Attitudes to Educational Television with Special Reference to Educational Closed Circuit Television

Thesis presented for the Degree of Master of Philosophy of the University of Aston in Birmingham

R G Archibald (1978)

As educational institutions increasingly use media and methods based on educational technology it was decided to approach the attitudes of users by two stages. (1) Following an extensive enquiry into available literature and discussions with authors the need for an enquiry into attitude shift, was undertaken. The basis for this was the thesis by Shaw (1971) "Attitudes of Teachers and Students to Schools Broadcasts" where an examination of BBC and IBA programmes and the pedagogic attitudes of teachers and students was undertaken. A replication of the original study was planned and carried out. The results showed little shift in users attitudes to broadcasts and familiar shortcomings were highlighted. (2) A recurring need was seen for more liaison with programme makers and a desire by teachers and students to produce their own material with small scale closed circuit television equipment. This formed the basis of the second phase of the study with an attitude questionnaire plus ancillary information supplying data for subsequent analysis.

The major findings were:

a) There is no statistically significant shift in attitude between Shaw's population (1971) and the present sample.
b) Liaison with network producers is still too remote.
c) Network programmes do not consistently meet the requirements of individual teachers in the classroom.
d) There is no marked shift of attitudes between trainee teachers and their serving colleagues with both populations generally favourable to cctv.
e) Both male and female teachers and students are favourably inclined towards cctv.
f) Both at primary and secondary level teachers agree that cctv. is a valuable teaching tool.
g) VTR/VCR editing facilities and associated courses are needed for both primary and secondary teachers.
h) Older teachers (those with over 21 years experience) have more positive attitudes to cctv than many of their junior colleagues.

Further enquiry could concentrate on:-

a) The need for programmes devised and produced by pupils for peer viewing.
b) The factors influencing the attitudes of older teachers towards cctv in schools.
c) The effects of 'normal' and 'abnormal' viewing habits by pupils of network evening programmes on conventional learning in schools. eg. current affairs broadcasts and entertainment programmes.
d) The ongoing need for the monitoring of attitudes and usage of educational broadcasts with regard to the advances in hardware technology and information access.

KEY WORDS : Educational closed circuit television.
Attitudes to educational television.
School broadcasts.

ATTITUDES TO EDUCATIONAL TELEVISION WITH SPECIAL REFERENCE TO EDUCATIONAL CLOSED CIRCUIT TELEVISION

A Thesis presented for the
Degree of Master of Philosophy (Ed)
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Birmingham

R.G. Archibold

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However it must be to the "samples" that I am most indebted for their willing co-operation in supplying answers both verbal and written to my many questions.

