

APPENDIX - CQUESTIONNAIRE TO THE SNR. SEC. SCHOOL PHYSICS TEACHERS.

CENTRE OF ADVANCED STUDY IN EDUCATION
 FACULTY OF EDUCATION & PSYCHOLOGY
 M.S. UNIVERSITY OF BARODA
 BARODA - 390 002

DATE:

To,
 The Physics Teachers (Std. XI & Std. XII)

Re: Ph.D. Study : "AN EVALUATION OF SNR. SEC.
 SCHOOL PHYSICS TEXTBOOKS PRODUCED BY NCERT":
 AN APPEAL TO RESPOND TO THE QUESTIONNAIRE.

Dear Sir/Madam,

It is a matter of great pleasure for me to write to you in connection with my doctoral study to evaluate the experimental editions of NCERT'S physics textbooks. May I make an appeal to you to please find some time to go through the enclosed questionnaire and answer them to the best of your knowledge. Your valuable and expert opinions in the form of your written responses will be kept fully CONFIDENTIAL and will be used purely for research purpose; so I request you to completely feel FREE while responding.

On the right hand side of each question, three symbols are given : 'Y' - Meaning 'YES', 'N' - Meaning 'NO', AND 'U' - Meaning 'UNDECIDED'; please encircle the one which agrees with your views after giving a 'Serious' thought about each, based on your 'over all' opinions and the experience in using these experimental physics textbooks. It would be highly appreciated if you please give REASONS/ as many details as possible for your responses, on the attached additional Sheets of paper, with proper references (i.e. ISSUE, QUESTION NO, Chapter No. Page No. etc.) especially for 'STARRED' ITEMS. i.e. I-6, 7,8,13, III-5, IV-2, V-1,2, VI-1, VII-4.

Thanking you,

Yours sincerely,

(Sd-)

(DIVAKARA RAO YEKKAR)

Encl: Questionnaire and
 Additional Sheets.

APPENDIX - C (CONTD.)

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QUESTIONNAIRE FOR SNR. SEC. SCHOOL PHYSICS TEACHERS

GENERAL INFORMATION :

1. NAME OF THE SCHOOL :
2. QUALIFICATIONS :
3. TOTAL TEACHING EXPERIENCE :
4. TOTAL EXPERIENCE IN TEACHING STD. XI & XII STUDENTS :
5. NO. OF YEARS YOU HAVE USED THE PRESENT EXPERIMENTAL EDITIONS OF PHYSICS TEXTBOOKS :

I. REGARDING THE CONTENT OF THE TEXTBOOKS :

1. Do you agree that the "PREREQUISITES" from previous classes (especially from STD. VIII, IX & X - based on new syllabus and new Science textbooks produced by NCERT,) have been taken care of in the present physics textbooks for Snr. Sec. School ? Y/N/U
2. Do you think that the knowledge of mathematics from previous classes is enough for the students to grasp physics discussed in these textbooks? Y/N/U
3. Do you agree that the way in which the topics are introduced in the textbooks are systematic ? Y/N/U
4. Do you think that the development of the major concepts are systematic in the textbooks ? Y/N/U
5. Do the textbooks lay emphasis on the development of the concepts rather than on description of facts and details ? Y/N/U
6. Do you find adequate number of illustrations in the textbooks ? Y/N/U
- * 7. Do you find topics that are very difficult for majority of the students to grasp ? Y/N/U
- * 8. In these textbooks, are there any
 (a) unnecessarily detailed topics/chapters ? Y/N/U
 (b) extraordinarily short topic/chapters which lack very much, needed details ? Y/N/U
9. Whenever new terms are introduced, do you find the 'technical/scientific' meanings given immediately in the textbooks ? Y/N/U

Appendix - C (contd.)

10. Do you find a clear picture of all major themes/ concepts in the textbooks ? Y/N/U
11. Do you think that the concluding paragraphs of previous chapters have proper connections with the introductions of the next chapters in these textbooks ? Y/N/U
12. Do you find "INTEGRATED SCIENCE APPROACH" in the textbooks ? Y/N/U
(Please refer 'GLOSSARY OF TERMS' at the end)
- * 13. Do you think that the concepts and facts given in the textbooks are
- (a) accurate ? Y/N/U
 - (b) up-to-date ? Y/N/U
 - (c) easy to understand for the students ? Y/N/U
14. Do you think that there are enough references to the concerned physicists, their original works and the history of physics in the textbooks ? Y/N/U
15. In the textbooks, are you satisfied with what is given in :
- (a) 'Foreword' ? Y/N/U
 - (b) 'Preface' ? Y/N/U
 - (c) 'A note for students' ? Y/N/U
 - (d) 'A note for teachers' ? Y/N/U
 - (e) 'Epilogue' ? Y/N/U
 - (f) 'Index' ? Y/N/U
 - (g) 'Erratum' ? Y/N/U
 - (h) 'Bibliography' ? Y/N/U
 - (i) 'Appendices' ? Y/N/U

II. REGARDING THE NATURE & STRUCTURE OF PHYSICS/SCIENCE.

1. Do you think that the textbooks reflect the philosophy of science in general and physics in particular ? Y/N/U
2. Do you think that the textbooks would help the students to develop 'scientific attitude' and to get training in the 'scientific method' ? Y/N/U
(Please refer 'GLOSSARY OF TERMS' at the end).
3. Do you notice that there are enough opportunities for readers of the textbooks (students) to develop the process skills of scientific inquiry ? Y/N/U
(Please refer 'GLOSSARY OF TERMS' at the end).

Appendix - C (contd.)

