Perspectives of Basic Science and Social Science Teachers Working In Secondary Schools With Reference To In-Service Education

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Abstract
In the context of present day science and technology there is a tremendous explosion of knowledge and skills in all the branches of social sciences and natural sciences. Teachers are the caterers and catalysts of knowledge and skills. In various stages, it is necessary to enrich the knowledge and skills of teachers through In-Service Education. That is why? In-Service Education (ISE) is also called as lifelong education and aims at providing the teacher with the knowledge, skills and competencies that could not be given in the initial training programme. Such lifelong In-Service Teacher Education is essential for the secondary school teachers in order to enable them to cope up with the changing conditions and increasingly multifarious tasks that are entrusted to school. This lifelong learning should be the motto of every teacher. If a teacher stops learning, he degenerates into a bad teacher. This realization is at variance with the belief that education is formal activity being conducted in the four walls of the classroom, and also against the belief considering the end of education with the termination of schooling. In order to improve quality invariably education has to depend on teacher. This is because, ‘The strength of an educational system must largely depend upon the quality of its teachers. However, enlightened the aims, however up to date and generous the equipment, however efficient the administration, value of the children is determined by the teachers’. Hence, there is a need of some sort of provision which may make the teachers up to date with respect to the knowledge of his subject of teaching, methods and techniques and innovative ideas in each sphere of his academic life. For the sake of this reason, the idea of In-Service Education has emerged.

Key Words: In-Service Education, Basic Science & Social Science School Teachers, Lifelong Learning, Knowledge Apprising, Teaching Skills Improvement, Competency, North-Karnataka

1 Introduction
Service Education prepares the teachers to face the challenges and take the adventures in changes. In-Service Education develops the ability to think and apply new ideas constantly and creatively. It helps...
to search for alternative way in achieving objectives of better education. Different agencies of advanced educational technology are adopted for this purpose. The above goal has to be fulfilled through different resources of In-Service Education of secondary schools.

1.1 In-Service Education

The teacher who attends the training programmes such as workshops, seminars, orientation courses, refresher courses and so on, during her/his service to develop her/his professional and personal growth. Such a programme is known as In-Service Education. It may be defined as continuing education of teachers and other educators which commences after initial professional education is over and which leads to the improvement of professional competence of all throughout their careers. In other words, In-Service Education is designed to promote the continuous growth of profession of a teacher after she/he enters to the teaching profession by providing planned and systematic instructions within an educational setting. It refers to the education, a teacher receives her/his education in a teachers’ institute or college of education. But the teacher continues her/his education and should possess three types of competence as follows:

1. Competency in academic field
2. Competency in teaching methodology
3. Competency in classroom interaction analysis and application

It includes the entire refresher courses in which that she/he receives at different institutes. The programmes may be of different types namely full time, part time, evening, and vacation and so on. According to M.B. Buch, a Former Director of the Department of field services, “In-Service Education is a programme of activities aiming at the continuing growth of teachers and educational personnel in-service. It may be regarded as the sponsoring and pursuing of activities which will bring new insight, growth, understanding, and co-operative practices to the members of teaching profession and arouse them to action to improve them in every possible manner.

Cane summed up to define In-Service Education as ‘all those activities and courses which aim at enhancing and strengthening the professional knowledge, interests and skills of serving teachers’. This definition has the following significant components:

1. Professional knowledge 2. Skill aspect 3. Attitude towards profession 4. A code of conduct on ethics of profession 5. Professional skills, such as administrative skills, management skills, organizing skills and leadership skills 6. Interest towards teaching profession 7. Activities - such as seminars, symposium, workshops and discussion

Teacher education is primarily meant for regular serving teachers. It includes such new courses whose fruitfulness and validity have been tested. It subjects the serving teachers to such activities which may enhance their professional knowledge, interest and attitude so that they derive maximum inner satisfaction and sense of achievement.

The following general points explain the need for In-Service Education,

- Education of the educator continues all throughout his professional career in a planned manner.
- Education extension will contribute to the qualitative improvement of education.
- The pre service training provided to the teacher is not adequate for the rest of his professional career for discharging his duties efficiently.
1.2 Rationale for the Study

Of late, very recently, an alternative strategy was evolved for in-service training of teachers. In United States and Israel, it is very much popular to impart education and training programmes at a distance through the use of a variety of telecommunication technologies. These technologies provide access to learning opportunities to groups and individuals who were deprived of education owing to distance and other life circumstances. The teleconferencing approach to education uses one way video and two way interactions via satellite, pre-recorded videotaped instruction, computer systems, cable television, telephones, radio and television broadcasts.

