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## Content Preparedness of Internees under B.Sc. B.Ed. Program: Analysis of Learning Levels before Internship in Teaching

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### ABSTRACT

This paper is based on the outcomes of a study, which sought to find out the preparedness of prospective teachers, under B.Sc. B.Ed. program, on the contents of science subject common to both PCM and CBZ groups. The sample for the study consisted of 40 student-teachers of B.Sc. B.Ed. program studying in Regional Institute of Education, NCERT, Bhopal. A test comprising of 20 items, including multiple choice and short answer types, based on some core concepts of science content of class VI to class X was administered to the subjects prior to their placement in different schools for internship in teaching. The results of the test revealed that the students need to possess enriched knowledge on science contents for successful delivery of lessons during internship, despite the fact that the program puts due emphasis on content preparation. The findings of the study suggest some interventions for content enrichment of internees under B.Sc. B.Ed. program.

**Keywords:** Internship in teaching, prospective teachers, science, content preparation.

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### BACKGROUND OF THE STUDY

Regional Institute of Education, Bhopal, a constituent unit of NCERT, offers many need based programs in the fields of pre-service teacher education catering to the needs of the States/UTs of western India. Four year integrated course, namely B.Sc. B.Ed. is one of the important programs, which prepares science students for teaching profession. The program includes both education as well as science components of the degree level (B.Ed. and B.Sc.) prescribed by its affiliating University, namely Barkatullah University, Bhopal. It is expected that the products of this program would be competent to justify their roles as science teachers at secondary education level. Professional competence of the teachers, *inter alia*, has critical significance on the promotion of the quality of education at any level. Hence, teachers training institutions carry the responsibility of qualitative improvement of the educational system of the country through professional development of teachers.

Internship in teaching, as an important component of teachers training programs, put emphasis on the pedagogical preparation of the interns assuming that content preparedness is taken care of in

the routine class room teaching in various disciplines throughout four years of B.Sc. B.Ed. program. It ensures fundamental preparation of students for teaching profession. As per the syllabus of Barkatullah University, Bhopal, the process for preparing the students for internship starts in fifth semester during which interns are exposed to various teaching skills for a period of two weeks followed by school exposure program for 10 days in 6th semester. The actual internship in teaching happens in seventh semester for a long period of 16 weeks, including a period of two weeks for pre-internship activities, during which student-teachers are placed in schools for actual classroom experiences in order to sharpen their teaching skills. Pre-internship activities are confined to the preparation of students for pedagogical aspect only. In other words, pre- internship orientation program does carry any activity so as to ensure conceptual understanding of the interns in science. It can be assumed that the performance of the student-teachers during internship would be better if some interventions are provided for the promotion and assessment of their content knowledge.

### **RATIONALE OF THE STUDY**

During supervision and onsite support to the internees, while on internship in teaching in various schools, it is observed that some of the student teachers, particularly under B.Sc. B.Ed. program, lack basic understanding of science concepts already taught at the school level. It is also observed that some of the student teachers have better understanding of the pedagogical aspects as compared to the content aspect. Some of the studies in the other professional fields (e.g. medical) show that majority of the students confess their unpreparedness for internship (Abuhusan, Chotimall & O'Neill, 2009) when they are asked to self-assessed. Keeping these points in view it is thought to find out the status of content preparedness of the internees under B.Sc. B.Ed. program.

### **Objectives of the Study**

1. To assess the understanding of basic science concepts of prospective teachers under B.Sc. B.Ed. (Physical Science Group) program prior to their placement in schools for internship in teaching.
2. To make item-wise analysis of understanding of the basic science concepts of prospective teachers under B.Sc. B.Ed. (Physical Science Group).

