Conclusion and Suggestions
Chapter VII

CONCLUSION AND SUGGESTIONS.

The analysis of the data can be summarized into four categories as follows:

1. The attitude of the school personnel toward audio-visual aids.

2. The understanding, knowledge, skills, and ability of the teachers in the utilization of audio-visual aids.

3. The management of audio-visual service in the schools.

4. The classroom conditions and the facilities for the use of audio-visual aids.

(*) THE ATTITUDE OF THE SCHOOL PERSONNEL TOWARDS AUDIO-VISUAL AIDS.

From the responses of the three groups of school personnel—the school principals, teachers, and students, it can be concluded that all the three categories of the respondents have shown desirable attitude towards audio-visual aids. They realize the value of audio-visual aids as an effective means to better learning. This is a healthy sign and will help in introducing audio-visual aids in the teaching-learning process in the secondary schools in Thailand.
(2) THE UNDERSTANDING, KNOWLEDGE, SKILLS AND ABILITY OF THE TEACHERS IN THE UTILIZATION OF AUDIO-VISUAL AIDS.

The data suggests that the school principals are not properly trained in the use of audio-visual aids. A reorientation programme for them is still necessary so that they may guide the teachers and help them to introduce new techniques in their teaching. An investigation shows that 33% teachers have yet qualified themselves in audio-visual education and the remaining 67% are still unqualified. The audio-visual materials which are frequently used by a majority of the teachers are mostly simple aids such as chalkboard, picture, real object, specimen, and map. But this does not mean that they usually use such audio-visual aids effectively. It is easily noticed that some teachers do not know the recent techniques of chalkboard utilization, most of the teachers have never used such chalkboard devices as template and stencil. The teachers should whenever necessary use audio-visual aids in their teaching. The proper use will depend on several factors: good knowledge about audio-visual aids, the availability of these aids, and the time when they are to be used. The responses of the teachers to the questionnaire show that they would prefer to use audio-visual aids if they have longer class periods and if there are proper facilities in the classrooms. Reducing teaching loads will offer the teachers more time to prepare audio-visual materials and use them effectively. This may also
necessitate eliminating crowded contents of the subject-matter to provide facility for the effective use of audio-visual aids in the teaching period. Besides this, facilities for the display of audio-visual materials and projection of film strips, films etc. should be provided in the classrooms.

3) THE MANAGEMENT OF AUDIO-VISUAL PROGRAMME IN THE SCHOOLS.

The data suggests that all the teachers are favourably inclined to the use of audio-visual aids in the teaching process implies the need for a good audio-visual service programme in the schools. From the frequency of the utilization, we can see that beside the chalkboard, other aids are used very scarcely. Even pictures, which are used as the second frequently-used aid, are used by merely 33% of the teachers. It is clear, therefore, that the other aids are not used frequently. The reasons as suggested by the teachers in not frequently using these aids are quite revealing. A majority of the teachers (24.4%) refered to the lack of time to prepare audio-visual aids for their use, the other 15.5% stated that they are not provided by the schools. This implies that the schools do not provide even simple aids. This does not mean that the schools have to purchase every individual audio-visual materials, but this shows that the schools do not have a proper system of provision and production. Some of the teachers as suggested by their responses prepare audio-visual materials and meet the cost themselves. This discourages them in the preparation of audio-visual aids.
The other reasons mentioned by the teachers such as the lack of time to use whatever aids are available in the classrooms, the faulty distribution system, a lack of knowledge in audio-visual area, and the financial difficulties are secondary problems. However, if proper use of audio-visual aids in the school is aimed at, these problems have to be solved.

