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Perceptions of Science Teachers regarding Capacity Building Teachers Training Programme in Khyber Pakhtunkhwa

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Abstract: *This research aimed to evaluate Khyber Pakhtunkhwa's Capacity Building Teachers Training Program for science educators. The study focused on the program's effectiveness in meeting the demands of the science curriculum, the applicability of acquired skills and knowledge, and participants' opinions on the course materials and instructional strategies. A descriptive research design was used, and data were collected from 50 science instructors who participated in a 2-week capacity development workshop in May 2012. The study utilized a self-made questionnaire, and the chi-square statistical method was used to analyze the responses. The study found that the course participants were satisfied with the course's standards, teaching methods, and ability to raise teachers' mindfulness and remove material-related teaching challenges. The study recommended that a capacity-building science teachers training program should be held regularly with improved training materials and more information on teachers in the training program.*

Key Words: Education Policy, Teaching, Training in-service, Science Educators

Introduction

Teaching is a complex activity that can only be performed with proper training. Well-trained teachers can be more productive and wholesome. There are two types of teacher training in vogue. The first one is called in-service, and the second is pre-service. Pre-service training is imparted before joining the profession, and in-service training focuses on refresher courses, etc. Pre-service and in-service training for teachers is crucial components of improving the quality of education. Pre-service training refers to the education and training that teachers receive before they begin teaching. In contrast, in-service training is ongoing training and professional development for teachers while they are already in the field.

Pre-service training equips teachers with the necessary knowledge and skills to teach effectively. It also helps them understand teaching challenges, including managing a classroom, developing lesson plans, and assessing student progress. Pre-service training is critical for ensuring that teachers are adequately prepared for teaching demands and equipped to provide high-quality education to their students.

In-service training, on the other hand, is an ongoing process that helps teachers to stay current with the latest research, teaching methodologies, and best practices. It also provides teachers with opportunities to learn new skills and techniques, interact with other teachers, and reflect on their teaching practices. In-service training is essential for teachers to continue developing

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professionally and improving their teaching skills.(Khan, 1992).

In education policy (2009), in-service training has been made compulsory. It was decided that science training will be grounded on real-life contexts, utilization, and availability of science kits to all secondary and elementary schools (Education Policy, 2009).

The programme of science teachers training was conducted by the Directorate of curriculum and teacher education Abbottabad in Khyber Pakhtunkhwa. The duration of this training was from 01-05-2012 to 12-05-2012. The programme was supported by UNICEF and funded by CIDA. The objectives of the programme were as follows:

- To conduct training in the light of the objectives of General Science as given in the National Curriculum for Elementary Classes in 2006.
- To provide awareness to teachers regarding the objectives of the Curriculum.
- To remove content-related teaching difficulties of the teachers.
- To improve the teaching skills of the teachers.
- To help teachers perk up understanding of the subject matter.
- To motivate teachers through active participation in the teaching learning process.
- To improve the education standard by inculcating positive attitudes in teachers.
- To introduce teachers to the teaching aids which are available in daily life.

Statement of the Problem

The objective of that research has been to discover how science instructors felt about the "Capacity Building Science Teachers Training Program", its material, methods, and how well it worked in a realistic working setting of a classroom. Capacity building of elementary science teachers training programme was funded by CIDA and conducted by the "Curriculum's Directorate" as well as "Teacher Education Abbottabad Khyber Pakhtunkhwa".

Objectives of the Study

The following were the objectives of the study:

1. To find out the program's efficacy as per the requirements of teaching science syllabus.
2. To explore the usability of the knowledge and skills learned in the course.
3. To know the views of the course participants regarding the importance of the course contents and teaching methodologies.

Review of Related Literature

The goal of several development initiatives and a component of most others are referred to as capacity building. Although it is usually believed to be a term that is very wide to be helpful, adequate definitions continuing to evade us. It frequently degenerates into a "euphemism" for little greater than training (Potter & Brough, 2004).