### **METHODOLOGY OF THE STUDY**

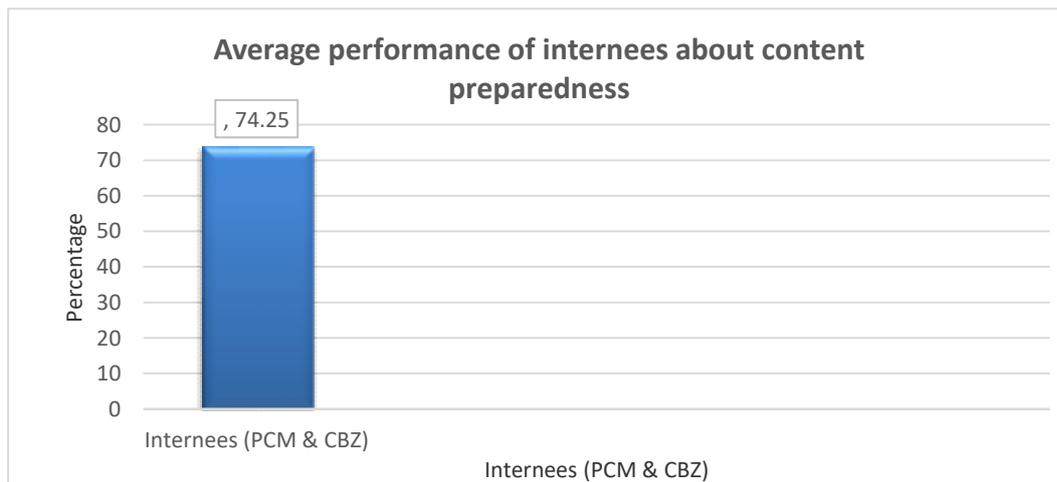
The sample for the study consisted of 40 randomly selected student-teachers of B.Sc. B.Ed. program, 20 each from CBZ & PCM groups, studying in Regional Institute of Education, NCERT, Bhopal. A test comprising of 20 items, including multiple choice and short answer types, based on some core concepts of science content of class VI to class X was administered to the subjects prior to their placement in different schools for internship in teaching. The results, derived from the test, are analyzed to assess the performance of the student teachers.

### **RESULT AND DISCUSSIONS**

Responses of randomly selected 40 students, 20 each from PCM & CBZ groups, are analyzed and presented in the following sections.

#### **Average Performance of Internees**

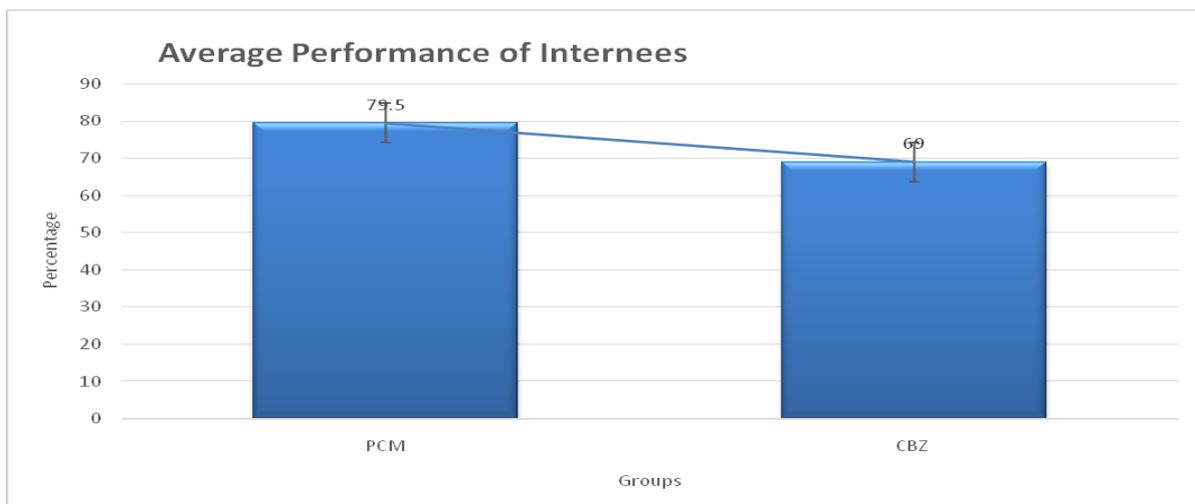
Analysis of the performance of internees in the test revealed that they know only about 75% of contents. This result imply that prospective teachers are not adequately prepared as far as conceptual understanding of basic science concepts is concerned. They are expected to have understanding of 100% basic science concepts before going for internship in teaching programme.



(Figure 1: Average Content Preparedness of Internees)

### Average Performance of PCM vis-à-vis-CBZ Groups of Internees

Comparison of the average performance of internees in the test revealed that there is wide gap in the percentage of basic science contents understood by PCM (79.5%) and CBZ (69%) groups of internees. This result implies that PCM group of internees have better understanding of basic science contents as compared to that of their CBZ counterparts, although understanding of both the groups appears to be inadequate. The comparative picture of performance of both PCM and CBZ groups of internees can be seen from the figure 2 as follows.

