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### CHALLENGES FACED BY BEGINNER TEACHERS OF SECONDARY SCHOOLS IN VADODARA CITY

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#### Introduction

Education's evolving landscape emphasizes not only the transmission of knowledge but also the cultivation of practical skills, critical thinking, and socioemotional development. As teaching methods adapt to incorporate interactive learning strategies and technological advancements, the role of educators transforms from mere transmitters of information to facilitators of holistic growth. However, navigating the complexities of modern classrooms presents significant challenges for new teachers, including managing student behavior, integrating technology, and coping with low pay. To address these hurdles and ensure their professional success, beginner educators rely on collaborative support from various stakeholders, including colleagues, administrators, and parents. Amidst these challenges, initiatives like the New Education Policy (NEP) 2020 aim to empower educators by reducing non-teaching responsibilities, enhancing pedagogical independence, and providing opportunities for ongoing professional development. By fostering a nurturing environment that supports new teachers' growth and well-being, educational institutions not only cultivate individual success but also contribute to systemic improvements in teaching and learning. Ultimately, investing in the professional development of new educators is not just a strategic imperative but also a moral obligation to uphold the standard of high-quality education for all, benefiting both students and society at large.

Despite extensive research on the difficulties faced by novice teachers, significant gaps remain, such as insufficient consideration of contextual nuances, limited examination of the effectiveness of coping mechanisms, lack of attention to intersectional influences, absence of longitudinal studies, and disregard for innovative support methods. Addressing these gaps is essential to enrich our understanding of the experiences of new teachers and to guide the development of focused measures that support their professional growth and well-being. In a time characterised by shifting teaching methodologies and a diverse student population, novice teachers must tackle numerous challenges—from handling administrative tasks to nurturing creativity and achieving a harmonious work-life balance. Recognising and

addressing these hurdles is vital to aiding new educators as they adapt to the teaching profession and aim to create a positive impact on students' academic outcomes.

#### **Rationale**

Beginner teachers encounter a variety of challenges as they embark on their teaching journeys, especially when adapting to the dynamic nature of education and the intricacies of classroom management. Research has highlighted numerous obstacles, including classroom discipline, tailoring teaching methods to meet diverse student needs, and navigating social structures within schools. These issues emphasize the need for robust support systems, mentoring, and continuous professional training to enable beginner teachers to strengthen their capabilities and successfully carry out their duties. Collaboration among stakeholders in the education sector plays a vital role in equipping new teachers with essential resources, direction, and training to tackle these challenges effectively and excel in their positions. Furthermore, fostering a culture of shared learning within the teaching community can facilitate the exchange of best practices, enriching pedagogical skills and ultimately benefiting educators and students alike.

Additionally, it is crucial to recognise the unique hurdles faced by beginner teachers in private school settings, where institutional frameworks, resource availability, and professional development opportunities can vary significantly compared to government-run establishments. By paying attention to the distinct requirements of new teachers in private institutions, specific interventions and policy changes can be introduced to improve teacher readiness and support across varying educational scenarios. Ultimately, prioritising the professional growth and well-being of beginner teachers not only enhances the standard of teaching but also empowers educators with the tools to make a positive impact on student learning outcomes and advance the teaching profession at large

With this idea the present study was taken up with the objective of identifying the challenges being faced by Beginner teachers in dealing with students, the co-teachers, the principals of and parents of Secondary school students in Vadodara city and to infer the kind of support the beginner teachers get from the Students, Co-teachers, Principals & Parents of the Secondary Schools in Vadodara city.

The beginner teacher for the present study was a teacher who has not completed more than two years of teaching after completing their B.Ed. i.e., beginning two years of being an in-

service teacher. The present study was delimited to the Beginner teachers teaching in the English Medium Secondary Schools of Vadodara city, run by Private management and have not completed more than two years of teaching after completing their B.Ed.

The present study followed a descriptive survey type of research design. 56 beginner teachers from 48 schools responded to the google form used for data collection. The investigator prepared an open-ended questionnaire on various dimensions of beginner teachers' experience in dealing with the students, co-teachers, Parents & principals of the school. The questionnaire had 30 items out of which 7 questions were for gaining their personal information & 23 were related to the objectives. The data was collected by sending the Google form link to the identified sample after obtaining prior permission. The data were content analyzed objective-wise to understand the challenges faced by beginner teachers in secondary schools of Vadodara city.

