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Skill development: Study on the pre service training to school teachers on computer science

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Abstract
Teacher's training programme enhances effectiveness and develops a systematic way of learning and performing in teaching. Effectiveness of training programme is development in the teacher's knowledge, skill and behavioral pattern within the school as a result of training programme. This amount help to match the cost incurred in the plan and execution of training with the related benefits. Thus, it results whether the programme has been clever to deliver its intended goals and objectives. Effectiveness of training programme means evaluation of the training on trainee's presentation and performance. This paper is descriptive in nature, falls under the group of general review for considerate the conceptual framework of effectiveness of the training programme, its needs and purpose and the various models adopted by school for effectiveness purpose. The purpose of this paper is to create a model of training effectiveness for the acceptance by the human resources development (HRD) executives in their preparation, designing and execution of training programme.

Keywords: Skill development, training, school teachers, computer science

1. Introduction

Development in education is a continuous process which brings change and innovation in set of courses, methodology and assessment or any other area of concern. Change in set of courses takes place at two levels; the content of the course(s) and teacher training programme(s), so that, the objectives of its amendment be properly understood by the school teachers for its effective and efficient delivery to the students in the classroom. Teaching of computer science at school levels has always been a challenge for curriculum developers, subject experts and teachers, since the quality of teaching and learning in the classroom and students success level in private schools with regard to knowledge and skills has never been satisfactory.

Studies have shown that competency of computer science teachers has been a major causes of students' poor performance. A lot of training programmes for computer science teachers are being organized at different levels for the teachers to equip them with necessary most up-to-date knowledge and skills to make them good computer science teachers by the private schools of TamilNadu. Education is a systematic and scientific process of providing knowledge, skills and experiences to develop a human force as per requirements of society. This is accomplished by using different methods and resources at different levels of education for different stakeholders like students, teachers, parents, administrators and others so that every individual of the society be equipped with the desired change in behaviour to be social, cultural, sympathetic and helpful to the other members of society and for the nation.

Educational institution is an important component of the system, where key role is played by the teachers. Teacher is the personality who initiates all curriculum related activities, motivate students to participate and learn from them and also help them to use the newly acquired knowledge and skills in practical situations. Teachers fulfill their obligations with sincere efforts in order to develop the youth of the nation to their full potential. So, for making an efficient education system, availability of effective teachers is the prerequisite and therefore on the top of every educational program, there is a provision of some sort of teachers training and capacity building program.

Usually the purpose of these teachers training programs is to equip them with latest content knowledge, modern methodologies, use of advance technology or other aspects of academic or administrative nature, so that they may fulfill their responsibilities to the fullest satisfaction of students, parents, society and above all their personal satisfaction as a teacher, guide and facilitator. It is believed that as a result of these training programs, teachers utilize their updated knowledge, experience, practices and well managed strategies to satisfy the challenging demands of their profession.

If the teachers are properly educated, rightly guided, well trained and motivated, give better performance in and outside the classrooms. Without effective instruction and communication, a teacher cannot accurately deliver the subject content to the students, who in turn cannot correctly understand and reply in the class, nor write on the answer sheets, so the whole process of teaching and learning is sabotaged by ignoring and not properly addressing this one

aspect of effective interaction in the class between teachers and students.

2. Review of Literature

Marable and Raimondi, (2007) [1] conducted a study to analyze teachers' perceptions during their first year of teaching. The sample consisted of 326 teachers in New York State. The commencement teachers reported need for training in curricular procedures and policies, organizational skills and strategies, role of a teacher, and classroom management. The study suggested for a high quality in-service training for new teachers. The training highlighted the need for improved awareness of new teachers' wants.

Monika. M *et al.*, (2016) [2] studied the effectiveness of the training programme on ISO certification for better performance in a work place. People need to be kept satisfied and the managers should treat all the workers equally without playing them one against the other. Moreover, they should also be aware that the ways in which the workers get motivated vary richly.