In India, NCERT (1998) employed satellite based in-service training to train a large number of teachers of a single large group by creating a ‘state-wide classroom’. The interaction between the teachers and experts was coordinated by an anchor person. Teachers undergoing the training used Straight Trunk Dialing (STD) on telephone to ask questions to expert panelists. Their answers were transmitted live from the studio of Indira Gandhi National Open University (IGNOU) New Delhi, which had an uplink with transponder on an INSAT satellite operated by the Indian Space Research Organisation (ISRO). This transponder is dedicated to communication and training. The TV uplink Earth Station basically configured for TV Broadcast Service is ext.C band. It uses one 6.8m diameter solid antenna, High Power Amplifier (HPA, up-converter, wide band FM modulator and audio video container. In this NCERT experiment, the faculty of District Institute of Education and Training (DIET) who actively involved in conducting training in a face to face mode for the teachers.

All these new developments, innovations and changes to be brought about in educational objectives, curriculum, textual content, teaching methods, instructional materials, and so forth without delay so education remains dynamic, up to date and responsive. Educational extension is capable of preparing in-service teachers and other educators in the best possible manner for bringing these required changes in education.

- The National Policy on Education (1986) opined that pre-service and In-Service Education is inseparable for the development of teachers. The broad aims or rationale beyond the continuing professional development programmes or In-Service Education are
  1. To explore, reflect on and develop one’s own practice.
  2. To deepen one’s knowledge of and update oneself about one’s academic discipline or other areas of school curriculum.
  3. To research and reflect on learners and their education.
  4. To understand and update oneself on educational and social issues.
  5. To prepare for other roles professionally linked to education or teaching such as teacher education, curriculum development and counseling.
  6. As far as National Curriculum Framework 2005 is concerned the entire secondary school curriculum is redesigned and restructured on the principle of structuralism. It leads to training for in-service teachers.
  7. Due to implementation of Rastriya Madhyamika Shiksha Abhiyan (RMSA) - there is a structural change in the primary and secondary, and intermediate education.
  8. As course content becomes more complicated and specialized into subjects such as physics, chemistry, life sciences, history, geography, language and mathematics, the quality of teaching and learning is increasingly dependent on the ability of teachers to understand these subjects and facilitate students’ learning.
Keeping all the above points in the mind, the research investigator has undertaken the study of In-Service Education especially in some districts of North-Karnataka. Thus the above discussion establishes need for the present study.

Thus the research investigator has formulated the problem for the present study in the following way.
Perspectives of Basic science and Social science teachers with reference to in-service education.

2 Objectives of the Study
1. To compare the difference between basic science and social science teachers of secondary schools with respect to their perspectives towards In-Service Education and its dimensions namely,
   - Need for In-Service Education
   - Main objectives of In-Service Education
   - Models of In-Service Education
   - Alternative courses or programmes of In-Service Education
   - Nature of activities of In-Service Education
   - Different methods of In-Service Education
   - Resource persons and centers of In-Service Education
   - Evaluation system of In-Service Education.
2. To compare the interaction effect of divisions (Belgaum, Gulbarga), gender (Male, Female) and faculty (Basic Science, Social Science) of secondary school teachers’ perspectives towards In-Service Education.

3 Delimitations of the Study
- The present study was confined only to the secondary school teachers that have attended In-Service Education.
- Only those teachers who were teaching Basic Science and Social Science subject streams were included in the study.
- The present study was limited to Belgaum and Gulbarga divisions of Karnataka.
- The present study confined only to Belgaum and Bijapur, Gulbarga and Yadgir districts of the divisions of Belgaum and Gulbarga respectively.
- The present study was limited only to the selected variables of secondary school teachers.