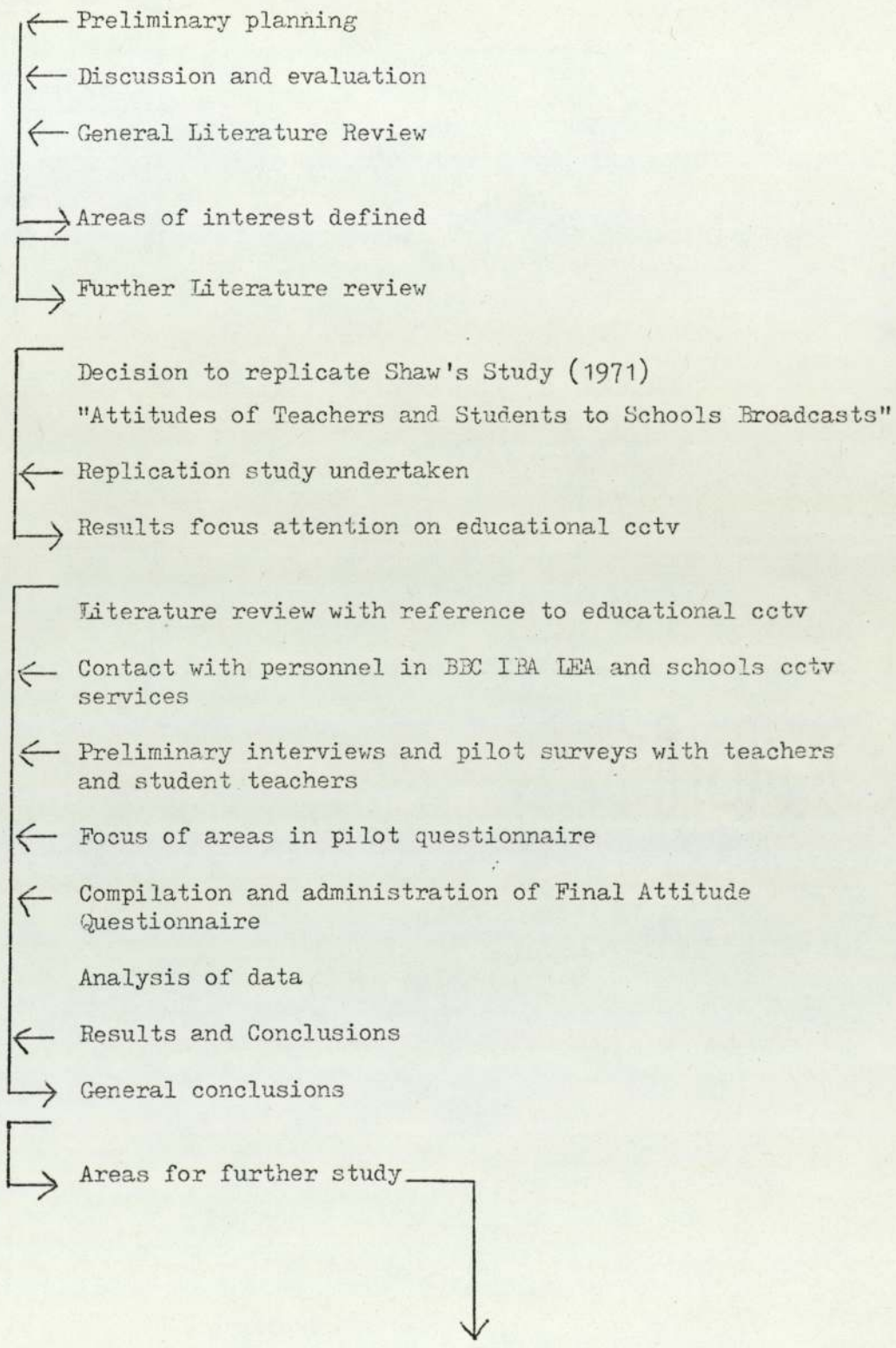
FOREWARD

Education, being largely though not entirely a matter of communication, has in the end given most new technologies of communication a trial in the classroom.

The decision to introduce a new thing in education is only in part a fully conscious and deliberate decision. It is seldom the result of careful analysis and systematic testing. It is almost always the other way round. A new thing is introduced and, if it survives a period of crude trial and error, it may then be submitted to rigorous scientific research.

