



CONTENT ENRICHMENT IN SCIENCE THROUGH STUDENT'S INVOLVEMENT - A STUDY

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Abstract

The quality of education is determined by quality of teaching and quality of teaching in its turn is determined by desired behavioural change in the students. So for enhancing the quality of education, students play important role by participatory learning with the help of various activities.

In TEIs', the admitted student teachers have been offered by various methods according to their discipline and subject offered for degree level. As a result of this, it has been considered that they should have basic knowledge in concerned subject.

Science is an informative subject including various experiments. The student teachers offering science method are graduates (and some of them are post graduates) of subjects like Physics, Chemistry, Botany, Zoology, microbiology, Agriculture, Engineering, Mathematics etc. So there is a space to consider that they should have basis content knowledge at least up to 10th standard. But it has been observed by the researcher that they are not having content knowledge up to the mark. So she decided to find reasons behind this and remedial measures.

In present paper, the present condition of content knowledge of student teachers, reasons and remedial measures are described.

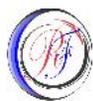
Key words: *content knowledge, content enrichment.*

Introduction

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Objectives of study

- 1) To find the basic content knowledge of student teachers.
- 2) To find the reasons behind inappropriate content knowledge.
- 3) To find efficiency of the remedial measures.

Limitations

This test was restricted to students of Azad college of Education only.

Sample

60 students with Science method in B.Ed. curriculum.

Tools

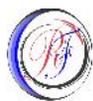
Content tests- Pre & post

Research procedure

The content test was administered after admitting the student in the institution. The content test in science included basic concepts, formulae, and cause effect relationship upto 10th standard. Objective and short answer type questions were the part and panel of the content test.

The test was assessed and the mark sheets were prepared. Analysis was done with the help of which some of the reasons were noted. The interview schedule was executed and 30% of the students were interviewed. The following table gives the reasons behind less content knowledge of the student teacher.

Sr. No.	Reason	No. of students	Percentage
1	Intimation about test was not given	30	50
2	The test was in Marathi, so some terms were difficult to understand	15	25
3	Having mathematics as principle subject, so there was problem to recall the knowledge	10	16.66
4	The time was not sufficient.	04	6.6
5	Some concepts were not taught properly at secondary level	06	10
6	Because of loss of memory	05	8.33
7	Lack of seriousness in test	03	5



The mean of the score achieved by the student teachers was calculated and it was found to be 17.68 (1061/60).

Remedial measures

It was a critical task for researcher because of delay in admission process it was impossible to teach key concepts in science (except given in the syllabus). In the world of the constructivism, researcher thought to enrich the content knowledge of science with the help of students' involvement. The institute has science club. Following activities were organised by science club throughout the year (up to 27th February).

Students' involvement through activities by Science club

- 1) Preparation and exhibition of wall posters every week.
- 2) Organisation of seminars of student teachers based on the content included in the syllabus of science methodology.
- 3) Content analysis project:- Six groups of student teachers were formed. A standard was assigned to each group. The student teachers were given task of content analysis for given standard co-operatively.
- 4) Organisation of lectures of renowned person:- content enrichment workshop (through science club) was specially organised. In this workshop demonstrations and guidance of experienced science teachers were organised.
- 5) Individual projects: - Student teachers having science methodology were encouraged to take individual projects in the area of their own interest. E.g. Path tracking discoveries, information about scientists, etc.
- 6) Power point presentations:- During I.T workshops the emphasis was given on enriching the content(it was also having some difficulties)
- 7) Use of internet before performing the practice lessons:- Science and mathematics resource centre has internet facilities for appropriate and updated knowledge the student teachers were asked to find more information about content and note it down to inform other student teachers so that they could gain extra knowledge by sharing
- 8) The organisation of competition:- Various competitions such as science quiz, scientific rangoli, nutritious food & preparation of scientific equipment, etc. were organised for secondary school pupils and student teachers also.
- 9) Book exhibition:- the exhibition of scientific books was organised.
- 10) Organisation of experiments based on eradication of superstitions:- these experiments were helpful to develop scientific attitude among student teachers.
- 11) Scientific laboratory management training:- this training was organised to the student teachers so that they will get information about various models, specimens, microscopes, chemicals, experimental apparatus based on physics.
- 12) Collection of presentations from YouTube.
- 13) Celebration of Science day:-on the occasion of Science day students were encouraged to perform various activities such as guest lectures, information of scientist such as Newton, Einstein, Dr. A.P.J Abdul Kalam, C.V Raman, Marie Curie, etc.



14) Other projects:- Some individual projects such as knowing the plants in the college premises, vermi-composed plant, botanical garden etc. were executed for student teachers.

After 28th February the post test was given to the students (which included the same concepts with increased difficulty level). The mean score was 34.6. That means difference in the mean score was =34.6-17.6=17.

Conclusion

- 1) Because of students' participation in various activities, their content knowledge was enriched.
- 2) The quality of content knowledge was also increased.
- 3) The interest towards this subject was also increased.
- 4) Content Enrichment Programme was helpful for inculcation of scientific attitude and increase in confidence level.
- 5) Due to co-operative learning activities student teachers co-operated freely.
- 6) Critical analysis of textbooks of science of standard 5th -10th was done by the students.

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