4 Methodology of the Study
- **Population**: The population of the present study is secondary school teachers that have attended In-Service Education.
- **Sample**: Questionnaire on In-Service Education for Secondary School Teachers was standardized by the research investigator. r=0.87 was Reliability coefficient of the tool and content validity was established. Survey method was employed to gather data from 500 samples with Stratified sampling technique.
5 Analysis of the Data

Table 1: Mean and SD - perspectives of secondary school teachers towards In-Service Education and its dimensions according to faculty

<table>
<thead>
<tr>
<th>Variable</th>
<th>Summary</th>
<th>Basic Science</th>
<th>Social Science</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perspectives towards In-Service Education</td>
<td>Mean</td>
<td>293.86</td>
<td>285.57</td>
<td>289.58</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>17.78</td>
<td>18.81</td>
<td>18.77</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Mean</td>
<td>87.27</td>
<td>84.63</td>
<td>85.91</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>7.24</td>
<td>8.01</td>
<td>7.75</td>
</tr>
<tr>
<td>Perspectives towards needs of In-Service Education</td>
<td>Mean</td>
<td>33.80</td>
<td>32.51</td>
<td>33.13</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>3.30</td>
<td>3.29</td>
<td>3.35</td>
</tr>
<tr>
<td>Perspectives towards main objectives of In-Service Education</td>
<td>Mean</td>
<td>30.96</td>
<td>29.19</td>
<td>30.05</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>4.75</td>
<td>4.10</td>
<td>4.51</td>
</tr>
<tr>
<td>Perspectives towards models of In-Service Education</td>
<td>Mean</td>
<td>31.69</td>
<td>31.07</td>
<td>31.37</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>4.67</td>
<td>4.12</td>
<td>4.40</td>
</tr>
<tr>
<td>Perspectives towards alternative courses or programmes of In-Service Education</td>
<td>Mean</td>
<td>37.34</td>
<td>35.07</td>
<td>36.17</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>4.69</td>
<td>4.14</td>
<td>4.56</td>
</tr>
<tr>
<td>Perspectives towards nature of activities of In-Service Education</td>
<td>Mean</td>
<td>12.17</td>
<td>11.59</td>
<td>11.87</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>1.72</td>
<td>1.59</td>
<td>1.68</td>
</tr>
</tbody>
</table>
6 Results and Discussion

The above table represents the Mean and SD of perspectives of secondary school teachers towards In-Service Education and its dimensions according to faculty. The total mean perspectives scores towards In-Service Education of secondary school teachers is 289.58±18.77, in which the science teachers of secondary schools have higher Perspectives towards In-Service Education (293.86±17.78) as compared to arts teachers of secondary schools 285.57±18.81. The details of mean and SD scores of dimensions of Perspectives towards In-Service Education according to faculty of teachers of secondary schools are also presented in the above table.

6.1 Research Hypothesis: There is interaction effect of divisions (Belgaum, Gulbarga), gender (Male, Female) and faculty (Basic Science, Social Science) secondary school teachers’ perspectives towards In-Service Education.

6.2 Null Hypothesis: There is no significant interaction effect of divisions (Belgaum, Gulbarga), gender (Male, Female) and faculty (Basic Science, Social Science) secondary school teachers’ perspectives towards In-Service Education.

To achieve this hypothesis, the 3-way ANOVA with interaction effects design was performed and the results are presented in the following table.

Table 2: Results of 3-way ANOVA with interaction effects of divisions (Belgaum, Gulbarga), gender (Male, Female) and faculty (Basic Science, Social Science) of secondary school teachers’ perspectives towards In-Service Education.

<table>
<thead>
<tr>
<th>SV</th>
<th>DF</th>
<th>SS</th>
<th>MSS</th>
<th>F-value</th>
<th>P-value</th>
<th>Signif</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divisions</td>
<td>1</td>
<td>4268.84</td>
<td>4268.84</td>
<td>13.1239</td>
<td>&lt;0.05</td>
<td>S</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>743.00</td>
<td>743.00</td>
<td>2.2842</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td>Faculty</td>
<td>1</td>
<td>8042.87</td>
<td>8042.87</td>
<td>24.7266</td>
<td>&lt;0.05</td>
<td>S</td>
</tr>
<tr>
<td>3-way interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divisions x Gender</td>
<td>1</td>
<td>85.57</td>
<td>85.57</td>
<td>0.2631</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td>Divisions x Faculty</td>
<td>1</td>
<td>18.72</td>
<td>18.72</td>
<td>0.0575</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td>Gender x Faculty</td>
<td>1</td>
<td>780.85</td>
<td>780.85</td>
<td>2.4006</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td>3-way interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divisions x Gender x Faculty</td>
<td>1</td>
<td>80.47</td>
<td>80.47</td>
<td>0.2474</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td>Error</td>
<td>492</td>
<td>160033.56</td>
<td>325.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>499</td>
<td>174053.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the above table it is evident that

- The main effect of divisions (Belgaum and Gulbarga) on secondary school teachers’ perspectives towards In-Service Education is found to be significant at 5% level of significance. Since the obtained F value 13.1239 is greater than the F table value 3.8400, the null hypothesis is rejected.
and alternative hypothesis is accepted. It means that the secondary school teachers’ perspectives towards In-Service Education are different in Belgaum and Gulbarga divisions.

