REPORT OF SAP's WORKSHOP

(Phase IV)

TOT

Developing Science Teachers as Inquiry Promoters in the Context of STSE

Venue: ***Govt. Boys Comprehensive School, Bosan Road, Multan***

Dated on: 15th May, 2010

Timing: (09:00am – 06:00pm)

SAP

Science Association of Pakistan

SAP's Introduction

The Science Association of Pakistan (SAP) was formed on the 14th October 1998 as a voluntary non-governmental, non-political and non-profitable organization by science teachers from all over Pakistan at the Aga Khan University – Institute for Educational Development (IED).

Vision of SAP

"To improve the quality of Science Education in Pakistan"

Workshop's AIM

SAP offered an innovative and contextually relevant program '***Developing Science Teachers as Inquiry Promoters in the Context of STSE***' for the science teachers of Multan with the collaboration of **Idara-e-Taleem-o-Aagahi** (**ITA**). This program's ultimate aim is to enhance student learning outcome in a fundamental content of science through teachers professional development in planning and implementing inquiry based lesson in the context of STSE.

Outcomes

Outcomes of the training are as:

- Recognize the key aspects of the New National Curriculum 2006.
- Recognize the processes of learning and children learning science.
- Explain the key aspects of concept of scientific literacy and Science Technology Society & Environment (STSE) through an analysis of the NCE 2006.
- Experience some aspects of NOS relevant to school science;
- Engage in the development of some assessment tool;
- Experience the learning of matter in the context of STSE and Plan, apply, reflect and modify lesson plans through a collaborative approach.

Methodology

The participants were being engaged in learning through

- ✓ interactive and learner centered approaches
- ✓ inquiry
- ✓ demonstrations
- ✓ role plays
- ✓ active reading
- ✓ writing
- ✓ ICT
- ✓ hands-on approaches
- ✓ minds-on approaches

Resource Persons

- Miss Surayya Yousufi **(**Chairperson of SAP**)**
- Miss Farah **(**Executive member and Coordinator of SAP/Multan**)**
- Miss Irum Zehra **(**General Sectary**)**

ITA-IPL Representatives

- Mr. Rana Mubashar Latif (DM Sheikhupura)
- Mr. Adnan Khalil (Trainer & Material Developer)

List of Participants

Sr. #	**Name**	**Name of Schools**
1.	Adnan Khalil	Idara-e-Taleem-o-Aagahi (ITA)
2.	Muhammad Razman	G. H. S. Murdan Pur Multan
3.	Muhammad Sajid Hameed	G. Lab. Model School Multan
4.	Rana Mubashar Latif Khan	Idara-e-Taleem-o-Aagahi (ITA)
5.	Mazhar Mumtaz	Govt. Islamia High School, Doulat Gate Multan

SESSION PROCEEDINGS

- The workshop started with the name of Allah Almighty.

- The second activity was done by Ms. Farah Huma & that was a brief introduction of each participant which includes his name, Education Experience etc.

- The Next activity was "What you think you will learn from this workshop?".

Answers by participants

Adnan Khalil	Muhammad Razman	Muhammad Sajid Hameed	Rana Mubashar Latif Khan	Mazhar Mumtaz
Facilitation Skills	• Creativity • To be like a grate teacher who believes on Modeling or demonstration	How to teach in this tense situation of education in Pakistan	• Developing No cost Low cost materials • Activity Based Learning	High thinking for creating activities

- The Next activity was "What kind of problems do you usually face during training session?".

Answers by participants

Adnan Khalil	Muhammad Razman	Muhammad Sajid Hameed	Rana Mubashar Latif Khan	Mazhar Mumtaz
• Lack of interest • Hesitation • Old education system • Behavior	• Lack of interest • Behavior	• Hesitation • Behavior	Activity based learning VS Rote based learning	Lack of interest

❖ The Next activity was "What are the qualities of a good trainer?".