If the teachers understand the worth of audio-visual aids, they will use them. If audio-visual aids are available to them or if they can prepare them out of the funds provided by the schools, they will surely use more aids. The responses of the teachers that they will use audio-visual aids if the schools provide them and offer them proper facilities is a proof of their willingness. The responses suggest that there is no proper audio-visual service programme in the secondary schools in Thailand. From the author's experience of the conditions existing there and also from the suggestions put forward by the teachers, the following are the shortcomings which hinder the proper use of audio-visual aids:

1. The schools audio-visual service system is not properly organized. The service, provision, production, and distribution of audio-visual materials are not based on sound principles and without an understanding of the goals for the effective use of such aids.
2. Well qualified persons are not appointed to take over the responsibility of the school audio-visual service programme.

3. The audio-visual aids have usually been purchased or procured without consulting the teachers who use them.

4. The schools do not assist the teachers in providing such aids that are not available in the schools by borrowing, renting, or contacting some other sources. It is usually the teachers responsibility to procure the aids themselves.

5. The schools do not provide any financial support or facilities to the teachers in the preparation of aids.

6. The schools do not provide the teachers sufficient information regarding the aids available there or new materials added to the old ones. Not even relevant literature concerning audio-visual materials is provided to them.

7. No programme of the integrations of audio-visual aids in the curriculum of different grades and subjects have been attempted.

8. Books, magazines, reports, and other reading materials concerning audio-visual aids are scarcely kept in the school libraries.

9. There is no regular in-service training programme for teachers in the field of audio-visual aids.
4. THE FACILITIES AND THE CONDITION OF THE CLASSROOMS.

Generally, the schools provide the bulletin and chalkboard area, natural ventilation system, hooks, and light bulbs for their classrooms. Other necessary facilities are rarely provided. The classrooms are still traditionally planned, there is a lack of display and projecting areas, teachers' and students' working areas, sink, storage, light and sound control etc.

The typical character of the classrooms in the secondary schools in Thailand is a rectangular room of about 8 x 10 metres, attached to the verandah, the inner wall is composed of solid wall and two doors, the outer wall consists a row of windows. The two rear walls at the front and the back of the classroom are left blank. There is chalkboard and a small area for bulletin board at the front wall. The floor of the classroom is wooden or cemented, the same is the case with the ceilings. Some of the classrooms have only a small blank space besides the chalkboard.

The seating arrangement is also a traditional i.e., there is a table and a chair for the teacher at the front, near the chalkboard. The students' seats are of single-seat type and not easily moveable, occupying the whole of the classroom, or may be a small area of 2 to 3 metres left at the front. Thus there is hardly any space left for activities. No class room has an area for the preparation of audio-visual aids either by the teacher or the students.
Projection of pictures, etc. are not possible because there is no screen, no light and sound control. If the doors and windows are shut in order to darken the room, there will be the problem of insufficient ventilation, besides the arrangement of the seats is not suitable for the purpose. If effective learning through projection is aimed at, the seats have to be properly arranged.

It can be concluded that the classrooms in the secondary schools in Thailand are not suitable for effective use of teaching aids, or other activities. This does not imply that improvement is impossible. Efforts can be made to improve the existing conditions of the classrooms.

SUGGESTIONS.

Having studied the problems facing the use of audio-visual aids in the secondary schools in Thailand, the following suggestions may be helpful in the solution of the problems.

(1) To improve the attitudes of the school personnel towards the use of audio-visual aids.

The school principals, teachers, and the students are in favour of the use of audio-visual aids in classroom teaching as shown by their responses to the questionnaire. This use can be more meaningful if regular inservice training programme is organized in the schools or by audio-visual aid centres for the principals and the teachers.
(2) To improve the understanding, knowledge, skills, and ability of the teachers in the use of audio-visual aids.

This can be done by:

1. Making audio-visual a compulsory course in every teacher-training institution. Every prospective teacher should study about audio-visual aids and their utilization as a proper method of teaching. Importance should be attached to the use of audio-visual aids in practice teaching at the pre-service training stage. During the training period the student-teachers must have full opportunity to use audio-visual aids and prepare their own materials for use in the classroom. The curriculum in audio-visual course should follow the actual needs of teaching in the schools.