Capacity building program in education refers to a process of developing and strengthening the knowledge, skills, abilities, and resources of individuals, organizations, and communities to improve their effectiveness in achieving their education goals. This type of program aims to enhance the capacity of educators, schools, and education systems to deliver high-quality education services that meet the needs of students, communities, and societies.

Capacity-building programs in education may include various activities such as teacher training, curriculum development, leadership training, and school improvement initiatives. These programs are designed to provide educators with the tools and resources they need to improve teaching and learning outcomes, increase student engagement, and promote the overall success of the education system. Capacity building programs are essential for creating sustainable and effective education systems that can adapt to changing needs and contexts.

A programme on "Capacity Building of District Education Officers" was run by

UNESCO to improve the standard and quality of teacher trainings. It was found that the participants benefitted a great deal from the project in their decision making in different areas (Hamid, 2006).

Capacity building brings effective improvements for change in development in schools. Both external as well as internal elements of assistance and pressure a are required for this. A capacity-building program for elementary school teachers concentrates on a very effective school improvement program. It explores the role played by educators as change agents by using related empirical research (Harris, 2013).

A study was conducted on the effects of concept maps on meaningful learning of Biology. The "control group" had been educated via conventional methodologies and experimental group through concept maps. The study's findings indicated that the "experimental group" had greater success than the "control group". As a result, the study suggests using idea maps while teaching science (Güneş et al., 2006).

The younger individuals who exhibit this accomplishment have all had science learning experiences away from the classroom and can develop and express their opinions. They therefore have unique attitudes about science learning, and it is important to take these into consideration (Diamond, 2006).

"Scientists generally have adopted the values of the society to which they have belonged, even in the cases where those values have been development the advancement of science" maybe Lindasay is right to recommend that "not everyone involved in everyday thinking, is a scientist" (Mason, 1962).

Adrienne (2008) analyzed science teachers' competencies in his paper. He believes that recent research and numerous advancements in the area of "science teacher education" point to a "3-fold framework" for preparation of teacher, with SMK (Subject Matter Knowledge), PK (Pedagogical Knowledge), or PCK (Pedagogical Content Knowledge) serving as the pillars of foundation. It has been suggested by the study that training programs for science education must focus mostly on teaching science in a technological and social setting.

"Teaching science as a course of scientific study and investigation, which has its roots in the common experience of children and does not exclude any of the fundamental special sciences" (Kerr, 1996).

In the Education system the role of teahe tcher's is very vital, because his direct involvement in many activities beyond the classroom, such as curriculum development, tetextbookriting, examination, etc. Science teachers generally does not have a completely accurate view of the subject matter they are teaching, and their performance will be less than wholly satisfactory in the science classroom or laboratory. Worthwhile training of teacher require sound teacher training programme. The teachers training programme in the country are more theoretical than practical. These programme seldom make the teachers competent to apply not ideas they get in the training. A trained teacher than realize that what we learn in the training is not applicable in the classroom. This is because of the teacher training programme have been planned without keeping in mind the problems and difficulties faced by the teachers in the classroom (Iqbal, 2006).

Teaching of science is seen as best learned through hands-on activities, and students involvements in deciding the method of learning are surely indictors of constructivist- compatible beliefs (Mahmood, 2007).

Method and Procedure

The study aimed to see the insights of teachers of science about the "in-service science teachers training program" its content, methodology and usability. The study was designed in a descriptive manner. A "self-developed questionnaire" had been utilized for data collection, responded on the basis of Yes, No and to some extent. The questionnaire was delivered to respondents in person.

Population and Sample

The population of the study constituted all the teachers who attended in- service training

program of science teachers directed at Khyber Pakhtunkhwa.

The study's sample comprises fifty professors who undertook a 2-week training program of science teacher capacity building in Abbottabad in May, 2012. The total number of teachers attending the course was 125.