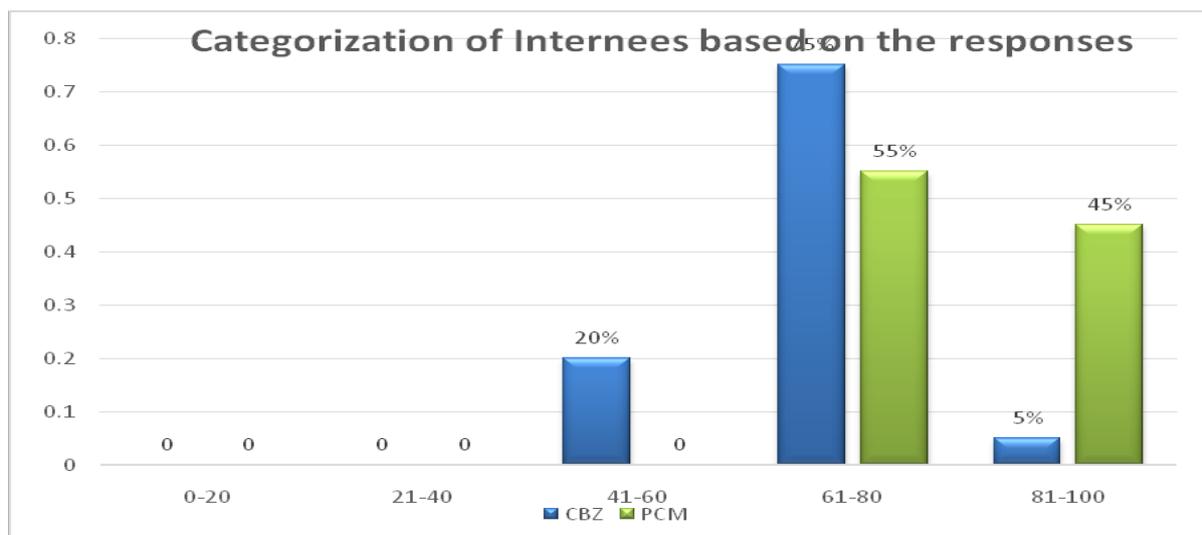


(Figure 2: Average Content Preparedness of PCM & CBZ Groups of Internees)

### Learning Levels of Internees on science Contents

Analysis of learning levels of internees, on the basis of their performance in the test, revealed that only one-fourth of the internees (25%) fell at the top level of achievement, i.e. scored between 81% and 100% in the test; and majority of the internees (65%) scored between 61% and 80%. The percentage of internees who scored between 41% and 60% is as less as 10%. None of the internees are found to score below 41%. These figures depicting learning levels of internees on science contents indicate that only one-fourth of the internees have adequate content preparedness before they are sent

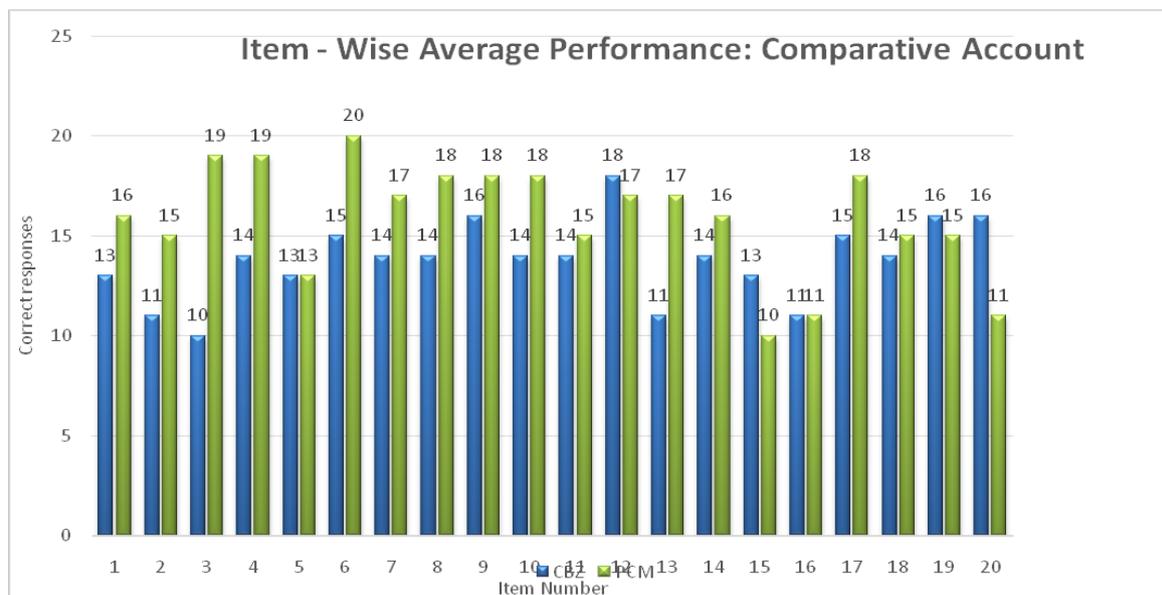
to schools for internship in teaching. These results further indicate that around three-fourth of the internees need training on contents before internship in teaching.