2. An audio-visual library should be established in each school. Important books, magazines, journals etc. should be available to the teachers for ready reference. They should also be aware of the new techniques of audio-visual aids utilization.

3. The Audio-visual Centre, either in the school, established by the Ministry of Education, or by the teacher-training institutes, should take the responsibility of helping the teachers and solving their problems. These centres should act as guides and offer the teachers practical and valuable suggestions.
4. The Ministry of Education, with the co-operation of the curriculum specialists, and the audio-visual experts, should suggest possible means of integrating audio-visual aids in the courses of study of every subject and at every grade level.

5. The Audio-visual Centres as mentioned above should produce the teacher's handbooks on the use of audio-visual aids to be made available to the teachers free of charge. These handbooks will guide large number of teachers in the proper use of aids in the teaching process. Besides these handbooks, they should distribute other valuable documents concerning audio-visual aids to the teachers regularly.

6. The in-service training in audio-visual education should be made a regular feature for the teachers. This should be organised by the Ministry of Education, the universities, the Audio-visual Centre, or the teacher-training institutes. A survey of the teachers' requirements should be made before planning the training programmes. This programme should be relevant to the actual needs of the teaching situations and should be planned for two levels, one for the school principals and the school administrators, and the other for the classroom teachers. Every school should offer sufficient opportunity to its teachers to receive this training.
The training programme should be well organised. The trainees should be divided into small groups, each group should be provided with sufficient facilities in using audio-visual materials and equipment. New materials or equipment or new techniques should be made known to the teachers. There should also be enough books, magazines, periodicals, and pamphlets for use by the teachers. The training programme should be composed of both theory and practice, the practical side should be given greater importance. The preparation and utilisation of inexpensive aids should be included in the programme. Demonstrations by the classroom teachers should also be arranged.

7. In each school, the teachers may be encouraged to use audio-visual aids effectively. The following methods are suggested by the author.

THE SCHOOL AUDIO-VISUAL LIBRARY.

The audio-visual library may be a part of the school library. It should be provided with books, magazines, periodicals, concerning audio-visual education and aids, the synopses of researches and recent developments in audio-visual field, and reports giving the results of the evaluation of various aids and the community resources available to the schools.

Bulletins and handbooks should be distributed among the teachers free of charge in order to provide them up-to-date information and guidance.
The information should, however, be properly selected. Quality rather than quantity should be the criterion of selection of such materials.

TEACHERS' MEETINGS.

The principal or the school audio-visual director should try to stimulate teachers' interest in the improvement of the teaching methods and invite the teachers to meet regularly in order to discuss their problems and help them in solving their problems.

DEMONSTRATIONS

Regular demonstration and exhibition of new audio-visual equipment should be organized in each school. The teachers who are interested and have organizing capacity should be given the responsibility of organizing such demonstrations.

EQUIPMENT CLINIC.

Equipment clinic should be maintained in the schools which should be managed by trained technicians. Some of the teachers should also be helped in the operation, proper handling and maintenance of sophisticated equipments.

SCHOOL VISITATION.

The school visitation is another way to augment the teachers' knowledge and understanding of audio-visual education. The teachers of one school should visit other schools in order to observe the techniques of teaching by other teachers in school classroom situations. The teachers should be encouraged to discuss their problems with their colleagues.
The following suggestions based on the ideas given by the respondents and the author’s experience will be helpful in providing audio-visual aids in the schools:

1. The manufacture of simple equipment and materials on a large scale can be undertaken by those who are engaged in manufacturing scientific equipment for the schools. This will help in reducing the cost of the equipment. The Audio-visual Department of the Ministry of Education should contact the commercial companies and provide the incentives in providing aids commonly required by the schools.

2. Each school should prepare a list of various sources that provide audio-visual aids and pass them on to the teachers.

3. Information about the new materials or equipment should be given to the teachers. The teachers should be encouraged to preview and evaluate the aids and try to use them to make their teaching more effective.

4. The schools should prepare a file of data on teachers’ reaction and appraisal of audio-visual aids in consultation with others who may be more experienced.