Answers by participants

Adnan Khalil	Muhammad Razman	Muhammad Sajid Hameed	Rana Mubashar Latif Khan	Mazhar Mumtaz
• Trainer must have a grip on his subject / topic • Trainer should have patience • Should know about the teaching methodologies	• Trainer must know about the interest of the participants in the topic • Trainer is the change reagent	• Trainer must know about activity based learning • Must know about the application of given knowledge • Should not revise or perform the old activities	• Trainer should be to the point • Must know about the National Curriculum • Must know about Pedagogy • Must know about New Research • Should have the abilities to design activities	Trainer must know about • Content • Interest of the participants • Background of the trainees

❖ The Next activity was "What is Learning?".

Answers by participants

Adnan Khalil	Muhammad Razman	Muhammad Sajid Hameed	Rana Mubashar Latif Khan	Mazhar Mumtaz
• Positive change in behavior	• In-depth awareness	• Awareness of conscious	• Positive change in behavior	• Gaining of knowledge & to be able to solve the problems

❖ The Next activity was "How do adult learn?".

Answers by participants

Adnan Khalil	Muhammad Razman	Muhammad Sajid Hameed	Rana Mubashar Latif Khan	Mazhar Mumtaz
Adults learn by • Observation • Experiments • Examples	Adults learn by • Observation • Examples	Adults learn by • Observation	Adults learn by • Integration	Adults learn from • Previous knowledge

Answers by Trainers (PRINCIPLES OF ADULT LEARNING**)**

- ✓ Adults are *autonomous* & *self-directed*.
- ✓ Adults have accumulated a foundation of *Life experiences* & *knowledge* that may include work-related activities, family responsibilities & previous education.
- ✓ Adults are *goal oriented*.
- ✓ Adults are *relevancy-oriented*.
- ✓ Adults are *practical*, focusing on the aspects of a lesson most useful to them in their work.
- ✓ As do all learners, adults need to be shown *respect*.

❖ The Next activity was "The important areas of knowledge of science".

Following were the areas of knowledge of science discussed. The trainees were going to decide which area is necessary which one is not for the trainers of science teachers. Trainees were also giving reasons of their decisions.

- ✓ Learning styles
- ✓ Multiple intelligences
- ✓ Constructivism
- ✓ Alternative framework
- ✓ Nature of Science (NOS)
- ✓ Science Technology Society & Environment (STSE)
- ✓ Scientific Literacy
- ✓ Inquiry
- ✓ Science Process Skills
- ✓ POE Model (Predict, Observe, Explain)
- ✓ 5Es Model
- ✓ Concept Mapping
- ✓ Directed Activities Related to the Text (DART)
- ✓ Experiential Learning
- ✓ Role Play / Games
- ✓ Problem Solving
- ✓ Cooperative Learning
- ✓ Assessment

❖ The Next activity was about "The Multiple Intelligences".

The Trainers discussed the topic "Learning Science through Multiple Intelligence Activities" and then briefly described the multiple intelligences as named below:

- ✓ The verbal-linguistic intelligence
- ✓ The Logical-Mathematical intelligence
- ✓ The Spatial intelligence
- ✓ The bodily-Kinesthetic intelligence
- ✓ The Musical intelligence
- ✓ The Interpersonal intelligence
- ✓ The Intrapersonal intelligence
- ✓ The Naturalist intelligence
- ✓ Existential intelligence

The **2nd Task** was performing any 4 activities of the given activities in group. The allocated time for activities was 45 minutes

After completing each activity the participants were filling the following grid also.

Activity #	Why did you select this activity?	What skills do you need to perform the activity?	What problems did you face in doing this activity?

The **3rd Task** was about "Multiple Intelligence Inventory"

Trainees were to put a "tick" next to those statements which basically were true about them & then at the last they were to conclude the score.

The **4th Task** was about "Multiple Intelligence"

The participants were to select a text from a Science Text Book and then prepare at least 3 multiple intelligence activities on the same text 7 present on chart.

❖ The Next activity was about "The Science Process Skills".

The PTAN Trainers shared a paper of quiz for finding out "what kind of Science Process Skills is being used?".

That paper was consisting of 25 MCQs.

- ❖ The Next activity was about "The Basic Science Process Skills".