(Figure 3: Categorization of Internees Based on their Responses)

### Item-wise Average Performance of PCM & CBZ Groups of Internees

Comparison of item-wise average performance of PCM and CBZ groups as shown in figure 4 revealed that the performance of PCM group of internees are better as compared to their CBZ counterparts, except item numbers 12 (reactivity of metals), 15 (difference between salt and sugar), 19 (soap & detergents) and 20 (identification of elements based on their properties).



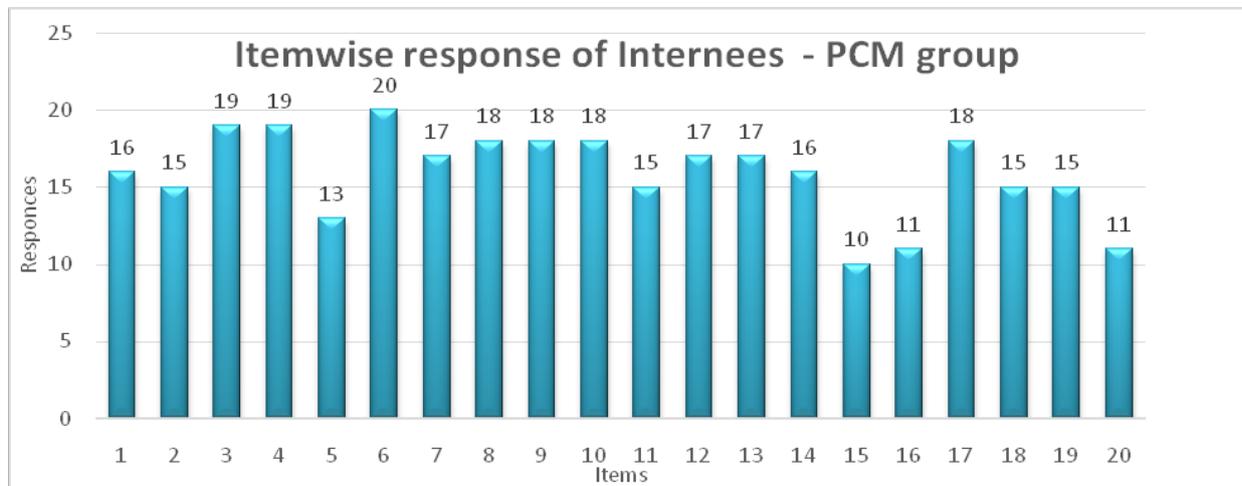
(Figure 4: Item-wise Average Performance of PCM & CBZ groups)

### Item-wise Responses of Interns

Analysis of responses of internees to all the 20 questions did not reveal similar pattern in case of any of the items of the test. Item-wise responses of internees of PCM and CBZ groups are shown in figure 05 and 06 respectively.