Allan T.S.
Aspects of Technology VII 1973

ENQUIRY OUTLINE AND PROGRESSION



CHAPTER 1

INTRODUCTION

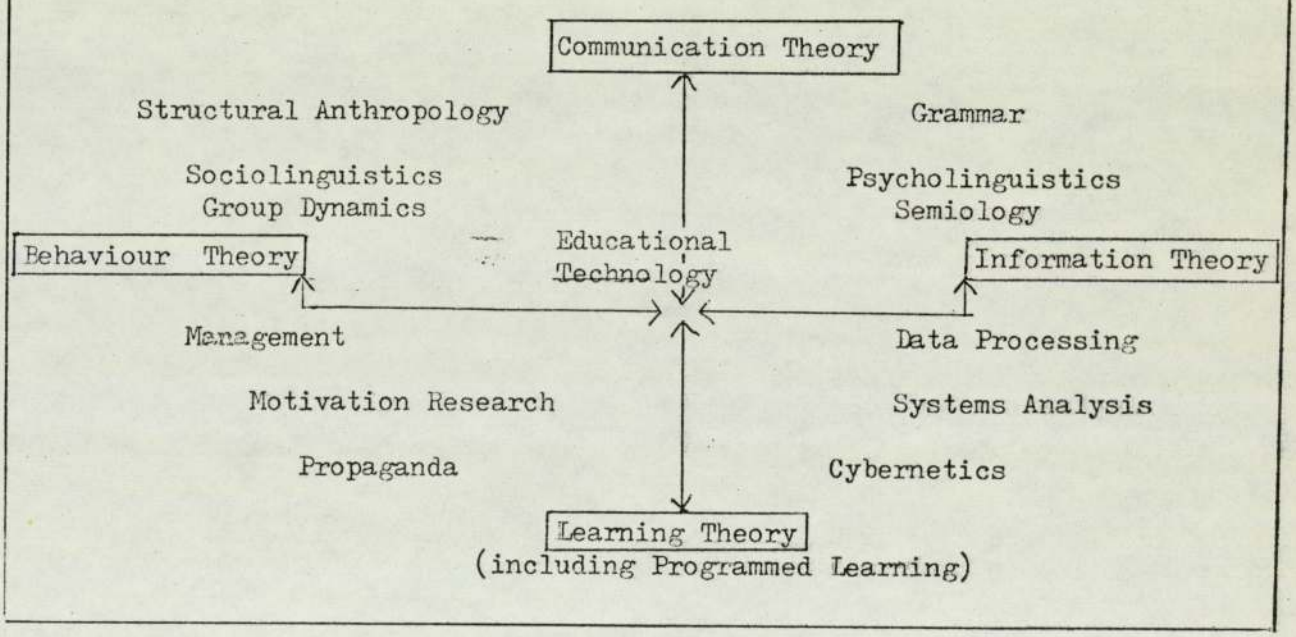
Educational Technology is concerned with the application of new media, often of an audio-visual nature, to teaching and learning situations. Within establishments of higher education it is recognised as a discipline in its own right where, due to the increasing demands made upon earlier methods and concepts an ever changing scene is in evidence. Among many areas of questioning is the problem of attitudes held by teachers and student teachers in relation to the demands of the technology to which they are exposed.

In order to segregate and examine more clearly the modes of educational technology authors have tended to isolate particular items without reference to a total over-view (eg. Hancock A. (1972) Gibson T (1969) and Unwin D (1969). Consideration of the areas of influence demonstrates an interaction of parts which, moulded into a whole, may be presented as a model of educational technology dimensions (Fig.1).

This model, based on the divisions termed Learning Theory, Behaviour Theory, Communication Theory and Information Theory shows how the other areas feed and support these four dimensions. As with many models concerned with educational technology and educational television in the research reviewed the static nature of the two dimensional display can disguise the dynamic

interplay of components. However, the importance of William's model is that the isolation of the area termed "Educational Technology" may be seen not as a peripheral factor but a major focal point for the combination of the theoretical, composite areas.

Fig. 1 The Interplay of Theoretical Elements essential to an Educational Technology



(After Wiliam A R 1972)

It is not surprising that a need for understanding and application of concepts and materials associated with educational technology is a view put forward by practitioners and authors alike. For example Ryder (1972) sees the inclusion of technology, particularly

the hardware aspects, as an integral part of the class teacher's methods of information dispersal to pupils.

One of the most comprehensive attempts to illustrate the range of educational technology hardware has been made by Dureau (1969) where the hierarchical arrangement of items is based on criteria relation to provision and origination.

Fig. 2 "A Survey of Audio Visual Equipment and Methods" (Based on Dureau in Unwin, 1969)

1	Manuscript notes of lecturer or participant, duplicated notes.
2	Wall displays, spare specimens, models.
3	Epidiascope material, printed textbooks, programmed texts.
4	Audio tapes, disc recordings, audio language laboratories.
5	Film strips, transparencies, overhead projection material.
6	Augmented language laboratories.
7	Silent films (including cassette loop format).
8	Sound films with optical (in-built) soundtrack.
9	Progrmamed texts in machine formats.
10	Radio-vision (broadcast sound with "in-house" visuals).
11	Video tape recordings (C.C.T.V. studio productions with outside broadcast, telecine and effects facilities).
12	Audience response systems incorporated in the instruction delivery.
13.	Line television programmes (using C.C.T.V. services).
14	Computer based instructional systems.
15	Sound broadcasts (via BBC).
16	Network television broadcasts (BBC and ITA).