5. The schools should give the teachers information of audio-visual libraries in the towns where they can find appropriate reading materials. It should also be the duty of the schools to provide sufficient audio-visual
materials, equipment, and facilities to meet the needs of the teachers, either by purchasing, borrowing, renting, or producing them.

6. The teaching load of individual teachers should be reduced to leave them sufficient time for the preparation and use of audio-visual aids.

(3) The improvement in the management of audio-visual programmes in the schools.

1. The principal in each school should be made responsible for audio-visual programme. While individual schools should help themselves to run the audio-visual programme, it should also try to contact and get assistance from bigger organizations such as the audio-visual centres established by the Ministry of Education, by universities, or by the teacher-training institutes. If such audio-visual centres are not available, several schools in the neighbourhood may establish a centre themselves.

2. There should be a systematic audio-visual service in each school. The programme must be planned for a whole term and executed according to the plan. There must also be a regular critical appraisal and evaluation of the programme in order to know the shortcomings in the existing programme.

3. An ideal plan is to have an audio-visual centre in each school. This centre should take the following responsibilities.

a. To provide audio-visual materials, equipment, and facilities to meet the needs of the teachers.
b. To distribute the audio-visual aids to the teachers when required. The distribution of aids should as far as possible avoid re-taping. It should be the teachers' responsibility to return the aids borrowed to the centre after use. It should be the duty of the centre to maintain the aids in the good condition ready for use whenever required.

c. To repair the defective ones.

d. To assist the teachers in operating such equipments that are complicated, for this purpose the schools should appoint a technician who would not only run the machines but be able to repair and keep them in good condition.

e. To survey the community resources and inform the teachers about those resources that can be utilized in teaching.

f. To evaluate audio-visual materials and equipment in terms of curricular needs and approved instructional practices.

g. To survey the physical facilities of the classroom and help in their improvement for the effective use of audio-visual aids.

h. To arrange meetings, conferences, or workshops for the teachers to discuss the problems connected with the use of audio-visual aids.

i. To appoint a committee of interested teachers to select audio-visual materials and equipment for the schools. No aid should be purchased unless recommended by the teachers and the school board.
j. To keep constant contact with the teachers and the curriculum experts in order to determine the actual needs of audio-visual aids in the various teaching situation.

k. To maintain a school workshop for the preparation of aids. The raw materials, devices, and facilities should be available in the workshop.

l. To arrange in-service training programmes for the teachers.

m. To provide facilities for research evaluation programme in order to determine the effectiveness of various audio-visual aids used in the classroom and their correlation with the curriculum. Much of this research should be carried out in actual teaching. The results of the research should be made available to the teachers.

n. To recommend to the school board the funds required for audio-visual service programme in the school.

4. The school must provide sufficient fund out of the school's annual budget which should be sufficient to maintain old equipment and to purchase or hire new ones, this should include funds for the improvement of classroom facilities. The allocation of the fund must be the joint responsibility of all those that are directly connected with audio-visual service programme.

5. The principal should encourage the teachers to inform him of their audio-visual aid requirements which should as far as possible be met out of the school funds. The principal should also try to make a regular appraisal of
the result of audio-visual programme in his school. Only thus he can be sure that the school funds are being used effectively.

**AUDIO-VISUAL CENTRE.**

The establishment of large audio-visual centres will prove to be of great help to the audio-visual service programme to the schools. These centres can be established by any organisation such as the Ministry of Education, the universities, the teacher-training institutions, even several schools in the neighbourhood combined together can establish one such centre. At present there are several audio-visual centres in Thailand, especially in Bangkok. These centres are established by the universities to serve various faculties of the universities; and by the teacher-training institutes to serve their teaching staff and teacher-students. None of these centres at present help the secondary schools except their own practice or demonstration schools.

There is only one Audio-visual Centre in Bangkok, established by the Ministry of Education, which serves a few schools in Bangkok, but this area is too large to be served by one centre alone because the number of schools in Bangkok is too large. It is suggested, therefore, that several audio-visual centres be established and maintained by the Ministry of Education spread all over the country.