The Trainers also discussed & shared a document of "Basic Science Process Skills".

- ✓ Observation
- ✓ Classification
- ✓ Communication
- ✓ Measurement
- ✓ Prediction
- ✓ Inference

- ❖ The Next activity was about "The Higher Level Science Process Skills".

The Trainers also discussed & shared knowledge of "The Higher Level Science Process Skills".

- ✓ Identification
- ✓ Manipulating
- ✓ Interpretation
- ✓ Operational definition
- ✓ Formulations of models
- ✓ Experimentation
- ✓ Construction of hypotheses
- ✓ Drawing conclusion

- ❖ The Next activity was about "The Air Pollution".

The Trainers shared a paper of "The Air Pollution". The trainees were to read the text & then complete the following grid

Name of Pollutant	Sources of pollution	How does it get into the atmosphere?	What harmful effects does it have?
Lead			
		Produced by old car & lorry	
Feron			Destroys the Ozone layer.

❖ The Next activity was about "Directed Activities Related to Texts (DARTs)".

The trainer asks some questions like:

- ✓ What is Directed Activities Related to Texts (DARTs)?
- ✓ What type of activities can you use in DARTs?
- ✓ What type of text can you use in DARTs?
- ✓ What are the advantages of DARTs?
- ✓ How can you develop your own DARTs?

❖ The Next activity was about "Misconception in Language & Science".

The trainer discussed the following topics with the trainees & that was a very fine discussions

- ✓ Daak yahan tak kaisay pohunchi hay? (How the mail has reached here?)
- ✓ One more good technique for teaching & Learning.
- ✓ What are the problems in the present methodologies of Teachings of Science?

❖ The Next activity was about "Constructivism".

The trainer gave some detail knowledge to the participants by discussing the following topics

- ✓ What is Constructivism?
- ✓ Reflective practice
- ✓ Brainstorming
- ✓ Collaborative / Cooperative Learning
- ✓ Concept Mapping
- ✓ Demonstrations
- ✓ Experiential Learning / Experience-Based Learning
- ✓ Metaphor Analysis
- ✓ Micro-Teaching
- ✓ Role Plays
- ✓ Problem-Based Learning

❖ The **LAST** activity was about “Learning”.

The sub topics under the mentioned topic were being discussed in a very fine way with all the participants

- ✓ What is learning?
- ✓ Factors which promotes effective learning
- ✓ How people learn?
- ✓ Ways people learn

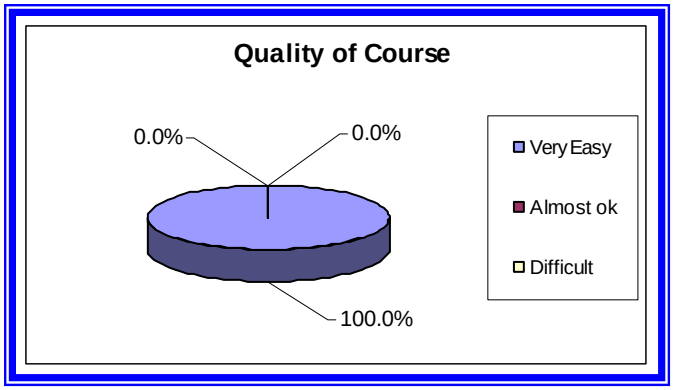
At the last the trainers shared a document “**The Planets-Data Sheet**” with all the participants, in order to apply this information in their trainings / class rooms.

Evaluation by Graph

The training was evaluated by all participants.

a) **Quality / Level of the Course:**

	Frequency	%
Very Easy	5	100.0%
Almost ok	0	0.0%
Difficult	0	0.0%
Total	5	100%

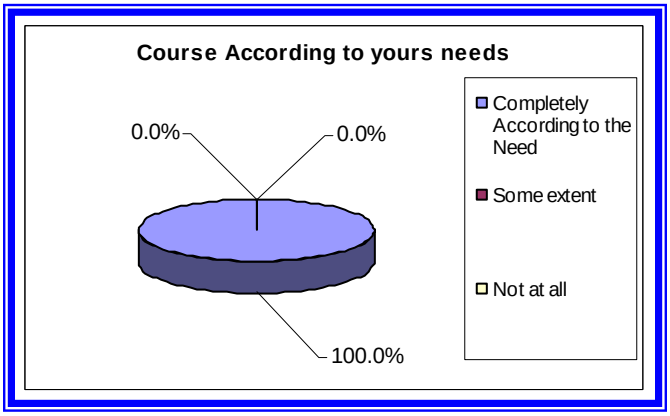


Description:

All participants declared that it very easy training.

b) **Does Training Course meet your Needs?**

	Frequency	%
Completely According to the Need	5	100.0%
Some extent	0	0.0%
Not at all	0	0.0%
Total	5	100%

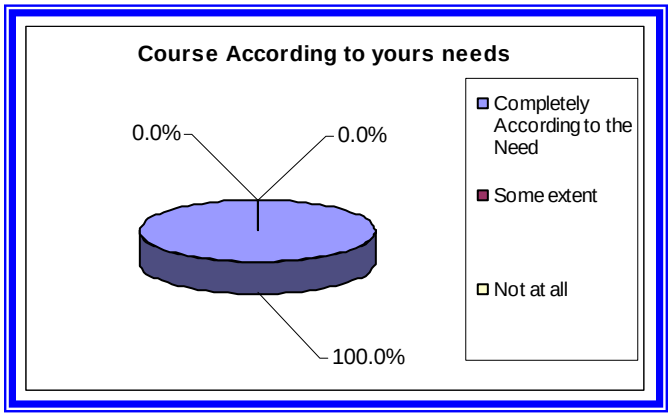


Description:

When asked about the credibility of the course that whether it was according to the needs of the trainees or not. All participants told that it was completely according to their needs.

c) Duration of the Course:

	Frequency	%
Short	5	100.0%
Almost ok	0	0.0%
Lengthy	0	0.0%
Total	5	100%

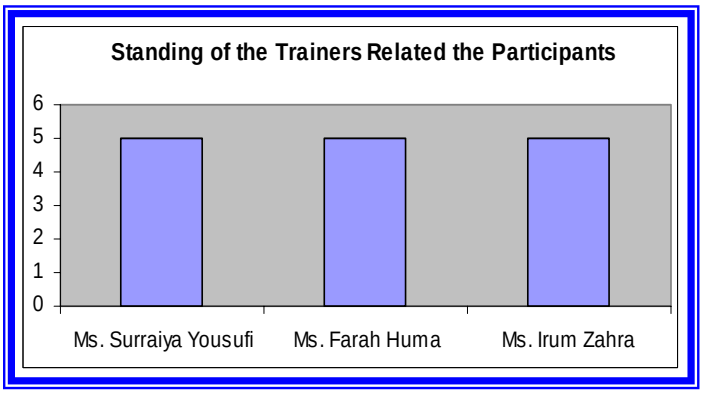


Description:

All participants were of the view that the duration was short.

d) Rating of the Trainers:

	Good	Ok
Ms. Surraiya Yousufi	5	0
Ms. Farah Huma	5	0
Ms. Irum Zehra	5	0

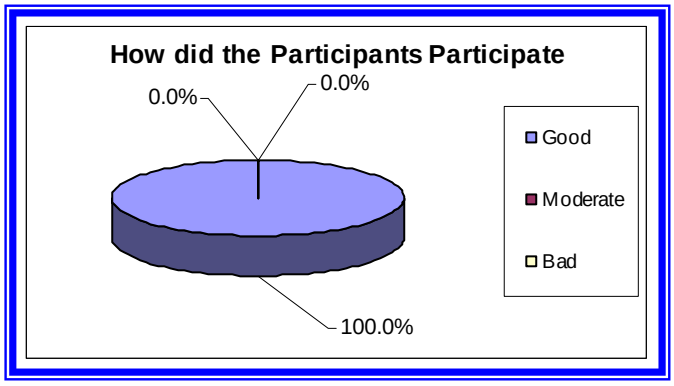


Description:

All participants declared a good trainer to Ms. Farah Huma, all told that Ms. Irum was a marvelous trainer and whereas, all participants declared a good trainer to Ms. Surraiya Yousufi.

e) **Group Work and Participants' Participation:**

	Frequency	%
Good	5	100.0%
Moderate	0	0.0%
Bad	0	0.0%
Total	5	100%

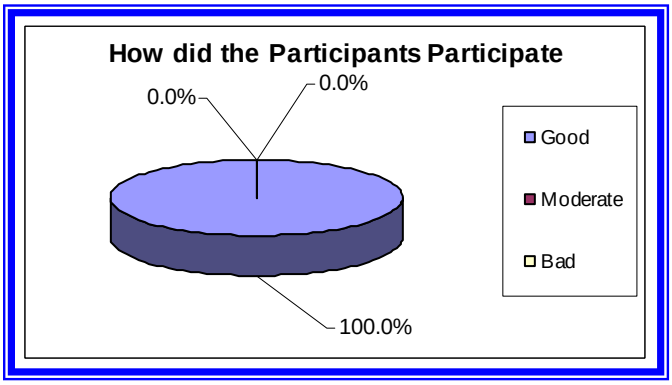


Description:

The participation in activities was admitted as very good by 05 participants.

f) **Hand outs:**

	Frequency	%
Good	5	100.0%
Moderate	0	0.0%
Bad	0	0.0%
Total	5	100%

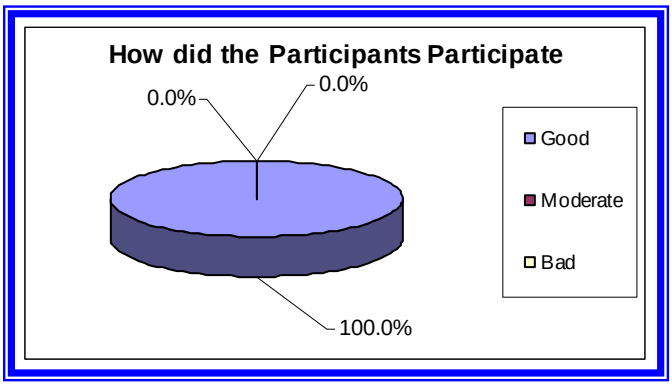


Description:

All the participants declared the handouts are very good.

g) Content Material used by the trainer:

	Frequency	%
Good	5	100.0%
Moderate	0	0.0%
O.K	0	0.0%
Total	5	100%

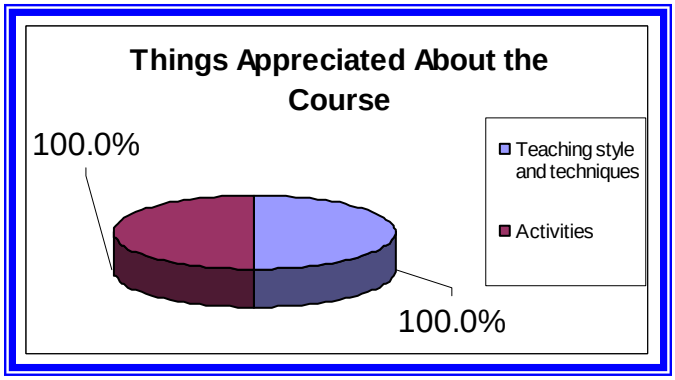


Description:

The Contents & text used by the trainers were admired by the participants and all the participants declared it as very good.

h) Things you like most in the Course:

	Frequency	%
Teaching style and techniques	5	100.0%
Activities	5	100.0%



Description:

All the trainees appreciated the teaching style & activities done during the workshop.

Lessons Learnt / Views of the participants:

- The TOT environment was very friendly and interesting as compared to all the three Phases.
- Teaching methodologies, techniques and AV Aids were the great tools which can help out the trainees in their classrooms.
- The time seems too short for more learning.
- Punctuality was not observed by the Trainees.

Pictures Gallery

Facilitation (BY ITA-MULTAN TEAM)

REPORTED BY

Adnan Khalil **(ITA)**