III. REGARDING THE COMMUNICATION STRATEGIES :

1. Do the textbooks present 'thought-provoking' and interesting questions in the process of communication with the readers (i.e. students) of the textbooks? Y/N/U
2. Do the textbooks give specific and practical suggestions for activities (a) inside (b) outside the school in their communication to the students ? (a) Y/N/U
(b) Y/N/U
3. Do you think that the textbooks have directly addressed the students ? Y/N/U
4. Do you find some self-instructional passages in the textbooks ? Y/N/U
5. Are you satisfied with (a) the adequacy of (b) the quality of diagrams/labelling/pictures given in the textbooks ? (a) Y/N/U
(b) Y/N/U

IV. END-OF-CHAPTER EXERCISES :

1. Are the examples worked out in the textbooks very useful in solving the problems at the end-of-chapters ? Y/N/U
- * 2. Have you found any 'ERROR'
(a) in the questions/problems given in 'Exercises'? Y/N/U
(b) in answer corresponding to the Questions/Problems given at the end of the books ? Y/N/U
3. Is it possible for you to differentiate between 'dull', 'average' and 'bright' students by asking them to do the given exercises at the end of the chapters ? Y/N/U
4. Do you think that the problems given in the "EXERCISES" are properly 'GRADED' (i.e. From 'simple' to 'complex') ? Y/N/U
5. Do you think that there are enough problems/activities/questions in "EXERCISES" under (a) Knowledge level? (b) "UNDERSTANDING (OR COMPREHENSION) LEVEL"? and (c) APPLICATION & OTHER HIGHER LEVELS"?
(Please refer 'GLOSSARY OF TERMS' at the end) (a) Y/N/U
(b) Y/N/U
(c) Y/N/U
6. Do you think that the 'STARRED' problems (which are meant for bright students) are really challenging ? Y/N/U

Appendix - C (contd.)

V. LANGUAGE ASPECTS :

- * 1. Do you find (a) grammatical errors? (a) Y/N/U
(b) speelling errors in the textbooks? (b) Y/N/U
2. Do you think that the 'Vocabulary' used in the textbooks are within the range of students' understanding? Y/N/U
- * 3. Do you find cases of lack of 'CLARITY' in an attempt to achieve 'BREVITY' in the textbooks? Y/N/U
4. On the whole, do you think that the language used in the textbooks is quite interesting (with certain literal usages such as humors, comparisons to funny incidences in life, etc.)? Y/N/U

VI. PHYSICAL ASPECTS :

- * 1. Are you satisfied with the
- (a) get-up (quality) of cover pages of the textbooks? Y/N/U
- (b) durability of the textbooks? Y/N/U
- (c) size of letters in the textbooks? Y/N/U
- (d) 'Interspcce' between the lines? Y/N/U
- (e) quality of ink used in printing the textbooks? Y/N/U
- (f) quality of the paper used? Y/N/U
- (g) size of the textbooks? Y/N/U
- (h) the bulk of the textbooks? Y/N/U
- (i) the price of the textbooks? Y/N/U
- (j) the distribution of the textbooks in the market? Y/N/U

VIII. OVERALL :

1. On the whole, do you think that the textbooks have effectively and sufficiently covered all the major concepts and applications of physics as per the latest CBSE syllabus for Snr. Sec. Schools? Y/N/U
2. Do you think that the standard of the textbooks are at par with the level of the students at Snr. Sec. Schools? Y/N/U
3. On the whole, do you think that the textbooks reflect on the :
- (a) nature and structure of science in general and physics in particular? Y/N/U
- (b) goals and broad objectives of teaching science curriculum in general and physics curriculum in particular at Sr. Sec.Schools? Y/N/U

- (c) goals and broad objectives of Education/Science Education in general and Snr.Sec.Sch. physics curriculum in particular ? Y/N/U
- * 4. Do you really think that the present textbooks are better than the previous (XI & XII) textbooks produced by NCERT ? Y/N/U
5. Are these textbooks really useful to you for your planning of day-to-day teaching work ? Y/N/U

GLOSSARY OF TERMS : 1. INTEGRATED SCIENCE APPROACH

(REF.FOR I-13): is an approach to the teaching of science (in general or any branch of science) in which concepts and principles are/premature or undue stress on the distinctions between the various branches of science.

2. SCIENTIFIC ATTITUDE (Ref: for II-2) : Behaviour reflecting intense curiosity, humility, scepticism, suspended judgement, determination, open-mindedness, etc.

3. SCIENTIFIC METHOD (Ref: for II-2): Systematic method of tackling any problem, which involves STEPS such as, identifying problem, observing, hypothesizing, experimenting, analysing, concluding, verifying, etc.).

4. PROCESS SKILLS OF SCIENTIFIC INQUIRY (Ref: for II-3) : Skills such as observation, measurement, manipulation, classification, raising questions, interpreting data, inference, prediction, making operational definitions, formulating hypothesis, formulating mental models, etc.

5. KNOWLEDGE LEVEL (Ref: for IV-5): Answer of the 'questions/problems which recalls and recognizes the 'CONTENT' such as, "facts, terminology, symbols, classification, theories, laws, structures, etc."

6. UNDERSTANDING LEVEL (Ref. for IV-5) : Answer of the questions/problems which requires mental operations like "Seek relationship, cite examples, discriminate, classify, verify, interpret, generalise, etc."

7. APPLICATION & OTHER HIGHER LEVELS (Ref. for IV-5) : Answer of the questions/problems which provide operations like "reason, hypothesize, infer, predict, analyse, synthesize, evaluate, etc."

In connection with (5), (6) & (7) please note that (i) attainment of (6) is not possible without (5) and attainment of (7) is not possible without (6). (ii) Number of Questions/Exercises/Problems are ideally supposed to be approximately 25%, 35% and 40% respectively, for (5), (6) and (7).

/presented so as to express the fundamental unity of scientific thought and avoid