#### Findings of the Study

The study's primary findings highlight the numerous challenges faced by beginner teachers across various aspects of their interactions within the educational ecosystem. When working with students, novice educators encounter difficulties in managing classroom dynamics, addressing behavioural issues, evaluating student progress, and accommodating culturally diverse and multifaceted student groups. Furthermore, they struggle to meet the varying needs of students while grappling with the complexities of classroom management and sustaining student engagement amid technological distractions and limited resources.

Additionally, beginner teachers face challenges in collaborating effectively with co-teachers, overcoming communication barriers, and managing conflicts stemming from differences in teaching philosophies and priorities. Principals play a crucial role in supporting beginner teachers through resource allocation, communication of policies, feedback mechanisms, and provision of professional development opportunities. However, challenges remain in balancing administrative responsibilities, addressing resource requests, and offering adequate support for professional growth. Similarly, beginner teachers encounter obstacles in engaging with parents, including managing difficult conversations, addressing unrealistic expectations, and overcoming cultural and linguistic barriers, underscoring the need for improved communication and collaboration between teachers and parents. Despite these challenges, beginner teachers benefit from the support of students, co-teachers, principals, and parents,

which plays a vital role in fostering a conducive learning environment and encouraging their professional growth and well-being.

The study highlights the diverse challenges beginner teachers face as they begin their teaching careers. From managing classroom dynamics to navigating administrative tasks and building strong relationships with parents, these educators face a steep learning curve as they adjust to their roles. Importantly, the study underscores the critical role of mentors in helping new teachers navigate student diversity and create supportive learning environments. Additionally, the burden of administrative duties can place significant stress on beginner teachers, emphasising the need for clear guidance and practical training to equip them with skills to handle these demands. Furthermore, the study stresses the importance of providing adequate support to beginner teachers in managing parent-teacher relationships and addressing parental concerns, particularly when dealing with sensitive issues or unrealistic expectations.

Despite these hurdles, beginner teachers receive support from a range of stakeholders, including parents, principals, colleagues, and students. This support is reflected in collaborative efforts, emotional encouragement, advocacy, and professional development opportunities, all of which contribute to the growth and success of novice educators. By acknowledging these challenges and leveraging the assistance of stakeholders, beginner teachers can navigate their early career experiences more effectively and evolve into confident and competent instructors. Thus, a holistic approach that considers the diverse needs of beginner teachers and utilises stakeholder support is essential for advancing their professional development and ensuring their success in the teaching profession.

#### **Conclusion**

In summary, beginner teachers face a range of challenges when working with students, coteachers, principals, and parents. These challenges include classroom management, behaviour control, performance evaluation, and navigating diverse and culturally varied student groups. Additionally, administrative tasks such as grading and policy communication add to their workload. Collaboration with fellow educators can also be difficult due to communication barriers and conflicting priorities. Despite these issues, the level of support provided by parents, principals, colleagues, and students varies significantly, which greatly influences the professional development and effectiveness of new teachers in the classroom. Establishing



robust support networks—including mentorship programmes, specialised training, and fostering collaborative relationships among all stakeholders—is key to ensuring the success and well-being of beginner teachers in the education system.

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# CONSTRUCTION AND EFFECTIVENESS OF A PROGRAMME FOR IMPROVEMENT OF ENGLISH PRONUNCIATION OF THE STUDENTS OF STD. VIII OF SECONDARY SCHOOL OF DABHOI TALUKA

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#### **INTRODUCTION:**

Language is often described as a 'skill' rather than a subject. The language as skill, is more a matter of doing than of knowing. When a child is born in a community, he listens to the language spoken by that community. As the child begins to learn his mother tongue, the very first skill that he acquires is the skill of listening. At the next stage, he tries to reproduce the sounds that he has heard by way of verbal expression i.e. the skill of speaking. The ability to read and write is a matter of literacy that is incorporated in the school syllabi. There are four language skills: listening, speaking, reading and writing. These are called basic language skills as they are essential and fundamental in language learning.

Language learning involves the reproduction by the learner of the sounds and patterns used by other human-beings around him. In the learning of English as a second language, however, the habits already acquired in connection with one's first language stand in one's way. Each language has a different sound system and in the learning of foreign language, one's habit of his first language comes in the way of his proper learning. One has, therefore, to resist the pull of the mother-tongue and recognise one's habits of hearing and speech. Thus, 'Speech' or 'Pronunciation' is extremely significant at all stages of learning a language.

