill levels and competencies so as to achieve the pre-determined benchmarks/standards. The Instructional Design process enables:
 - Systematic approach to creating training program that meets the needs of the trainees and the organization in an effective & efficient manner (thereby improving individual & org. Performance).
 - Instructional designers seek to select & develop the context, materials, activities & feedback that optimizes operator learning.
 - Good instructional designers must facilitate the learning process. Learning is facilitated when:
 - a. Activate prior experience: existing knowledge is activated as a foundation for new knowledge.
 - b. Demonstrate skills: new knowledge & skills are demonstrated to the learner.
 - c. Apply new skills: new knowledge is applied by the learner.

- d. Integrate those skills within the present set-up:
new knowledge is integrated into the learner's world.

1.8.3 Training to be imparted to employees as per course outline in the Syllabus:

- Instructional designers develop the training material according to certain strategy & methodology.
- As such it is important for the trainer to deliver the material the way it was intended for maximum benefit to participants & organization.
- Having well-trained & enthusiastic trainers who know their material and know how to deliver it ensures a successful implementation and encourages greater acceptance of a new system throughout the organization.

1.8.4 Assessment/Examination Process: An in-house examiner may be delegated the responsibility for conducting an examination of the skills and competency levels attained. Contents being examined may be those included in the training syllabus. Apart from Theoretical and Practical based assessment procedures, other techniques employed may include:

- Direct observation
- Questionnaires
- Consultation with persons in key positions, and/or with specific knowledge experts (sme's)
- Review of relevant literature
- Interviews
- Focus groups
- Tests
- Records and report studies
- Work samples.

Chapter 2: Implementation of TNA at BIPP

2.1 TNA Implementation specific to BIPP

The preceding presentation was an overview of the concepts, terminologies, procedures and practices normally adopted when undertaking a TNA program. Using these TNA concepts and procedures, there now follows a presentation on TNA implementation specific to BIPP.

2.2 Stepwise Implementation of TNA

Following steps (as already highlighted in para 1.4) were adopted when undertaking the TNA study at BIPP:

2.2.1 Clarify the organizational goals

As specified by the Senior Management of BIPP.

2.2.2. Identify the target group

We have two options here.

- (a) Undertake the TNA exercise at Individual level.
- (b) Undertake the TNA exercise across the board i.e. at team / company level.

2.2.3 TNA Targeted at Individuals rather than organizational level

For the purpose of this exercise, we have undertaken the TNA at individual level. This was done as the number of employees is small and the group category of these employees was easily defined. However, if need be, we can easily undertake such an exercise across the board at organizational level in quick time.

2.2.4. The target group in our case has been divided into four categories. These are:

- (a) Education and Learning Group:
 - Engagement / Networking with Universities
 - Scholarships
 - Signing of MOUs with different Educational Institutions.
- (b) The Think tank / Research Group.
- (c) The I.T. / Knowledge Management Group
- (d) The Finance Group.

2.2.5. Employees designated under the above categories are listed as follows:

(a) The Education and Learning Group:

1. Ms. Aiman Adnan
2. Ms. Tabinda Naz
3. Ms. Zahra Khan
4. Mr. Awais Khalid

(b) The Think Tank / Research Group

1. Ms. Aiman Adnan
2. Ms. Atr Un Nisa
3. Interns

(c) The I.T./ Knowledge Management Group:

1. Ms. Tabinda Naz
2. Mr. Areeb Khan
3. Mr. Awais Khalid

(d) The Finance Group:

1. Mr. Awais Khallid
2. Ms. Zahra Khan
3. Intern

2.3 Identify the skill sets required for each group:

Having identified the target group, the next step was to identify the skills associated with and required for each of the above groups. For this purpose, a skill audit was conducted for each of the groups. Consequent to this audit, the following Core and Soft Competencies were identified:

Serial No	Edu. & Learning Group Required Competencies	Think Tank / Research Group Required Competencies	I.T / Knowledge Management Group Required Competencies	Finance Group Required Competencies
	Core	Core	Core	Core
1	Engagement/Networking with Universities	Data Analysis and Interpretation	Search Engine Optimization	Taxation for NGO's
2	Processing Scholarship cases	Technology, Data Visualization and Infographics	Social Media Marketing · YouTube · Facebook · LinkedIn · Instagram · Twitter	Financial Analysis
3	Negotiating MOUs with Universities	Impact Evaluation and Monitoring	Ads Marketing	Financial Risk Management
4	Contractual Management	Economic Analysis and Impact Assessment	Website Development	QuickBooks
5	Project Management	Policy Analysis, Development and Advocacy	Graphic Designing Software	MS Excel
6		Project Management	Copywriting	Accounting Skills
7		Grant Writing, Proposal Development and Fundraising	AI tools related to IT	Analysing Financial Data
8		Predictive Modelling & Machine Learning	Machine Learning & Data Sciences	
9		Data Mining & Scraping	Cyber Security	
10		Project Management Skill	Project Management Skill	Project Management Skill
	Soft	Soft	Soft	Soft
	Comm. Skill – Written	Comm. Skill - Written	Comm. Skill - Written	Comm. Skill - Written
	Presentation Skills	Presentation Skills	Presentation Skills	Presentation Skills
	Time Management	Time Management	Time Management	Time Management
	Teamwork	Teamwork	Teamwork	Teamwork
	Leadership skills	Leadership skills	Leadership Skills	Leadership Skills
	Negotiation Skills	Negotiation Skills		