**Item-wise Responses of PCM Group**

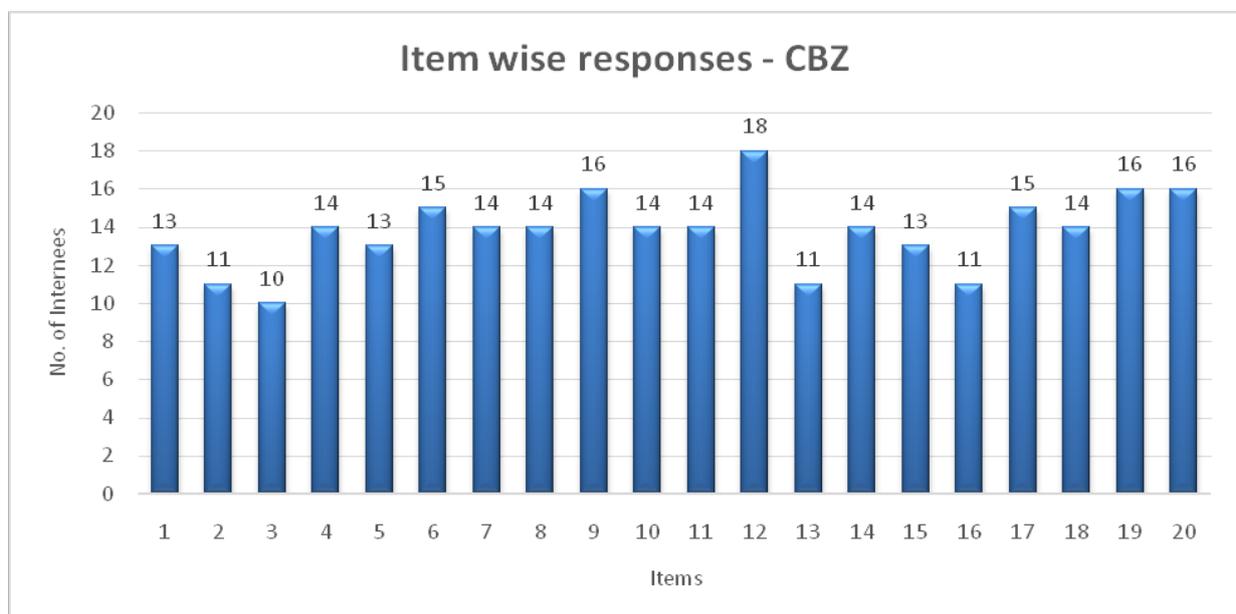
Figure 05 represents that only one, out of 20 items, i.e. item no. 6 (application of acid, base & neutralization concept in daily life) is responded correctly by all the students of PCM group (100%), whereas item no. 15 (separation of substances; identification of sugar & salt without tasting) is responded correctly by only half of the internees (50%) of the same group.



(Figure 05: Item wise Responses of PCM Group)

**Item wise Responses of CBZ Group**

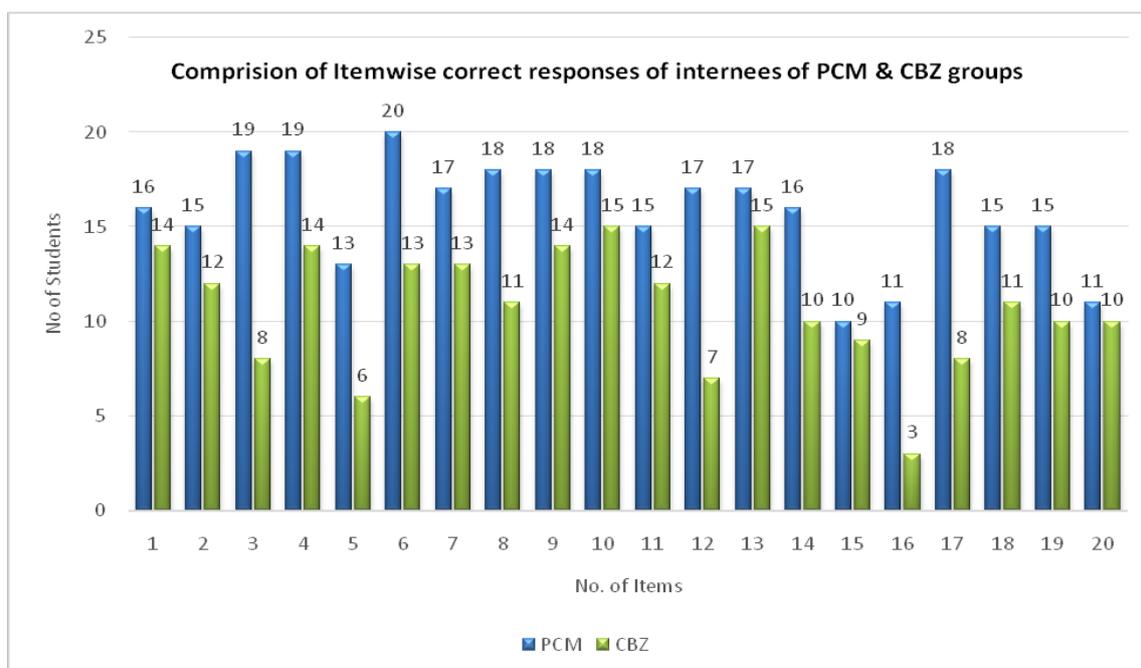
Figure 06 shows responses of CBZ group of internees to each of the 20 items. It can be seen from the figure 6 that item no. 12 (reactivity of metals) has been correctly responded by maximum internees (90%) internees of the CBZ group. The percentage of internees, who responded item no. 2 (separation of substances), item no. 3 (reactivity series of metals), item no. 11 (fossil fuels), item no. 16 (atomic structure -Bohrs’ model) correctly fall between 50% and 50.5%.