So naturally, the teaching of spoken English creates many problems, specially for the pupils that come to learn English as a second language. The greater dissimilarities between the mother tongue and the second language, the problems are more and more acute, both for the teachers as well as for the learners. In order to get good result in English, there is a need to give adequate practices for developing different skills and acquaint the students with the behaviour of the language.

#### STATEMENT OF THE PROBLEM:

Construction and effectiveness of a programme for Improvement of English pronunciation of the students of Std-VIII of secondary school of Dabhoi Taluka.

#### **OBJECTIVES OF THE PRESENT STUDY:**

The present study is an attempt to detect the weaknesses of English pronunciation of students of the secondary school. The objectives of the present study are :

- 1. To construct a 'Diagnostic Test' for the pronunciation of selected English words.
- 2. To develop a 'Pronunciation Improvement Programme' in order to reduce the errors committed by the students.
- 3. To study the effectiveness of the developed Pronunciation Improvement Programme.

#### **OPERATIONAL DEFINITIONS:**

#### **Construction:**

Noun means (1) constructing (2) thing constructed (3) Syntactical arrangement (4) interpretation"

#### **Effectiveness:**

"Producing a successful result"

"Significant difference between means of pronunciation error scores in Pre-test and Posttest would be considered as effectiveness of the pronunciation Improvement programme."

#### POPULATION AND SAMPLING OF THE STUDY:

Present Study was related to improvement of English pronunciation of the students of Std-VIII i.e. its area related to linguistic. Amongst the 12 talukas of Vadodara, Dabhoi taluka was selected as a population of the study and total 2 secondary schools of Dabhoi taluka were also selected. The population of the present study was consisting of secondary school students who were taught English as a second language. The mother tongue of these students was Gujarati.

The Purposive sampling technique was employed for the sample of the present study. Pandya High school and Navpad High school of Dabhoi were selected. There were 8-Classes of Std-VIII, out of its 36-girls and 44-boys were selected by the systematic Random sampling.

#### THE LIMITATIONS OF THE STUDY:

The limitations of the present study were:

- 1. The present study was carried out on 80 students from two secondary schools of Dabhoi Taluka.
- 2. The aim of the Present study was remedial i.e. dealing only with problems and not all aspects of the pronunciation of English words.
- 3. The present study was conducted on the students whose mother tongue was Gujarati and English was taught as a second language.

#### PLANNING OF THE REMAINING CHAPTERS:

The Organization of the remaining chapters of the present research report is as under: **Chapter-I:** Second chapter of the report deals with the review of the related literature and researches.

**Chapter-II:** Third chapter of the report deals with research setting and research design. **Chapter-III:** The fourth chapter deals with the method of data collection, analysis and interpretation of the data.

**Chapter-IV:** The fifth chapter covers summary, conclusions, recommendations and implications of the findings.

#### **POPULATION AND SAMPLE:**

- Amongst 12 Taluka of Vadodara, Dabhoi Taluka was selected as a population of the study.
- Total two secondary schools of Dabhoi Taluka were also selected.
- The investigator has experimented on the students whose mother tongue was Gujarati and English was learnt as a second language.
- The mother tongue of these students was Gujarati
- Total 80- students of both schools we?eT/Ehe samples? of the study.

#### LIMITATIONS OF THE STUDY:

The limitations of the present study were:

- 1. The present study was carried out on 80 students from two secondary schools of Dabhoi Taluka.
- 2. The Present study aimed at specific problems of speech pronunciation of selected words only.

3. The present study was conducted on the students having Gujarati as mother tongue and learning English as a second language.

#### **ANALYSIS OF DATA:**

Significant difference between means of pronunciation error scores in pre-test and posttest was considered as the effectiveness of the Remedial programme. Mean pronunciation score, SD, SED, were found out of pre-test and post-test. The difference between means of pronunciation scores were checked by t-test. As research hypothesis regarding the effectiveness of the Remedial programme was directional, the significant levels were treated as one tailed test.