The direction of arrow denotes an increase in installation and running costs, difficulty of provision and potential size of audience.

Examination of the display plus the author's knowledge of the range of media reveals considerable overlap between the items noted. The electrographic equipment at the more costly and sophisticated end of the continuum incorporates most of the preceding media and methods both audio and graphic.

A closer look at educational television broadcasts shows that, in spite of its position with regard to cost and provision within Dureau's hierarchy, its usage in schools has increased.

School television began in 1957 after an initial BBC.closed circuit experiment in Middlesex in 1952 while Associated Rediffusion Ltd began programmes in the South of England in the same year. By 1959 the experimental period was over and the BBC announced its decision to continue and expand the service with 24 broadcasts (plus repeats) transmitted per week. In 1958, 1,100 schools were on the BBC Register for Television rising to 26,000 in 1972 and now stands at over 32,000.

However, although provision of programmes appears substantial these cautionary comments on their usage are put forward by the Controller of BBC. Educational Broadcasting,

> "As far as national television in Britain is concerned it is now clear I think, that at the school and college level what is required is far greater will and skill in the use of educational television. In some schools it is undoubtedly used to very great advantage and with great imagination. It is a resource to be used to suit the needs of the children and the particular learning situation. Equally, it is clear that in many places the potential of the material and understanding of how it can be used is not being achieved. What appears to be required in national terms is the development of a training programme both at the initial level and in term of "in-service", which ensures that teachers and lecturers consider the use of television with a much more informed awareness of the materials that are available" (Grattan, 1973).

This series of statements by one of the most influential men in educational broadcasting adds weight to the author's concern with regard to missed, under used and wrongly applied teaching strategies using television and assisted in highlighting areas discussed in the main body of the study .

As Shaw (1971) states, there are constantly being developed within the realms of higher education new courses to familiarise students with the wide range of modern media available for school and other educational uses. Such courses explore the theory and practical applications of such devices as tape-recorders, programmed learning machines, computer education, photography, projected aids, reprographic machines, closed circuit television, network broadcasting and the implications of resource learning centres to individualised learning trends.

The widespread usage of closed circuit television within Universities and Colleges of Education is reflected in the

information contained in the "Directory of Members" published by the National Educational Television Association (See pages A118 - A120) plus articles in the Association's Journal of Educational Television related to case studies and user comments.

Thus, although there is now quantitative evidence with regard to numbers of users of educational broadcasts the way in which programmes are integrated into the teaching methods is still open to question.

By using the study by Shaw (1971) as a base together with its 1977 replication it is hoped that if changes in attitudes and usage have occurred during the intervening period these will be identified and examined.

With the increase of closed circuit television as a specialised branch of television the second attitude study carried out in 1977/78 aims to provide evidence of teacher and student attitudes which could highlight present areas of strengths and weakness. It also aims to provide evidence for further areas of research beyond the scope of the present study.

CHAPTER 2

LITERATURE REVIEW

Investigation of the literature used as a basis for this study has, inevitably, required reading from diverse areas within the field of educational television.

To draw this coverage into a more wieldy form the literature review has been divided in the following manner:-

Teacher attitudes and enquiries into educational television.

Production and usage of educational television programmes.

Educational Closed Circuit Television - Presentation and production

Educational Closed Circuit Television - Effectiveness and Attitudes

Teacher attitudes and enquiries

To cover the range of enquiries undertaken during the last two decades a chronological overview has been adopted. The progression gives a view of the areas and methods studied by the most important researchers during this period. An exemplary study of children and the television they view has been provided by Himmelweit (1958) with the following conclusions regarding future educational policy:

1) Only six per cent of teachers claimed to make regular reference to television and it was hoped that more teachers would bring television into the classroom.

2) There was a need for the interchange of ideas between teachers and broadcasting companies.

3) There was a need for more longitudinal research. Research is needed into the follow-up of individual programmes and the careful testing of conditions under which the interest aroused by television can be translated into action. Himmelweit's research suggests that television companies should investigate their own output in the educational sector. (This they now include as a matter of course).