2.4 Determine the current skill levels of each of the groups identified:

2.4.1 Performance Level 1-5 Classifications





















Having identified the skill sets required for each of the groups under consideration, the next step is to carry out a skill audit to analyze and determine the current skill levels for each of the groups identified. There are a number of ways in which to evaluate the current skill levels, as already enlisted in point # 4 of Chapter 1 above. However, due to paucity of time, each of the group members was asked to carry out a self-evaluation of where they thought they stood in terms of the each of the skill sets identified. The performance levels for the purpose of this TNA exercise have been divided as follows:

- Level 1 None / Novice
- Level 2 Beginner / Basic
- Level 3 Intermediate level
- Level 4 Advanced / Proficient level
- Level 5 Expert

2.4.2 Assessment Sheets for Each Of The Four Groups

Assessment Sheets for each of the groups (designated under 2.1.5) has thus been prepared along with the corresponding benchmarks for each of the skill sets, as given on the next page.:

2.4.3 Current Skill Levels of The Education and Learning Group:

Trainee Name	Skills (in use)	Existing Skill Level	Benchmark	Training Strategy
Aiman Adnan Tabinda Naz Zahra Khan Awais Khalid	Core			
	1. Engagement / Networking with Universities			
	2. Processing Scholarship cases.			
	3. Negotiating MOUs with Universities			
	4. Contractual Management Skills.			
	5. Project Management Skills.			
	Soft			
	1. Comm. Skill - Written			
	2. Presentation Skills			
	3. Time Management			
	4. Leadership Skills			
	5. Negotiation Skills			

2.4.4 Current skill levels of the Think Tank / Research Group:

Trainee Name	Skills (in use)	Existing Skill Level	Benchmark	Training Strategy
Atr un Nisa Aiman Adnan	Core			
	1. Data Analysis and Interpretation			
	2. Technology, Data Visualization & Infographics			
	3. Impact Evaluation & Monitoring			
	4. Economic Analysis and Impact Assessment			
	5. Policy Analysis, Development and Advocacy			
	6. Grant Writing, Proposal Development and Fundraising			
Atr un Nisa Aiman Adnan	7. Predictive Modelling & Machine Learning			
Atr un Nisa Aiman Adnan	8. Data Mining & Scraping			
Atr un Nisa Aiman Adnan	9. Project Management			
Atr un Nisa Aiman Adnan	10. MS Excel			
Soft				
Atr un Nisa Aiman Adnan	1. Comm. Skill - Written			
Atr un Nisa Aiman Adnan	2. Presentation Skills			
Atr un Nisa Aiman Adnan	3. Time Management			
Atr un Nisa Aiman Adnan	4. Leadership Skills			

Atr un Nisa	5. Negotiation skills			
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2.4.5 Current skill levels of the I.T. / Knowledge Management Group:

Trainee	Skills (in use)	Existing Skill Level	Benchmark	Training Strategy
	Technical Skills (Core)			
Tabinda Naz, Areeb Khan	1. Search Engine Optimization			
Tabinda Naz, Areeb Khan	2. Social Media Marketing <ul style="list-style-type: none"> • YouTube • Facebook, • LinkedIn • Instagram • Twitter 			
Tabinda Naz, Areeb Khan	3. Ads Marketing			
Areeb Khan	4. Website Development <ul style="list-style-type: none"> • Front End Designing • Backend Development • Database Management 			
Tabinda Naz, Areeb Khan	5. Graphic Designing Software			
Tabinda Naz, Areeb Khan	6. Copywriting			
Tabinda Naz, Areeb Khan	7. AI tools related to IT			

Tabinda Naz, Areeb Khan	8. MS Excel			
Tabinda Naz, Areeb Khan	9. Machine Learning and Data Sciences			
Tabinda Naz, Areeb Khan	10. Cyber Security			
	Managerial Skills (Soft)			
Tabinda Naz, Areeb Khan	Professional Writing			
Tabinda Naz, Areeb Khan	Presentation Skills			
Tabinda Naz, Areeb Khan	Time Management			
Tabinda Naz, Areeb Khan	Leadership Skills			

2.4.6 Current skill levels of the Finance Group:

Trainee	Skills (in use)	Level	Benchmarks	Trainer
	Technical Skills (Core)			
Awais Khalid Zahra Khan	1. Taxation for NGO's			
Awais Khalid Zahra Khan	2. Financial Analysis			
Awais Khalid Zahra Khan	3. Financial Risk Management			
Zahra Khan	4. QuickBooks			
Zahra Khan	5. MS Excel			
Zahra Khan	6. Project Management			
Zahra Khan	7. Accounting Skills			
	(Soft) Managerial Skills			
Awais Khalid Zahra Khan	1. Comm. Skills (Professional writing)			
Awais Khalid Zahra Khan	2. Presentation Skills			
Awais Khalid Zahra Khan	3. Time Management			
Awais Khalid Zahra Khan	4. Leadership Skills			
Awais Khalid Zahra Khan	5. Analyzing Financial Statements			
Awais Khalid Zahra Khan	6. Team work			
Awais Khalid Zahra Khan	7. Statistical Analysis			

Chapter 3: Skill – Gap Analysis Report

3.1 Skill Gap Analysis Report for each of the following 4 Groups:

- The Education and Learning Group:
- The Think Tank / Research Group
- The I.T. / Knowledge Management Group
- The Finance Group:

3.2 Points allocated for each of the level of competencies achieved is tabulated as below:

LEVEL #	COMPETENCY LEVEL SCORE 1-5
• Level 1	None / Novice 1
• Level 2	Beginner / Basic 2
• Level 3	Intermediate level 3
• Level 4	Advanced / Proficient level 4
• Level 5	Expert 5

3.3 Skill- gap analysis methodology:

3.3.1 Maximum marks possible is the required Benchmark Score. For example, if the required competency Level (RPL) in a particular skill area is 'Advance', the corresponding Benchmark score would be 4.