#### **FINDINGS**:

- 1. The students were not able to pronounce the words with the silent letters, irregular words, consonant cluster, the phonemes like /F/ /W/ /S/ /r/ ....... etc, long & short vowels and diphthongs like /ei//av/.....etc.
- 2. The remedial measures taken to overcome the difficulties faced by the students in pronunciations were; i) listening Practice; ii) Repetition Practice: Choral Drilling; Individual Drilling.
- 3. The pronunciation Improvement programme was effective. The students were able to pronounce the selected words correctly after receiving remedial treatment.
- 4. There is a significant difference between means of pronunciation error scores in pretest and post-test obtained by experimental group.
- 5. There is no significant difference between means of pronunciation error scores in pretest and post-test obtained by controlled group.

#### **EDUCATIONAL IMPLICATIONS:**

Educational implications on the basis of the findings are suggested as under:

- The students should be provided standard pronunciations practice through the oxford Dictionary pronunciations or BBC pronunciation practice.
- 2. Where English is taught as a third or second language, emphasis should be given to the pronunciations of the words with the silent letters, irregular words, consonant cluster, the phonemes like /f/; /V/; /S/; etc. long & short vowels and diphthongs like /ei/; /rv/; etc.

- 3. Rigorous training in the pronunciation of the above mentioned sounds should be rendered to listen and to speak English during the class-room teaching.
- 4. Continuous evaluation and remedial practice can help the students to improve their pronunciations.
- 5. The teacher should use various teaching aids and techniques in order to improve pronunciations of English words.
- 6. A teacher's sincere efforts in this direction would make the students learn English better and motivate the students to learn English with deep interest.
- 7. The teacher should organise various competitions for the corrections of the pronunciations of the students.
- 8. So far as the pronunciation of English words is concerned, parents' adequate attention towards their children is needed.

#### SUGGESTIONS FOR FURTHER STUDIES:

- 1 The pronunciation Improvement programme can be conducted with the help of language laboratory.
- 2. A computer aided language learning (CALL) package for the pronunciation Improvement programme in English language can be prepared.
- 3. The pronunciation Improvement Programme can be designed for the students of primary schools.
- 4. It was found that some students were suffering from cultural bias regarding the pronunciations. To reduce such biases a special programme can be prepared.
- 5. The Present research has been carried out at M.Ed. level which can be enlarged by using miscellaneous variables at Ph.D. level.
- 6. A teacher can implement this type of programme during their class-room teaching.

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### DEVELOPMENT AND EFFECTIVENESS OF CAI IN SCIENCE FOR STD IX STUDENTS

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#### Introduction

Education is one of the most important elements responsible for the progress of society. It is crucial that it adjust to the changes brought about by the information age of today. It is not sufficient to only update and modify the course material for this adaptation to be successful. The introduction of information-resource-based education paradigms is also rather significant. Computer-Assisted Learning (CAI) is one of the instructional strategies that relies on the utilization of information system resources. CAI has existed for over four decades, and its broader application has been made possible only with the appearance of personal computers.

Computer-assisted instruction (CAI) is a teaching approach that employs computers as a learning environment, setting in which learning takes place, which improves the learning time and students' motivation, and can be helpful for students with varying learning paces. Principles of self-directed learning and computer technology were used to create this teaching approach (Hancer & Tuzeman, 2008). "Regarding the organization of the learning process, in CAI pupils are led by the strategy of small (short) steps, i.e. by the methodical approach, receiving regular updates on their personal development, and the teacher's adaptation to each student. In this way, every pupil learns independently, individualized and at his/her own speed" (Pejic, 2006). With the use of CAI, students can assume ever-greater responsibility for selecting, managing, and assessing their own learning activities, which they can engage in at any age, anywhere, and using any method. In short, students are free to choose the subjects and sequence in which they wish to study them (Pilli, 2008). Furthermore, because CAI uses a presenting style that is influenced by motion, color, and sound, it is aesthetically pleasing. Furthermore, by providing competitive opportunities where students' past performance acts as the opponent, CAI attracts and keeps students' attention (Mahmood, 2006). Since receiving rapid feedback stops people from learning topics

incorrectly, CAI also removes misconceptions by doing so. Computer-assisted learning reduces rote learning and allows for meaningful learning (Renshaw & Taylor, 2000).