The responsibility of the audio-visual centres has to be enlarged to cover the following:
i) Providing more copies of audio-visual materials and equipment to meet the needs of the schools it serves. The stand-by equipment must also be provided to the schools in case the existing equipment is out of order.

ii) Releasing the articles and reports concerning important development in audio-visual field prepared by professional committees or by individuals. The audio-visual centre has to encourage such persons to prepare more materials. The printing and distribution should be the responsibility of the centre.

iii) The audio-visual centre in consultation with specially trained architects should offer suggestions for the improvement of the school buildings for better utilization of audio-visual aids. The centre may arrange for annual conference of the architects, the educators, the school administrators, and the audio-visual experts which should suggest ways to correct, adapt, or plan the classrooms, install electric outlets, control light and sound with their cost, etc. All such information should be included in a bulletin that should be distributed to the schools.

iv) The centre should provide handbooks, bulletins, pamphlets, or catalogues to the schools in order to give accurate and up-to-date information about the available materials the centre can supply.

v) In order that the required material is delivered to the schools in time, the centre should have its own conveyance. This will help speedy delivery of materials.
vi) Small schools cannot afford to purchase expensive equipment, the centre should lend these equipment on a long-term basis to such schools as the frequent transportation of expensive equipment may not be feasible.

vii) A survey of the community resources providing rich informations and experiences to the students, including materials, places, and people should be made by the centre. This information should be communicated to the teachers.

viii) The centre should help prepare teacher manual, guidebooks, or handbooks.

ix) The centre should co-operate with the curriculum workers for the first step selection of audio-visual materials used for teaching, eliminating those that are not useful, and guide the teachers in the selection and use of these materials.

x) The centre should help in the continuous evaluation of the audio-visual materials in terms of curriculum objectives, and help conducting the experiments and researches which may contribute to curriculum revision.

xi) The centre should supervise and give assistance in the use of audio-visual aids in the classrooms. This may be accomplished by working directly with individual teachers, working indirectly through the supervisors, school administrators, or school co-ordinators, or working with the in-service training programme.
xii) The centre should help in the production of simple audio-visual aids in the schools. This may be done through planning, guiding, giving suggestions, or providing guiding books.

xiii) The centre should try to influence commercial companies to produce audio-visual aids which are suitable to educational needs, and should try to secure sufficient state funds for purchasing or preparing audio-visual materials which are not available in the market.

xiv) The centre should manage meetings or conferences of grade and subject teachers from various schools. In these meetings, the centre should suggest the basic techniques of utilizing and producing audio-visual aids suitable for various grade and subject.

xv) It should be the duty of the centre to provide in-service training facilities in audio-visual education for various levels of school personnel such as the school administrators and the teachers in order to give them better understanding, knowledge, skills, and ability in the administration, utilization, and production of instructional aids.

These responsibilities may seem too heavy a burden but with determination this can be achieved gradually if properly planned.

(4) Suggestion for the improvement of classroom conditions and facilities.

In the newly constructed classrooms there can be no difficulty in providing the basic facilities for the proper display and effective use of the
audio-visual materials and equipment. The architect should help in planning the classrooms so as to provide such facilities.

For the modification of the existing classrooms, desirable changes are suggested below:

i) The existing chalkboards should be improved. They should be repainted with the best quality of chalkboard paint. A rail or hook should be provided above the chalkboard for exhibiting maps, charts, etc. If the chalkboard area is large, there should be a curtain ready to cover it when the sound projection is performed, in order to cut out the sound reverberation. The area under the chalkboard can be made a storage area by adding a storage cupboard or shelf therein.

ii) Bulletin board should be placed on both sides of the chalkboard. If the chalkboard is narrow, a large bulletin board could be placed above it. If necessary side walls may also be used for bulletin boards.