Parthasarathy. K *et al.*, (2016) [2] study on the effectiveness of the pre-service training on computer science concluded that, the comments given by the teachers were positive and most of the feedback were almost the same. The majority of the respondents were female and their feedback on the skill development training in the field of information technology was not influenced by gender. But the inter-relationships among the respondents on this training was significant. Finally, the marital status of respondents showed little influence on the feedback of the training programme.

3. Research Methodology

Research Tool: Teachers' opinions were taken by using questionnaire about each activity and also about the whole training programme. These opinions also provide data for qualitative analysis.

Sample: Population for the study is School Teachers of Tiruchirappalli District. Censes sampling was the technique used for sampling. The researchers have selected 131 teachers who have attended the computer science training programme having Theory and Practical aspects. The sample size was extremely suitable for implementing variety of activities planned for enhancement of skills, duration of the experiment is long it is essential for the researchers to be with the teachers for long time.

Control of variables during training: Controls of variables achieved through various ways in the present study are discussed below;

Duration - 2 days were arranged for the implementation of the training programme

Syllabus - This training programme is based on the curriculum framed by IECD, Bharathidasan University. It involves following selected topics from computer science syllabus.

- Computer Basics
- MS Office Automation
- Graphic Design
- Programming Techniques
- Web Design
- C Programming
- C++ Programming and
- 2D Animation

Training programme also involves other materials. This programme is mainly for teaching skills; so emphasis is on skills i.e. listening, speaking, reading, writing skills. Even though four skills work simultaneously emphasis is on one skill at a time.

3.1 Development of Training Programme

The development of training programme is shown form of a flow chart

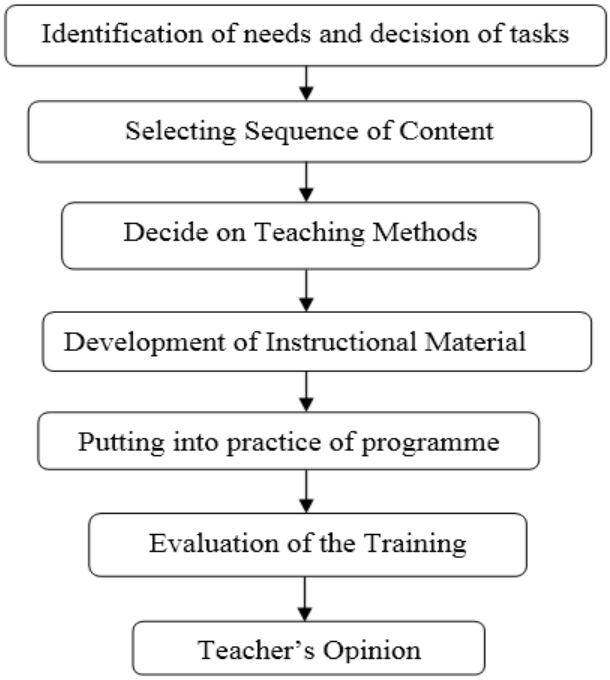

Fig 1: Flow Chart

4. Hypotheses, Test and Results

4.1 Profile of the Respondents

Table 1: Biographical Information of Respondents on the Basis of Age

Age Group	Frequency	Percentage
20 - 25 Years	43	32.8
26 - 30 Years	50	38.2
31 - 40 Years	32	24.4
Above 41 years	6	4.6
Total	131	100.0

The data in the table-1 shows that respondents are fairly distributed across the age profiles. Faculty members with age (26 - 30 Years) have the largest percentage of the respondents. The second highest percentage (32.8) among this category is age (20 - 25 years). 31 - 40 Years (24.4%) holds the third place. Finally, above 41 years takes the lowest percentage (4.6%).

Table 2: Biographical Information of Respondents on the Basis of Gender

Gender	Frequency	Percentage
Male	22	16.8
Female	109	83.2
Total	131	100.0

Table-2 shows the categorization of the respondents based on gender. It is evident from the data in the table-2 shows that female (83%) faculty members formed the larger percentage of the respondents.