3.3.2 Current Competency Level (CPL) would be one of the above five levels which an individual or organization has been assessed/evaluated to have attained. Now, if an individual has been, during a skill audit, found to have achieved an "advance" level (which is 4), and the benchmark itself requires him to be only at 'advance' level, then it means he has attained a score of $4-4=0$, which thereby means that he has achieved the benchmark level and that no further training is required for him. However, if the Benchmark requires him to be an expert in that skill area, then he would attain a score of $5-4=1$ which means that he is almost there but still has a shortfall of 1, which may require extra training efforts. And so on.

3.3.3 Accordingly, based on the above methodology, a skill gap analysis has been formulated for each of the four groups, as tabulated below:

3.3.4 Skill Deficiency values assessed for the Education and Learning Group:

Trainee Name	Skills (in use)	Existing Level	Benchmark	Skill Deficiency
Aiman Adnan Tabinda Naz Zahra Khan Awais Khalid	Core Competencies			
	1. Engagement / Networking with Universities			
	2. Processing Scholarship cases.			
	3. Negotiating MOUs with Universities			
	4. Contractual Management Skills.			
	5. Project Management Skills.			
	Soft Competencies			
	6. Comm. Skill - Written			
	7. Presentation Skills			
	8. Time Management			
	9. Leadership Skills			
	10. Negotiation Skills			

3.3.5 Skill Deficiency values assessed for the Think Tank / Research Group:

Trainee Name	Skills (in use)	Existing Level	Benchmark	Skill Deficiency
Atr un Nisa Aiman Adnan	Core Competencies			
	1. Data Analysis and Interpretation			
	2. Technology , Data Visualization and Infographics			
	3. Impact Evaluation and Monitoring			
	4. Economic Analysis and Impact Assessment			
	5. Policy Analysis, Development and Advocacy			
	6. Project Management			
	7. Grant Writing, Proposal Development and Fundraising			
Atr un Nisa Aiman Adnan	8. Predictive Modelling & Machine Learning			
Atr un Nisa Aiman Adnan	9. Data Mining & Scraping			
Atr un Nisa Aiman Adnan	10. Project Management			
Atr un Nisa Aiman Adnan	11. MS Excel			
Soft Competencies				
Atr un Nisa Aiman Adnan	1. Comm. Skill - Written			
Atr un Nisa Aiman Adnan	2. Presentation Skills			
Atr un Nisa Aiman Adnan	3. Presentation Skills			
Atr un Nisa Aiman Adnan	4. Time Management			
Atr un Nisa Aiman Adnan	5. Leadership skills			
Atr un Nisa Aiman Adnan	6. Negotiation Skills			

3.3.6 Skill Deficiency values assessed for the I.T/Knowledge Management Group

Trainee	Skills	Existing Level	Benchmark	Skill Deficiency
	Technical Skills (Core)			
Tabinda Naz, Areeb Khan	1. Search Engine Optimization			
Tabinda Naz, Areeb Khan	2. Social Media Marketing <ul style="list-style-type: none"> • YouTube • Facebook, • LinkedIn • Instagram • Twitter 			
Tabinda Naz, Areeb Khan	3. Ads Marketing			
Tabinda Naz, Areeb Khan	4. Web Development			
Tabinda Naz, Areeb Khan	5. Graphic Designing Software's			
Tabinda Naz, Areeb Khan	6. Copywriting			
Tabinda Naz, Areeb Khan	7. AI tools related to IT			
Tabinda Naz, Areeb Khan	8. MS Excel			
Tabinda Naz, Areeb Khan	9. Machine Learning and Data Sciences			
Tabinda Naz, Areeb Khan	10. Cyber Security			

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	Managerial Skills (Soft)			
Tabinda Naz, Areeb Khan	Professional Writing			
Tabinda Naz, Areeb Khan	Presentation Skills			
Tabinda Naz, Areeb Khan	Time Management			
Tabinda Naz, Areeb Khan	Leadership Skills			

3.3.7 Skill Deficiency values assessed for the Finance Group:

Trainee	Skills	Existing Level	Benchmarks	Skill Deviancy
	Technical Skills (Core)			
Awais Khalid	1. Taxation for NGO's			
Awais Khalid	2. Financial Analysis			
Awais Khalid	3. Financial Risk Management			
Zahra Khan	4. QuickBooks			
Zahra Khan	5. MS Excel			
Zahra Khan	6. Project Management			
Zahra Khan	7. Accounting Skills			
	Managerial Skills (Soft)			
Awais Khalid Zahra Khan	1. Comm. Skill – Professional writing			
Awais Khalid Zahra Khan	2. Presentation Skills			
Awais Khalid Zahra Khan	3. Time Management			
Zahra Khan	4. Leadership Skills			
Zahra Khan	5. Analysing Financial Statements			
Awais Khalid Zehra Khan	7. Team Work			
Zehra Khan	8. Statistical Analysis			

Chapter 4: Graphical Representation Of Skill Gap Data Tabulated In Paras 3.2.4 To 3.2.6

4.1 The skill gap values signify the level of Skill Deficiency

4.1.1 What do Skill Gap Values Actually Mean

The skill-gap values (0-4) indicated in the “Skill Deficiency” column denotes the following:

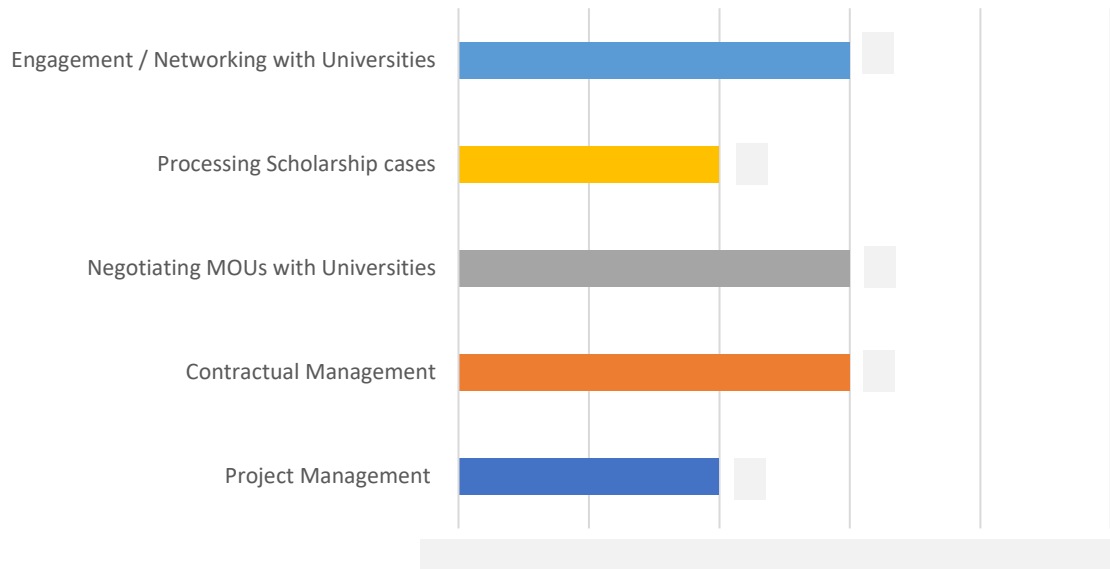
0	0 = No training is needed.
1	1 = Some training is needed.
2	2 = Moderate training is required.
3	3 = Urgent training is required.
4	4 = Immediate action is required.

4.1.2 Graphical Representation of the Level of Skill Deficiency for the Educational & Learning Group

In the above context, the following graphs represent the level of skill deficiency which exists for each of the skills identified.