The back wall should usually provide cupboard for storage. If the storage cupboard occupies the whole length of the back wall, bulletin boards may be fixed at the cupboard doors. This space is not only properly used for the display of useful materials but will also serve the purpose of eliminating sound reverberation at the time of sound-projection and record playing.

It is not difficult to construct a bulletin board, a sheet of plywood, celotex or soft-board can be a good material. Masonite sheet with small holes is good for displaying three-dimensional objects.
iii) Sound-absorbing materials such as acoustic board or acoustic tile should be installed on the hard walls and the ceiling of the classroom. If the school budget allows, the hard concrete floor may be covered with asphalt tiles, but it will not be necessary if the floor is wooden.

iv) Storage cupboards should be placed under the windows throughout the whole length of the classroom. The width of the cupboard should be 30-50 cm. The cupboard should be divided into various parts with various characteristics, some having covers, some without covers, some with glass covers, and some with drawers, which will be useful for the storage of various types of materials. A built-in cupboard of 20 x 90 cm. could be useful for storing maps, charts, and graphic materials.

v) The area at the back of the classroom should be adapted into a reading corner, with one or two tables and few seats if the area allows. If the area is limited, there can be a bookshelf fixed to the wall.

vi) The verandah wall could also be used for display cupboard. The cupboard should be of a transparent type, with glasses on both sides, its size should be about 0.50 x 2.00 m.

vii) A folding projection screen should be placed either above the chalkboard or at one of the corners of the front wall.

viii) Electricity outputs of the double-female type should be installed at both the front and back of the classroom, they can be fixed on
the wall or on the floor. A new electricity line with switch to control light point will also be required.

ix) Two curtain rails along the whole length of the window area should be fixed in each classroom. One should be 12" away from the windows, and the other 18" away. A thick, dark coloured curtain for the inner rail and a thin one at the outer rail will be required. The lower edge of the curtains should be about 12" from the floor with arrangements to keep them in place.

x) There should be no ventilation holes at the lower end of the walls as this will make the controlling of the light difficult. Any ventilation required should be of the movable louvre type, made of wooden sheets.

The following are the illustrations of a traditional classroom, a classroom after adaptation, and an ideal classroom designed by the author, together with an illustration of facilities needed in a classroom.
AN ORDINARY CLASSROOM

SOURCE AMORADHAT, K., A STUDY OF SCHOOL DESIGNS FOR THE USE OF AUDIO-VISUAL AIDS.
AN AMENDED CLASSROOM ACOUSTIC TILES ARE FIXED AT THE UPPER PART OF THE WALLS AND AROUND THE CEILING.

- A FLOOR-FIXED FEMALE OUTLET
- A WALL-FIXED FEMALE OUTLET
- A LIGHT SWITCH

SOURCE: AMORADHAT, K. A STUDY OF SCHOOL DESIGNS FOR THE USE OF AUDIO-VISUAL AIDS.
A NEW DESIGNED CLASSROOM

SOURCE AMORADHAT, K., A STUDY OF SCHOOL DESIGN FOR THE USE OF AUDIO-VISUAL AIDS.
A knowledge of the classroom facilities required for an effective use of audio-visual aids can provide teachers with (i) an idea to remodel the classroom on modern lines;

(ii) Teachers can assist in planning or re-modelling classrooms in their schools;

(iii) Teachers can use these ideas as primary yardsticks to assess the classroom facilities. If such facilities are inadequate, they may be able to influence the school administrators or school boards to get the classrooms improved. Since it may often take a long time to get the classroom improved, many teachers should use inexpensive, relatively easy, and temporary adaptations in making their rooms suitable to the instructional needs of the students. They should analyse facilities available, decide what is wanted, and try to make up for these inadequacies in a variety of ways. It is possible that an active learning situation may be only partially stimulated because of lack of proper facilities and necessary planning. The school boards should ultimately provide new classrooms or remodel the old ones to provide adequate facilities for teaching on modern lines. Only thus teaching and learning can be more effective.