Data Collection

The data were collected from the respondents through a self-developed questionnaire. The questionnaire was developed to get data regarding the content, methodology, and usability of the training programme. For development of the questionnaire related literature available in books, reports, articles and journals was studied. The questionnaire contained 26 items regarding the content, methodology and usability of the programme. The questionnaire was developed in the light of the objectives of study and was responded based on 'Yes' 'No' and 'To some extent' for obtaining the information from teachers attended the training.

Results and Discussion

The responses were tabulated and analyzed by using the statistical technique Chi-square and its significance was determined at degree freedom two at .05 level of significance. The table value of chi-square is 5.991 The total no of respondents was 50. Analysis of the data is given in the following tables.

Table 1. Response of Course Participants Regarding Standard and Content of Course

S. No	Question	Yes	No	To some extent	Chi-square
1.	Are you satisfied with overall standard of capacity building science teachers training programme conducted by directorate of curriculum and teacher education Abbotabad?	44	1	5	68
2.	Are you satisfied with the overall standard of teaching of your instructor during the training?	36	4	10	34
3.	Are the objectives of the training programme in line with the contents of elementary general science?	42	5	3	58
4.	Is the training programme helpful in providing awareness to teachers regarding the objectives of the curriculum?	46	2	2	77.7
5.	Is the training programme helpful in removing content related teaching difficulties of the teachers?	46	3	1	77.8

Chi- square table value: 5.991 df=2 at .05 level

Table No.1 shows that Chi- square value with regard to all the questions is significant. It means that course participants are satisfied with the standard of course; standard of teaching, objectives of the course, providing awareness to teachers and removing content related teaching difficulties.

Table 2. Response of Course Participants Regarding Teaching Skills and Subject Matter

S.No	Question	Yes	No	To some extent	Chi-square
1.	Is the training programme helpful in improving the teaching skills of the teachers?	48	1	1	88.5
2.	Is the training programme helpful in understanding the subject matter of general science?	47	0	3	83.3

S.No	Question	Yes	No	To some extent	Chi-square
3.	Is the training program helpful in using audio-visual training aids for the teaching of general science?	44	2	4	67.6
4.	Does the knowledge and skill provided in the training program usable in actual classroom teaching?	26	4	20	27.78
5.	Is the training programme helpful in inculcating positive attitudes in the teachers?	44	4	2	67.6

Chi- square table value: 5.991

Table No.2 shows that Chi- square value with regard to all the questions is significant. It means course participants agree that the course is helpful in improving teaching skills, understanding the subject matter, using AV aids, and inculcating positive attitudes in teachers.

Table 3. Response of Course Participants Regarding Shortcomings and Books Mistakes

S.No	Question	Yes	No	To some extent	Chi-square
1.	Do you feel any shortcomings in this program?	24	24	2	19.24
2.	Have you notice any mistakes in the manual book?	10	40	0	51.4
3.	Have you noticed any mistake in the workbook?	4	46	0	78.2
4.	Do you consider that this program should be conducted regularly on annual basis?	48	1	1	58.5

Chi- square table value: 5.991

Table No.3 shows that Chi- square value with regard to all the questions is significant. It means course participants agree that they do not feel any shortcomings in the course, mistake in the manual / workbook. The participants also feel that the course be conducted regularly.

Table 4. Response of Course Participants Regarding New Ideas /Improvement in Teaching

S.No	Question	Yes	No	To some extent	Chi-square
1.	Have you got any new idea which will help you in the teaching of general science in the classroom?	46	2	2	77.7
2.	Has this training improved your science teaching capacity?	47	2	1	83.1
3.	Has this training programme covered all the course content of general science?	32	14	4	24.24
4.	Are you satisfied with the procedure and timing of the programme?	40	8	2	49.47
5.	Do you feel that this training programme has broaden your vision for understanding general science?	44	4	2	67.6

Chi- square table value: 5.991

Table No.4 shows that Chi-square value with regard to all the questions is significant. It means course participants agree that the course has improved their teaching capacity and broadened their vision in understanding general science. They also agree that the course
covered the contents of general science.