Table 3: Biographical Information of Respondents on the Basis of Marital Status

Marital Status	Frequency	Percentage
Married	59	45.0
Unmarried	70	53.4
Widow	1	.8
Separated	1	.8
Total	131	100.0

Table-3 shows the classification of the respondents based on their Marital Status. It is largely evident from the data in the table-3 that married faculty members form the majority of the respondents as compared to faculty members with marital status as Unmarried, Widow and Separated.

Table 4: Biographical Information of Respondents on the Basis of Education Qualification

Educational Qualification	Frequency	Percentage
UG	26	19.8
PG	88	67.2
Above PG	17	13.0
Total	131	100.0

Table-4 shows that faculty members at PG Level accounted for the largest percentage of respondents (67.2%). Faculty members at UG Level came next (19.8%) while the faculty members at above PG had the least percentage (13.0%) amongst the respondents.

Table 5: Biographical Information of Respondents on the Basis of Monthly Income

Monthly Income	Frequency	Percentage
Below Rs.5000/-	27	20.6
Rs.5001 – 7500/-	38	29.0
Rs.7501 – 10000/-	38	29.0
Rs.10001 and above	28	21.4
Total	131	100.0

Table-5 shows the highest value (29%) of the respondents draw monthly income between Rs.5,001-7,500 and Rs.7,501-10,000, 21.4 % of the respondents draw salary Rs.10,000 and above, 20.6 % of the respondents draw monthly income below Rs.5,000 per month.

Table 6: Biographical Information of Respondents on the Basis of Teaching Experience

Experience	Frequency	Percentage
No Experience	30	22.9
1 – 4 Years	62	47.3
5 Years and Above	39	29.8
Total	131	100.0

Table-6 shows that 47.3 % of the respondents work experience is 1-4 years, 29.8% of the respondents work experience is about 5 years & above and 22.9% of the respondents did not have any experience in teaching and they are all new to the teaching profession.

4.2 Hypothesis - 1: There is no significant association between education qualification and effectiveness of the training programme on computer science of the respondents in the study area.

Table 7: Association between Education Qualification and Effectiveness of the Training Programme

Theme	Chi-Square Value	Degrees of freedom	Asymp. Sig. (2-sided)	Statistical Inference
The Objectives of the training were clearly defined	14.776[a]	4	.005	.005 < 0.05 **(Sig)**
Participation and interaction were encouraged	3.161[a]	4	.531	.531 > 0.05 (NS)
The topics covered were relevant to present day context	6.632[a]	4	.157	.157 > 0.05 (NS)
The content was organized and easy to follow	4.507[a]	4	.342	.342 > 0.05 (NS)
The Materials distributed were helpful	2.950[a]	4	.566	.566 > 0.05 (NS)
This training experience will be useful in computer science field	2.407[a]	4	.661	.661 > 0.05 (NS)
The trainers were knowledgeable about the training topics assigned to them.	9.143[a]	4	.058	.058 > 0.05 (NS)
The trainers were well prepared and delivered the both Theory & Practical's on Schools	2.127[a]	4	.712	.712 > 0.05 (NS)
The training objectives were met	9.102[a]	4	.059	.059 > 0.05 (NS)
The time allotted for the training was sufficient	6.442[a]	6	.376	.376 > 0.05 (NS)
The training venue, lab and facilities were adequate and comfortable	4.303[a]	4	.367	.367 > 0.05 (NS)
Overall the training was very useful	2.896[a]	4	.575	.575 > 0.05 (NS)

* Significant at 0.05 level *N = 131*

4.3 Findings

The above table-7 shows that there is no significant association between Education Qualification of the respondents and their opinion about Overall Training Programme. Hence, the calculated value is greater than table value *(p>0.05)*. So the null hypothesis is accepted.