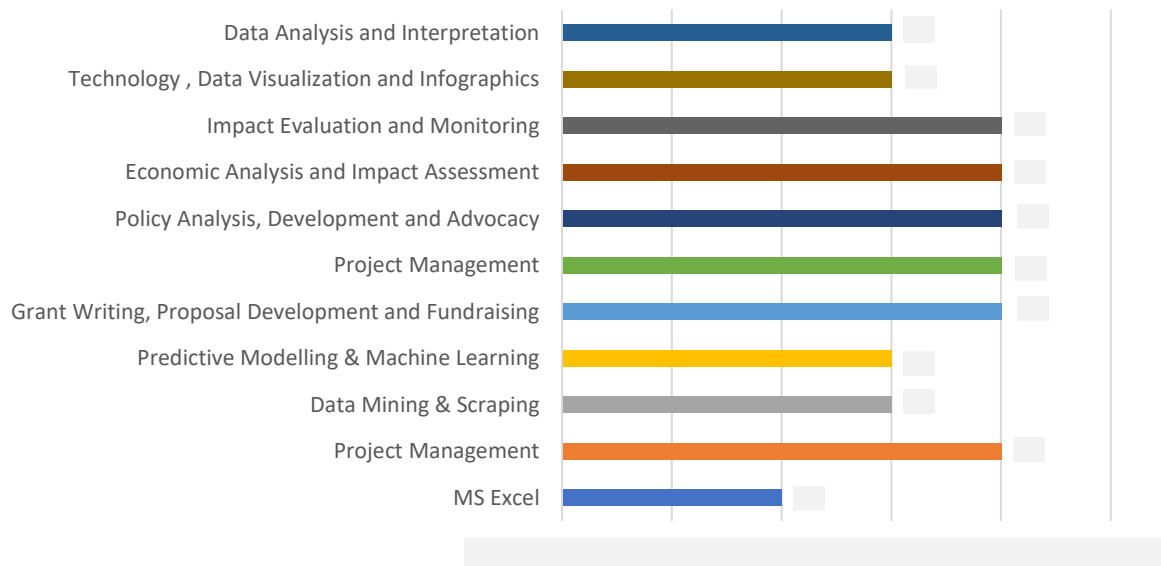
4.1.3 Education & Learning Group

4.1.3 Education & Learning Group



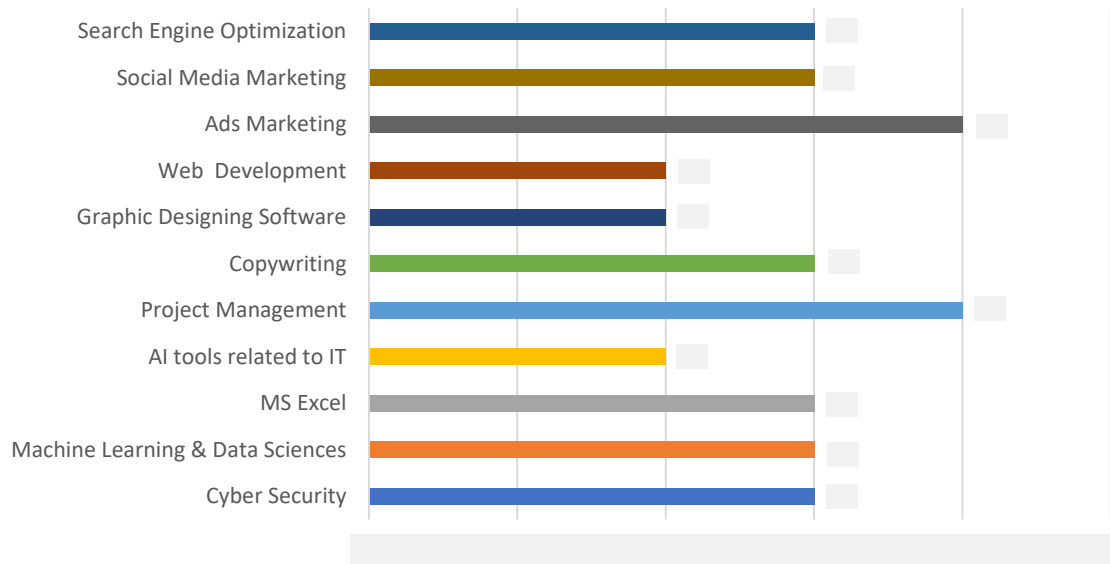
4.1.4 Research / Think Tank Group

4.1.4 Research / Think Tank Group



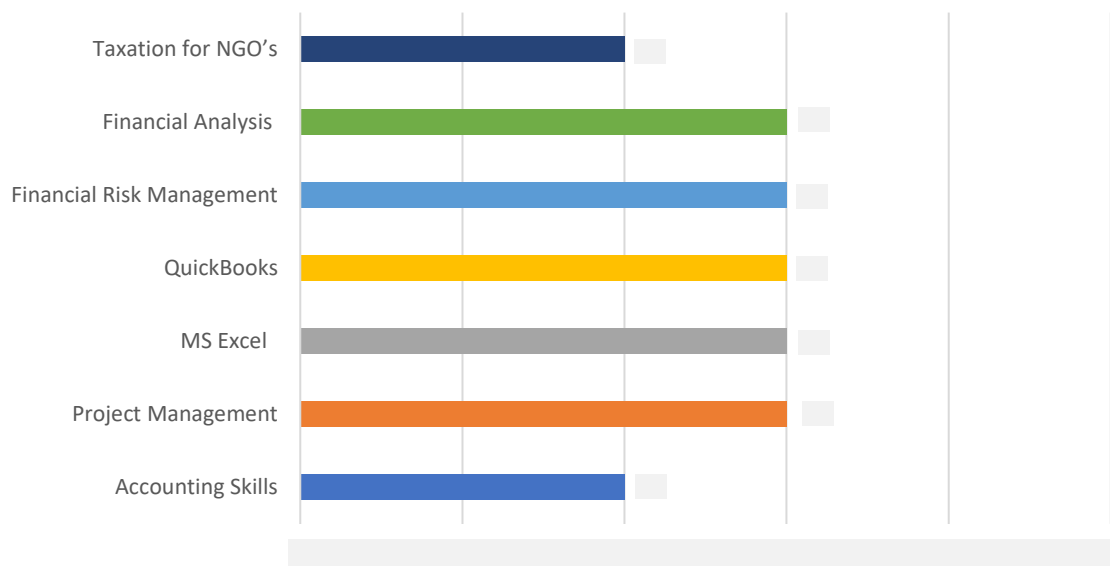
4.1.5 IT/Knowledge Management Group

4.1.5 IT/Knowledge Management Group



4.1.6 Finance Group

4.1.6 Finance Group



Chapter 5: Training Strategy for BIPP Employees

5.1 Degree of Skill Deficiencies Identified Now Need Special Attention

Consequent to having completed the Skill-Gap analysis in Chapter 4 above, we now have a good idea about the degree of skill deficiencies amongst BIPP employees which need particular attention.

5.2 What do the Skill Deficiencies Values Represent

As already indicated in section 3.2.7 above, the training strategy adopted in this study is based on the value assessed for each skill indicated in the “Skill Deficiency” column which denotes the following:






- 0 = No training is needed.
- 1 = Some training is needed.
- 2 = Moderate training is required.
- 3 = Urgent training is required.
- 4 = Immediate action is required.






5.3 Skill Deficiencies Values Along with the Corresponding Recommendations on how to Overcome these Deficiencies

Based on the above criteria, the skill deficiency values for each of the skills currently in use by the four groups (under study) is listed below, along with the corresponding recommendations on how to overcome these deficiencies.






5.4 TRAINING STRATEGY TO COPE WITH SKILL GAPS IDENTIFIED FOR EACH OF THE FOUR GROUPS:

5.4.1 Training Strategy proposed for the Education and Learning Group:

	Skills (in use)	Skill Deficiency	Training Strategy
	Core Competencies		
	1. Engagement / Networking with Universities		Urgent training is needed. Maximum exposure during interaction with universities would contribute towards the learning process.
	2. Processing Scholarship cases.		Moderate level of training is needed through self-study and awareness about different scholarship programs through Internet search and through practical handling of scholarship cases.
	3. Negotiating MOUs with Universities		Urgent training is needed through direct exposure to cases requiring of scrutiny and subsequent signing of MOUs with outside agencies
	4. Contractual Management Skills.		<p>Urgent training is needed through direct exposure to cases requiring finalization of contracts with outside age.</p> <p>Courses:</p> <ul style="list-style-type: none"> Contract Formation Guide: From Tendering to Contract Award: https://www.udemy.com/course/contract-formation-guide-from-tendering-to-contract-award/ Contract Management: Managing Contractual Risks https://www.udemy.com/course/contract-management-managing-contractual-risks/ Complete Contract Management Bootcamp: Zero to Hero https://www.udemy.com/course/complete-contract-management-bootcamp-zero-to-champion/
	5. Project Management Skills.		<p>Moderate training is needed through inhouse training programs or through attending Certification courses such as those offered by:</p> <ul style="list-style-type: none"> Pakistan Institute of Management. Project Management Institute.