- The main effect of gender (Male, Female) of secondary school teachers’ perspectives towards In-Service Education is found to be not significant at 5% level of significance. Since the obtained F value 2.2842 is smaller than the F table value 3.8400, the null hypothesis is accepted and alternative hypothesis is rejected. It means that the male and female teachers of secondary schools have similar perspectives towards In-Service Education.

- The main effect of faculty (Basic Science, Social Science) of secondary school teachers’ perspectives towards In-Service Education is found to be significant at 5% level of significance. Since the obtained F value 24.7266 is greater than the F table value 3.8400, the null hypothesis is rejected and alternative hypothesis is accepted. It means that the secondary school teachers teaching basic science and social science subjects have different perspectives towards In-Service Education.

- The interaction effect of divisions (Belgaum and Gulbarga) and gender (Male, Female) of secondary school teachers’ perspectives towards In-Service Education is found to be not significant at 5% level of significance. Since the obtained F value 0.2631 is smaller than the F table value 3.8400, the null hypothesis is accepted and alternative hypothesis is rejected. It means that the male and female teachers serving in the divisions of Belgaum and Gulbarga have similar perspectives towards In-Service Education.

- The interaction effect of divisions (Belgaum and Gulbarga) and faculty (Basic Science, Social Science) of secondary school teachers’ perspectives towards In-Service Education is found to be not significant at 5% level of significance. Since the obtained F value 0.0575 is smaller than the F table value 3.8400, the null hypothesis is accepted and alternative hypothesis is rejected. It means that the secondary school teachers of the divisions Belgaum and Gulbarga, teaching basic science and social science subjects have different perspectives towards In-Service Education.

- The interaction effect of gender (Male, Female) and faculty (Basic Science, Social Science) of secondary school teachers’ perspectives towards In-Service Education is found to be not significant at 5% level of significance. Since the obtained F value 2.4006 is smaller than the F table value 3.8400, the null hypothesis is accepted and alternative hypothesis is rejected. It means that the secondary school male and female teachers teaching basic science and social science subjects have similar perspectives towards In-Service Education.

- The interaction effect of divisions (Belgaum and Gulbarga), gender (Male, Female) and faculty (Basic Science, Social Science) of secondary school teachers’ perspectives towards In-Service Education of teachers of secondary schools is found to be not significant at 5% level of significance. Since the obtained F value 0.2474 is smaller than the F table value 3.8400, the null hypothesis is accepted and alternative hypothesis is rejected. It means that the secondary school male and female teachers of the divisions Belgaum and Gulbarga, teaching science and arts subjects have similar perspectives towards In-Service Education.

7 Conclusion

The present study intended to explore the perspectives of the secondary school teachers towards In-Service education in the present context. The present study is supported by some of the important similar studies undertaken by Lazarus Ndiku Makewa, Baraton (Dec 2011), Fayyaz Ahmad Faize and Muhammad Arshad Dahar (2011), S.Sabu(2010), Kim Agatha Ramatlapana (2009),

- The basic science teachers of secondary schools have higher perspectives towards In-Service Education as compared to social science teachers of secondary schools.
- The secondary school teachers’ perspectives towards In-Service Education are different in Belgaum and Gulbarga divisions.
- The male and female teachers of secondary schools have similar perspectives towards In-Service Education.
- The male and female teachers serving in the divisions of Belgaum and Gulbarga have similar perspectives towards In-Service Education.
- The secondary school male and female teachers teaching basic science and social science subjects have similar perspectives towards In-Service Education.
- The secondary school male and female teachers of the divisions Belgaum and Gulbarga, teaching basic science and social science subjects have similar perspectives towards In-Service Education.
- As the more experienced and old age teachers possess negative attitude towards In-Service Education, so it is recommended that some psychosocial adjustment programmes should be arranged to maintain the teaching interest at an expected level.
- It is emphasized by the teachers that the evaluation system of In-Service Education is in the present context is not being done properly. So the care should be taken at the time of planning such In-Service Education to evaluate at each session.
- The teachers are required to participate in more and more In-Service Education conducted by government and educational institutions, organizations and associations.

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