Table 5. Response of Course Participants Regarding Application of Course Outcomes

S.No	Question	Yes	No	To some extent	Chi-square
1.	Are you applying the outcomes of this training programme in an actual classroom situation?	20	10	20	4
2.	Are you satisfied that students are more comfortably understanding science concepts after the programme you got?	44	2	4	67.6
3.	Do you feel that duration of this programme was sufficient?	8	30	12	16.52
4.	Do you want to participate in such type of programme whenever it occurs again?	48	2	0	88.74

Chi- square table value: 5.991

Table No.5 shows that Chi- square value with regard to all the questions is significant except the first one. It means course participants are satisfied with the understanding of science concepts, the duration of the course and participation in the course. However course participants are divided regarding the application of course outcomes in an actual classroom situation, yet more teachers have supported it.

Response of Course Participants Regarding Open Ended Questions

1. Your overall views about the need of capacity building science teachers training programme? The majority of the respondents feel that there is a need of capacity building science teachers' training program
2. Your overall views about the usability of the capacity building science teachers training programme? The majority of the respondents feel that learning in capacity building science teachers training program is usable in classroom situations.
3. Your overall views about the, importance of capacity building science teachers training program? The majority of the respondents feel that capacity building science teachers' training program is very important for the teachers.

Conclusion and Recommendations

On the basis of analysis of data following findings and conclusion are drawn.

1. The participants of the course are contented with the level of instruction, course goals, raising professors' knowledge, and resolving any material-related teaching challenges.
2. The course participants agree that the course is helpful in improving teaching skills, understanding the subject matter, using AV aids, and inculcating positive attitudes in teachers.
3. The course participants agree that they do not feel any shortcomings in the course, mistakes in the manual ⁄ work book. The participants also feel that the course be conducted regularly.
4. The course participants agree that the course has improved their teaching capacity and broadened their vision in understanding general science. They also agree that the course covered the contents of general science.

5. The course participants are satisfied with the understanding of science concepts, the duration of the course and participation in the course. However, course participants are divided regarding the application of course outcomes in an actual classroom situation, yet more teachers have supported it.

The purpose of this study has been to determine how science educators feel about the "In-Service Science Teacher Training Program's" material, methods, and applicability to actual classroom settings. To improve the quality of our education system we must improve the standard of our teachers by providing them continuous training during their entire career, for that purpose capacity building of the teachers play a significant part. In strengthening the whole structure of our education system, it profoundly depends upon the competent, capabilities and capacity building programme. The Canadian International Development Agency (CIDA) financed and Abbottabad, Khyber Pakhtunkhwa-based Curriculum's Directorate as well as Teacher Education undertook a program to strengthen the capability of primary teachers.

According to the study, participants of the course are happy with the course's standards, instructional approaches, goals, ability to raise educators' understanding, and removal of teaching challenges related to the content of course. The course participants agree that the course is helpful in improving teaching skills, understanding the subject matter, using AV aids, and inculcating positive attitudes in teachers. The course participants also agree that they do not feel any shortcomings in the course, mistakes in the manual book and work book. They feel that the course should be conducted regularly because it has helped in improving their teaching capacity and broadening their vision in understanding general science. The course participants are satisfied with the understanding of science concepts, the duration of the course and participation in the course. However course participants are divided regarding the application of course outcomes in an actual classroom situation, yet more teachers have supported it.

Based on the analysis of data, findings and conclusions, and discussion following recommendations are offered.

1. Capacity Building Science Teachers Training Programme should be conducted regularly on a quarterly basis.
2. The Training Program's material ought to be updated.
3. The training program needs to specify additional teachers.
4. The such training programme should be run for other subjects also.

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