			<p>Certification courses leading to the award of PMP (Project Management Professional) are offered by the PMI and are worth considering.</p> <p>Proposed website for Project Management Certification courses includes:</p> <p>www.pmi.org</p>
	Soft Competencies		
	1. Comm. Skill – Written		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	2. Presentation Skills		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	3. Time Management		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	4. Leadership Skills		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	5. Negotiation Skills		Immediate Training is needed. In-house prog or outsourcing like PIM and PMI is proposed

5.4.2 Training Strategy proposed for the Think Tank / Research Group:



Trainee Name	Skills (in use)	Skill Deficiency	Training Strategy
Atr un Nisa	Core Competencies		
Aiman Adnan	1. Data Analysis and Interpretation		Urgent training is needed. Many online Certified training programs are available with average cost between Rs 1.5 to 2 Lacs
	2. Technology , Data Visualization and Infographics		Urgent Training is needed. Online courses available such as from Coursera which enhance skills in: Implementing data visualization techniques and plots using Python Libraries. Create different types of charts & plots such as line, area, histograms, create advanced visualization such as waffle charts and word clouds. Suggested link: www.coursera.org
	3. Impact Evaluation and Monitoring		Immediate training need exists. Impact evaluation and monitoring training programs provide individuals with the skills to assess and track the effectiveness of social programs. Participants learn evaluation methodologies, data collection, analysis, and interpretation. M.s ITC offers on line Certification program which provides a practical approach to design, conduct & interpret impact evaluations. Suggested site: www.itcilo.org
	4. Economic Analysis and Impact Assessment		Immediate training need exists. Online programs for economic analysis and impact assessment provide individuals with the skills and knowledge to analyze the economic implications of policies, projects, and interventions. These programs cover economic analysis techniques, data analysis, impact assessment methodologies, policy analysis and evaluation, sector-specific analysis, software tools, and real-world applications. They aim to equip participants with practical skills to conduct economic analysis and assess the impact of various interventions in different sectors. Suggested website: www.edx.org
	5. Policy Analysis, Development and Advocacy		Immediate training need exists. Policy advocacy is the process of negotiating and mediating a dialogue through which influential networks, opinion leaders, and

			<p>ultimately, decisionmakers take ownership of your ideas, evidence, and proposals, and subsequently act upon it.</p> <p>The best suggested website to further enhance related skills for bringing upon lasting changes in policy matters is: www.mdf.nl</p> <p>A good local site for policy making related training is: ocw.vu.edu.pk</p> <p>Course learning outcome includes:</p> <ul style="list-style-type: none"> • Understanding basics of public policy, theories, and their application in Pakistan. • Design solutions to policy problems. • Understanding public policy implementation and design policy reform proposals. • Understand and implement policy advocacy project.
	6. Project Management		<p>Immediate training need exists. Numerous certified courses available locally and online. These include:</p> <ul style="list-style-type: none"> • Project Management Institute, Mega Towers, Gulberg Lahore Contact: 03104535721 • Pakistan Institute of Management • In-house Project Management courses can also be organized. <p>Certification courses leading to the award of PMP (Project Management Professional) are offered by the PMI and are worth considering.</p> <p>Proposed website for Project Management Certification courses includes: www.pmi.org</p>
	7. Grant Writing, Proposal Development and Fundraising		<p>Immediate training need exists. Best Grant Writing and Fund raising and Development online courses are available at: www.coursera.org</p>
	8. Predictive Modelling and Machine Learning		<p>Urgent Training is needed. Already discussed comprehensively under para 9 of Section 5.4.3 below.</p>

	9. Data Mining & Scraping		<p>Urgent training is needed.</p> <p>Data mining is a method in which patterns are discovered in datasets involving various machine learning technologies. The data is collected in various formats in this method, and used for different purposes. It aims at extracting knowledge from desired websites and turning it into comprehensible frameworks for further use.</p> <p>In short, we can say that “Data Mining is the process of advance analysis of extensive data sets.”</p> <p>Web scraping is the method where data is collected from desired web pages and is also known as data collection and data extraction.</p> <p>Difference between Data Mining & Web Scraping:</p> <p>Data mining is used to extract and transform information from existing websites into a readable and scalable format.</p> <p>However, web scraping is used to collect web content and data from PDF files, HTML documents, and interactive pages. These methodologies can be used to market, advertise, and promote our brands, and social media is the best place to advertise your products and services.</p>
	10. Project Management		
	11. MS Excel		
	Soft Competencies		
	1. Comm. Skill - Written		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	2. Presentation Skills		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	3. Time Management		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	4. Leadership skills		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed

	5. Negotiations Skills		Immediate Training is needed. In-house prog or outsourcing like PIM and PMI is proposed





5.4.3 Training Strategy proposed for the I.T. / Knowledge Management Group:

Trainee	Skills In Use	Skill Deficiency	Training Sources
	Core Competencies		
Tabinda Naz, Areeb Khan	1. Search Engine Optimization		<p>Urgent training is needed.</p> <p>Having a strong SEO strategy is crucial for small business owners. SEO courses are designed to teach individuals or businesses how to improve their website's visibility in search engine results pages (SERPs). Majority of users rely heavily on search engines to find information about other websites, products, and services. If your website doesn't appear on those coveted top positions, you're missing out on valuable opportunities to connect with your target audience. As such, the importance of honing one's SEO skills cannot be underestimated.</p> <p>Proposed Training Institute: SEOPSA Level 1 SEO Certification Course: Course Outcome: Besides being a Certification program, the course will equip the employee with the relevant knowledge, skills and tools to optimize & maintain a successful SEO campaign. Website: www.bluemagnet.co.za Cost: R 1800 (South Africa)</p> <p>Local Training Option: BITS (Based in Lahore). Fee: Rs. 16000 Duration: 2 Months Options: Both in-house and Campus based programs are available. Proposed Website: www.burraqitsolutions.com</p>
	2. Social Media Marketing <ul style="list-style-type: none"> • YouTube • Facebook • LinkedIn • Instagram • Twitter 		<p>Urgent training is needed.</p> <p>Very important tool especially in today's world where social media has a major impact on business performance.</p> <p>Social Media platforms like Facebook, Twitter, Instagram, YouTube and TikTok gather users' information. Based on this information, and through machine learning (discussed in Point 9 below of this section) it predicts your interests and desires, & recommends products, services. or articles that are of interest to you.</p> <p>Training Institute: Coursera</p>





			Duration: 1-3 month Cost : \$150
	3. Ads Marketing		Immediate training is needed. Training Institute: Coursera Duration: 1-3 months Cost : \$150
	4. Web Development		Moderate training is needed. The skill 'Website Development' is closely linked to the skill "Search Engine Optimization" already discussed above. Local Training Option: BITS (Based in Lahore). Fee: Rs. 16000 Duration: 2 Months Options: Both in-house and Campus based programs are available. Proposed Website: www.burraqitsolutions.com Training Institute: Coursera Duration: 1-3 months Cost : \$150
	5. Graphic Designing Software's		Moderate training is needed. Training Institute: Coursera Duration: 1-3 months Cost : \$150
	6. Copywriting		Urgent training is needed. Copywriting is all about writing promotional material. Their main goal is to write something that will make the reader engage with the content and lead them one step closer to taking action. Great writers with outstanding copywriting skills will persuade readers to click, provide their information or purchase. The goal is always the same: get a reader to take action and convert them into a customer. Training Institute: Coursera Suggested reading: "Skills you need": https://www.skillsyouneed.com/rhubarb/essential-copywriting-skills.html#:~:text=While%20some%20think%20that%20being,the%20work%20of%20
	7. Project Management		

	8. AI tools related to IT		<p>Moderate training is needed. Training Institute: Coursera Duration: 1-3 months Cost : \$150</p>
	9. MS Excel		<p>Urgent training is needed. Training Institute: Coursera Duration: 1-3 months Cost : \$150</p>
	10. Machine Learning and Data Science		<p>Urgent training is needed. Data Science is a field that studies data and how to extract meaning from it, whereas Machine Learning is building methods that utilize data to improve or predict performance. Machine Learning is a branch of AI that used algorithms to extract data and then predict future trends.</p> <p>Data Sci is a diverse field encompassing a wide range of skills. It is defined as the extraction and interpretation of information from data through the use of statistical and computational methods.</p> <p>Skills needed in Data Science:</p> <p>To build a career in Data Sci. you would want to gain programming and data analysis skills. These would include:</p> <ul style="list-style-type: none"> • Strong knowledge of programming languages such as Python, R, SAS etc. • Familiarity working with large amounts of structured and unstructured data. • Comfortable with processing and analyzing data for business needs. • Understanding of math, stats, and probability. • Data visualization skills • Knowledge of machine learning algorithms and models. • Good communication and team work skills. <p>Skills needed in Data Science:</p> <p>To become a successful Machine Learning engineer, you would need to be well-versed in the following skills:</p>







			<ul style="list-style-type: none"> • Expertise in Computer Science, including data structures, algorithms and architecture. • Strong understanding of Statistics and Probability. • Knowledge of software engineering and systems design. • Programming knowledge, such as Python, R, etc. • Ability to conduct data modelling and analysis. <p>Examples of Machine Learning Applications in real life:</p> <p>Social Media platforms like Facebook, Twitter, Instagram, YouTube and TikTok gather users' information. Based on previous information, it predicts your interests and desires, & recommends products, services. or articles that are of interest to you.</p> <p>Training Institute: Coursera Duration: 1-3 months Cost : \$150</p> <p>IBM Data Science Professional Certification for Beginners. Duration: 5 Months</p>
	11. Cyber Security		<p>Urgent training is needed.</p> <p>In this age of massive reliance on digitization, it's becoming increasingly important for organizations to realize the negative impact of breaches of cybersecurity. For this, it's important for employees to increase awareness about this real threat and to adopt measures to mitigate its impact. Training programs do just that by:</p> <ul style="list-style-type: none"> • Develop skills in developing a cloud security strategy. • Reduce risk from increasingly sophisticated, modern-day threats. • Secure users and devices with easy to deploy DNS-layer protection, <p>Training Institute: Coursera</p> <p>Ebook Recommended: How Modern Security Teams Fight Today's Cyber Threat</p>