4.4 Hypothesis - 2: There is no significant association between teaching experience and effectiveness of the training programme on computer science of the respondents in the study area.

Table 8: Association between Teaching Experience and Effectiveness of the Training Programme

Theme	Chi-Square Value	Degrees of freedom	Asymp. Sig. (2-sided)	Statistical inference
The Objectives of the training were clearly defined	9.261[a]	4	.055	P > 0.05 (NS)
Participation and interaction were encouraged	11.614[a]	4	.020	P < 0.05 **(Sig)**
The topics covered were relevant to present day context	5.073[a]	4	.280	P > 0.05 (NS)
The content was organized and easy to follow	6.207[a]	4	.184	P > 0.05 (NS)
The Materials distributed were helpful	4.074[a]	4	.396	P > 0.05 (NS)
This training experience will be useful in computer science field	7.144[a]	4	.128	P > 0.05 (NS)
The trainers were knowledgeable about the training topics assigned to them.	2.871[a]	4	.580	P > 0.05 (NS)
The trainers were well prepared and delivered the both Theory & Practical's on Schools	6.698[a]	4	.153	P > 0.05 (NS)
The training objectives were met	8.243[a]	4	.083	P > 0.05 (NS)
The time allotted for the training was sufficient	7.465[a]	6	.280	P > 0.05 (NS)
The training venue, lab and facilities were adequate and comfortable	7.914[a]	4	.095	P > 0.05 (NS)
Overall the training was very useful	9.154[a]	4	.057	P > 0.05 (NS)

* Significant at 0.05 level *N = 131*

4.5 Findings

The above table-8 shows that there is no significant association between teaching experience of the respondents and their opinion about overall training programme. Hence, the calculated value is greater than table value *(p>0.05)*. So the null hypothesis is accepted.

5. Findings of the study

5.1 General Findings

- **Age Group:** The majority of the faculty members with age (26–30 Years) have the largest percentage of the respondent. The second highest percentage (32.8) among this category is age (20–25 years). 31-40 Years (24.4%) holds the third place. Finally, above 41 years takes the lowest percentage (4.6%).
- **Gender:** It is evident from the data female faculty members formed the larger (83.2) percentage of the respondents. Male faculty members takes the lowest (16.8) percentage.
- **Marital Status:** 53.4% of the respondents are unmarried, 45% of the respondents are married and 0.8% of the respondents each widow and separated in the study area.
- **Education Qualification:** It is evident from the data, faculty members at PG Level accounted for the largest percentage of respondents (67.2%). Faculty members at UG Level came next (19.8%) while the faculty members at above PG had the least percentage (13.0%) amongst the respondents.
- **Monthly Income:** The highest value (29%) of the respondents draw income between Rs.5,001-7,500/- and Rs.7,501 – 10,000/-, 21.4 percent of the respondents draw salary Rs.10,000 and above, 20.6 percent of the respondents draw income below Rs.5,000 per month.
- **Teaching Experience:** Majority (47.3 percent) of the respondents work experience is 1-4 years, 29.8 percent of the respondents work experience is about 5 years & above and 22.9 percent of the respondents did not have any experience.

5.2 Hypotheses Related Findings

- There is no significant association between education qualification of the respondents and their opinion about overall training programme.
- There is no significant association between teaching experience of the respondents and their opinion about overall training programme.

6. Conclusion

The teachers usually have more or less mastery over the theoretical as well as practical aspect of their concerned subject area. But this training programme is of theoretical and practical knowledge of the subject can be transferred effectively to teachers by applying suitable methods, skills,

techniques and creating conducive atmosphere. The findings of the present study show that the training programme given to computer science trainers did make any difference in teachers teaching during transacting curriculum. The association difference in teacher's achievement on overall training programme, theory and practical of computer education as compared to biographical information. It could be concluded that the trained teaches utilized the training input. Such two day training programme for computer teachers are essential to bring desirable in teachers teaching and learning.

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