The use of CAI in biology education has been suggested by numerous scientists, educators, and researchers. Nevertheless, not all biological materials are suitable for use in the CAI application. as noted by Hancer and Tuzeman (2008). Numerous studies that compare the efficacy of CAI to standard teaching paradigms in the execution of various biological materials have validated this. Çepni et al. (2006) examined how students' cognitive domain levels (understanding, comprehension, and application) were affected by the Computer Assisted Instruction Material (CAIM) on the subject of photosynthesis. According to the study's findings, students in the CAIM group performed noticeably better overall on the overall accomplishment test than learners in the conventional group. At the level of factknowledge, both groups received about the same amount of points, according to an analysis of the students' performance on personal cognitive domains. However, students from the CAIM group outperformed students from the control group in the areas of understanding and applying knowledge. In contrast to conventional instruction (CI), Yusuf and Afolabi (2010) examined the effects of individualized computer-assisted instruction (ICAI) and cooperative computer-assisted instruction (CCAI) on the biology performance of secondary school students in the areas of food chain, food web, energy flow, nutrient, movement, and pyramid of numbers. It was discovered that students who were resolved to CAI, either individually or in collaboration, generally performed better than their counterparts who were also resolved to CAI. When comparing the effectiveness of ICAI with CCAI, the CCAI approach resulted in noticeably higher student accomplishment.

Katircioglu and Kazanci (2003) coordinated the persuasiveness of the group completing a personal task with a programmed multimedia presentation and the group with teacher assistance in addition to the slide show during the application of the tutoring unit view and touch at the higher education studies. The study's findings demonstrated that students in the experimental groups outperformed those in the control group in terms of success. When implementing the A Cell teaching topic in the first grade of secondary school, Efe and Efe (2011) investigated the efficacy of CAI in comparison to traditional teaching. Students that were taught with CAI software, which included numerous simulations, performed better when it came to solving tasks across six cognitive domains. The authors stressed that since this kind of software uses visualization to help students better understand the structure of cells, the roles of different cell organelles, cell division, the movement of food, water, and oxygen through the cell membrane, active and passive transport, and

membrane potential, Students ought to be able to use it to learn the content. Furthermore, as stated in Hancer and Tüzeman (2008), CAI is superior to the traditional approaches in terms of enhancing students' academic growth in the recognition of the following lessons: Reproduction of plants and animals (Soyibo & Hudson, 2000), Increase and Inheritance of Alives (Yoldas, 2002), Floral Plants (Akcayet al., 2005), and Digestion and Excretion Systems (Pektaset al., 2006). However, certain research in biology education have shown that traditional instruction is more effective than CAI in delivering lessons. These studies include Cell Division (Owusu et al., 2010), Photosynthesis and Introduction to Genetics (Morrell, 1992), and Enzymes (Güler & Saglam, 2002).

#### **RESEARCH DESIGN**

Regarding the written exam, a pre-test, post-test, experimental, and control group design was used. Additionally, for oral testing, only designs for experimental and control groups were employed.

#### **POPULATION**

The study's target demographic was all Gujarati-medium schools in Gujarat State that were part of the GSEB.

#### **SAMPLE**

The study's sample consisted of students from Government Secondary School, Kuntalpur's Std. IX. 40 students from one of the Government Secondary School, Kuntalpur's Std. IX sections served as the experimental group, while another 40 students served as the control group.

#### **DEVELOPMENT OF CAI**

#### SAMPLE LESSONS

For this study, seven standard IX lessons from the Gujarat Secondary Education textbook were chosen. The chosen lessons were:

- 1) Apni Aasapaasna Dravy
- 2) Apni Aasapaasna Dravyo shudh che?
- 3) Parmanuo Ane Anuo
- 4) Parmanu Nu Bandhan
- 5) Sajivono Paayano Ekam

- 6) Pesheeo
- 7) Sajivoma vividhatta

The following factors were taken into consideration when developing the CAI for the aforementioned lessons.

#### 1) TEXT, GRAPHICS, MUSIC COMPOSITION

Composition of the text, graphics, and music took into account the degree of complexity of the scientific terms, and the Shlokas were translated and elaborated upon as necessary. Appropriate animation, music, and images were included. TANPURA's background music was played.

#### 2) PRESENTATION IN DIFFERENT MODES

The investigator used several modalities, such as background music, graphics, appropriate images, animation, and content-related sound effects in each frame, to make the prepared CAI presentation successful.

#### 3) EASY TO LEARN AND PLEASURE TO THE STUDENTS

The classes' content and delivery methods were attempted in a way that was both engaging and successful, making it simple for the pupils to understand and enjoy them. The investigator took into account the seven lessons given to Std. IX pupils in order to build CAI. While creating the CAI, the researcher had the following goals in mind.