(Figure 06: item wise Responses of CBZ Group)

### Comparison of Item-wise Responses of PCM and CBZ Group

Figure 07 reflects the comparative picture of item wise responses of both the groups. It can be seen that PCM group interneers have performed better as compared to that of their CBZ counterparts in all the 20 items. Only in one, out of 20 items, i.e. item no. 6 (application of acid, base & neutralization concept in daily life) all the interneers of PCM group (100%) have responded correctly. The corresponding figure for CBZ group is only 65 %. In case of item no 3 (reaction of metals with moisture and atmospheric oxygen) and 4 (reversible and irreversible changes), the percentages of PCM and CBZ groups, who responded correctly are 95 % and 70 % respectively.



(Figure 07: comparison of item wise Responses of PCM and CBZ Groups)

### MAJOR FINDINGS

- i. The interneers of B.Sc. B.Ed. program performed only 75% of contents correctly prior to their internship in teaching. These results imply that prospective teachers are not adequately prepared as far as conceptual understanding of basic science concepts is concerned.
- ii. There is wide gap in the percentage of basic science contents understood by PCM (79.5%) and CBZ (69%) groups of interneers. This result implies that PCM group of interneers have better understanding of basic science contents as compared to that of their CBZ counterparts, although understanding of both the groups appears to be inadequate.
- iii. Only one-fourth of the interneers (25%) fell at the top level of achievement, i.e. scored between 81% and 100% in the test; and majority of the interneers (65%) scored between 61% and 80%. The percentage of interneers who scored between 41% and 60% is as less as 10%. None of the interneers are found to score below 41%.
- iv. The performance of PCM group of interneers is better as compared to their CBZ counterparts in all the 20 items of the test. However, only in one, out of 20 items, i.e. item no. 6 (application of acid, base & neutralization concept in daily life), all the interneers of PCM group (100%) could respond correctly. The corresponding figure for CBZ group is only 65%.

## EDUCATIONAL IMPLICATIONS OF THE STUDY

The results of the study have the following implications for the teacher education institution under study, i.e. Regional Institute of Education, Bhopal:

- i. Analysis of learning levels of internees under B.Sc. B.Ed. programme, on the basis of their performance in achievement test, revealed that only one-fourth of the internees (25%) fell at the top level of achievement, i.e. scored between 81% and 100% in the test. These results further indicate that around three-fourth of the internees need training on contents before internship in teaching
- ii. The teacher education institution are required to plan some focused intervention for internees under B.Sc. B.Ed. programme, during pre-internship phase, to strengthen their content knowledge along with pedagogical understanding. The internees are expected to have understanding of 100% basic science concepts before going for internship in teaching programme.
- iii. In view of the wide gap in the percentage of basic science contents understood by PCM (79.5%) and CBZ (69%) groupsof internees; and fact that the performance of PCM group of internees is better as compared to their CBZ counterparts in all the 20 items of the achievement test, special attention need to be paid for the promotion of content knowledge of CBZ group of internees.

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## About the Author:

Dr. Rashmi Sharma is working as an Associate Professor in Chemistry at Regional Institute of Education, NCERT, Bhopal, Madhya Pradesh since 2006. At present she is involved in the teaching, research, development and extension activities in tuned with the guiding philosophy of NCERT.

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