	Soft Competencies		
	Professional Writing		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	Presentation Skills		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	Time Management		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
	Leadership Skills		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed

5.4.3 Training Strategy proposed for the Finance Group:

Trainee	Skills	Skill Deficiency	Training Strategy
	Core Competencies		
Awais Khalid	1. Taxation for NGO's		Moderate training needed. Training Institute: Pakistan Centre of Philanthropy Duration: 2 days Cost : 40,000/- Venue: Lahore
Awais Khalid	2. Financial Analysis		Urgent Training Needed. Training Institute: Pakistan Institute of Management Duration: 3 days Cost : 33,000/- Venue: Lahore
Awais Khalid	3. Financial Risk Management		Urgent Training Needed. Training Institute: Pakistan Institute of Management Duration: 2 days Cost : 22,000/- Venue: Lahore
Zahra Khan	4. QuickBooks		Urgent Training Needed.

			<p>What is Quickbooks. It is a simple user-friendly accounting software that tracks your business income & expenditure, and organizes your financial information for you. Advantages include:</p> <ul style="list-style-type: none"> • Eliminates manual data entry thus reducing chances of errors. • Simplifies small business accounting • Automates tasks such as Invoicing, Time tracking, Sales Tax etc. • It runs on MS Windows • Data can be stored safely and securely through cloud storage. • Track your sales and expenses and sort receipts in one place. • <p>Online Course site suggested: wwwCoursera.org</p>
Zahra Khan	5. MS Excel		
	6. Project Management		<p>Immediate training need exists. Numerous certified courses available locally and online. These include:</p> <ul style="list-style-type: none"> • Project Management Institute, Mega Towers, Gulberg Lahore Contact: 03104535721 • Pakistan Institute of Management • In-house Project Management courses can also be organized.
Zahra Khan	7. Accounting Skills		<p>Moderate training is needed. Proficiency in reading and understanding financial documents Balance sheet Income statement Cash flow statement</p>
	Managerial Skills (Soft)		
Awais Khalid	1. Comm. Skill Professional writing		<p>Moderate Training is needed. In-house prog or outsourcing like PIM and PMI is proposed</p>

Awais Khalid	2. Presentation Skills		Moderate Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
Awais Khalid	3. Time Management		Urgent Training is needed. In-house prog or outsourcing like PIM and PMI is proposed
Zahra Khan	4. Leadership Skills		Urgent Training is needed. In-house program or outsourcing from PIM and PMI is proposed
Zahra Khan	5. Analysing Financial Statements		Ability to read financial statements, prepare balance sheets, income and revenue statements, cash flows their analysis, budgeting, taxes remain the first basic skills. Online Course Link: https://www.udemy.com/course/financial-statement-analysis-course/
Awais Khalid Zehra Khan	6. Team Work		Urgent Training is needed.
Zehra Khan	7. Statistical Analysis		Statistical analysis involves investigating trends, patterns and relationships using quantitative data. It is an important research tool used by various governmental, marketing and other agencies. To draw valid conclusions, statistical analysis requires careful planning right from the very start of the research process. You need to specify your hypothesizes and make decisions about your research design, sample size, and sampling procedure. Course recommended: www.mathtutordvd.com

Chapter 6: **Conclusions and Recommendations**

6.1 The importance of carrying out a Training Needs Analysis (TNA) program within an organization cannot be over emphasized. The TNA exercise highlights the most used skills and competencies (within a set up) and identifies, through skill audit, the gaps which need to be filled in order for employees to reach the required benchmarks.

6.2 Against this backdrop, the senior management at BIPP, during an inhouse conference of it's employees, emphasized the need for conducting TNA within their set up. This interaction by the top management with their staff provided the just the right impetus and motivation to employees to participate fully and enthusiastically in this TNA exercise.

6.3 To begin with, the participants in this TNA exercise were divided into four groups. These were; the Education and Learning group, the Thinktank / Research Group, the IT/ Knowledge Management Group and the Finance Group. Having identified the skill sets normally utilized by each group, a benchmark was established for each of these skill sets. A numerical value was assigned to the existing skill levels and their corresponding benchmarks. By deducting the value of the Current Competency Level (CCL) from the Required Competency Level, we were able to obtain the Skill Deficiency Value (SDV) for each of the Skills in use.

6.4 Having established the Deficiencies which existed for each of the competencies (both Core and Soft), the various skill sets contained there-in were closely examined. Accordingly, and after an extensive literature research for each of the skill sets, a training strategy was developed and proposed for each of the skill sets under investigation. This training strategy identifies the extent/degree of training which needs to be imparted. It proposes the mode of training, whether to be conducted externally or in house, and recommends websites for online training wherever necessary. Furthermore, the manual provides the readers an opportunity to read about and further explore avenues, by discussing aspects related to modern skills such as Data Sense, Machine Learning and AI, which have acquired immense importance in this age of digital revolution and innovation.

6.5 The time allocated for this exercise was somewhat short. For future, it is proposed that a wider spectrum of participants may be included along with added skill sets, both core and soft competencies and that a stricter skill set audit regime may be adopted to provide a more realistic and accurate level of existing competencies level. Also, existing manpower resource and expertise may be employed to provide in-house training in the selected core and soft competencies, where possible.

6.6 Also, it is recommended that BIPP can facilitate other organizations to undertake TNA within their own set ups.

6.7 Lastly, any comments and suggestions on any aspect of this manual are most welcome and can be emailed to the author directly at: rehan30@hotmail.com