- 1) The pupils will be capable of independently reciting Science Slokas.
- 2) The pupils will be capable of independently translating science slokas.
- 3) All challenging terms will have definitions that the students can explain.
- 4) Science will be interesting for the pupils to learn.
- 5) Grammar will be simple for the pupils to comprehend.
- 6) The pupils will be able to gain self-assurance in science.

Based on the principles of programmed learning material (PLM), the CAI was established. There are many minor frames in the developed program content. One portion of the topic's substance is included in every frame. A question and its response pertaining to the material provided come after this. The term stimulus-response refers to this content-questions-answers process. The whole CAI was created in this manner. Two topic matter experts were shown this program content. For verifying it in terms of the subject's content and the material's linguistic clarity. In order to verify the methodical flow of teaching and the creation of frames, the two program learning specialists received the material. Lastly, the experts' recommendations were taken into consideration.



Following the finalization of the programming content, it was converted into a CAI using computer software. The investigator has selected the FLASH, COREL-DRAW, FRONT PAGE, and PAGE MAKER software for programming purposes. The following features led to the selection of the FLASH, COREL-DRAW, FRONT PAGE, and PAGE MAKER.

- 1) It is easy to use and based on Windows.
- 2) It allows for the vibrant images, graphics, and figures that add attention to the material.
- 3) Simulator and animation ease, which facilitates content comprehension.
- 4) The ability to display several windows on the screen simultaneously, which facilitates the researcher's ability to provide both the text and the figure simultaneously.
- 5) It facilitates the storytelling as well.
- 6) It also helps with color and background effects.

All of the program's frames have been input by the researcher into the data files. In order to create the many calculations and graphical content presentation required for CAI, images and symbols from the Corel Draw front page were utilized. The investigator has attempted to make the CAI more engaging by utilizing these graphics.

Two specialists in computer programming and CAI were presented the produced CAI in order to assess its presenting style, graphic clarity, coherence, and technique. The experts' recommendations were taken into consideration. The experiment was conducted using the modified CAI.

#### **TOOLS AND TECHNIQUES**

To achieve the aforementioned goals, the following technologies were created:

#### 1. Achievement test:

The investigator created both written achievement exams. Lesson-by-lesson, the written assessments covered the material covered in the classes.

#### 2. Reaction Scale:

The researcher created a five-point reaction scale Strongly Agree, Agree, Disagree, Undecided, and Strongly Disagree to examine how the students responded to the generated CAI, goal 3.

#### **DATA COLLECTION**

Written pre-tests were distributed to the experimental and control groups in accordance with the course. Following the CAI's installation, the 40-student sample was brought to the computer lab. Two students were instructed to work on each computer at a time and study using CAI because there were only thirty computers accessible and in operational condition. For forty days, they received instruction from CAI. Students in the experimental and control groups were given written post-tests lesson-by-lesson following the conclusion of CAI. Additionally, the researcher administered the Reaction Scale to the experimental group.

#### DATA ANALYSIS TECHNIQUES EMPLOYED

- 1) The "t" test was applied to examine the significance of the difference between the mean gain scores on the written test for the experimental group and the control group.
- 2) The "t" test was applied to examine the significance of the difference between the experimental group's and the control group's mean scores on the oral post-test.
- 3) The Chi-square test was used to compare the observed frequencies to the anticipated frequencies for each statement of the response scale with an equal probability.

#### IMPLICATIONS OF THE STUDY

- ➤ The CAI created by the science researcher for science students in grade IX can be used extensively.
- The instructor ought to receive training in creating and applying CAI on Science.
- These computer software CDs can be attached to the text books using the different text book boards.

#### SUGGESTIONS FOR FURTHER STUDIES

There are some suggestions for further studies as follows

- ➤ It is necessary to build CAI for teaching science subjects at different standards.
- ➤ It is possible to build CAI with the use of other computer programs.
- > Software packages must be developed in order to train instructors to teach science.

#### **CONCLUSION**

According to the researcher's study, the CAI she created for a few chosen chapters in class IX Science was successful in raising student achievement and eliciting responses. For science to be revived, such software must be created and extensively used. Large-scale efforts at all educational levels are required to make such efforts.

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