Skornia (1960) examining the attitudes of teachers to television suggests that involvement in television teaching is seen as superior by many of his subjects but that with more instruction in the handling of the ever widening range of technological tools available this emphasis could and should be diminished.

Using a semantic differential mode of enquiry Westley and Jacobson (1962) attempted to see if television posed a positive threat to conventional teachers in the classroom. The dimension of "challenge-threat" was isolated as a unique factor in teachers attitudes to broadcast television while results showed that, using overt responses under test conditions, most teachers stated they felt unthreatened by the television approach and presentation of information. However, it should be noted that by simply avoiding contact with the medium "threatened" teachers could avoid broadcasting pressures entirely.

A follow-up study by Westley and Jacobson (1963) appeared to suggest that the classroom teacher was seen as superior to the television presenter in the eyes of his pupils.

In an extensive study by Becker (1964) evidence was produced to suggest that innovative teachers using television were also most likely to be those engaged in other new forms of instruction then available eg. Nuffield Science schemes. In a part of his study dealing with the comparison of film and television usage in schools the author noted that teachers thought the former to be less up to date than the latter medium. Also teachers gave the impression that many films were not suited to their needs and were troublesome to use and obtain while television tended to have more continuity and was aimed at more selected target audiences.

Those in favour of films said they could be fitted into a course at the most appropriate time, they could be pre-viewed, shown in entirety or in segments and stopped and re-run for specific needs.*

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* With the advent of the video-tape recorder the recording of "off-air" material can be accomplished with the ease associated with the more familiar tape-recorder thus enabling teachers to perform all the tasks required by teachers favouring film inserts in lessons.

Many of the secondary teachers interviewed by Becker indicated that pressure in schools geared to conventional teaching for examination results allowed limited time to "enjoy" the peripheral nature of the television output.

Research into schools television by McQuail (1965) was an attempt to elucidate the following four problem areas:

> The attitudes of teachers to television and their responses to the medium,
>
> The effectiveness and usefulness of current broadcast output,
>
> The problems raised by the replacement of the live teacher by the television set.
>
> A general enquiry into audio visual communication.

As a result of viewing selected series on television the verdict of "no change" was given with regard to teacher and pupil attitudes eg. to the United States of America after viewing "The Story of the USA". This result suggested that television had no power to shape attitudes was, at best, surprising. However, the difficulty of precise statistical correlation between control and participant groups could not be surmounted and this threatened the conclusions from the study.

Weltman (1965) suggests that the teachers attitudes to school broadcasting should be attuned by careful selection from the range of media available. The following results also appear:

a) the interchange of ideas is more readily accomplished through person to person contact rather than via the black and white image on the screen.*

b) The young and less mature pupils are more hindered by the lack of personal contact than are the older more mature pupils and adults.

Weltman also suggests that the screen teacher may be no more skilled, or better qualified than the class teacher. Provided the class teacher knows this in advance then he may well feel justified in dispensing with the television lesson. If however, the screen teacher is teaching the same syllabus he may think his pupils will benefit from seeing another person dispensing information with a wide range of broadcasting devices to make the task more stimulating to the listeners.

Weltman makes points in favour of television; for example, through the medium it is possible to limit ones choice to the very best presenters available and these may possess a degree of charisma not found in the majority of conventional teachers. A large increase in the size of a viewing group does not adversely affect the impact of television communication whereas large classes may create communication problems in conventional instruction.

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* With the advent of colour transmissions this area could need re-researching particularly as the school audience is increasingly able to view in colour both at home and in the classroom.

Statistical evidence of the effect of programmes on children was asked for by Daines (1965) after his study into feedback methods of teachers with regard to educational broadcasts. Based on four years of research Daines concluded that teachers' value judgements and impressions of television programmes are unreliable guides and only reliable statistical evidence gained from classroom enquiry could be accepted as the basis for further decisions. However, given the wide range of variables and the necessity for controlled conditions of learning such a statistical approach has made little headway.

Daines findings, based on extensive surveys within secondary schools also emphasised the questionable feedback techniques employed by the network companies in relation to their educational television output. (Shaw (1971) takes up this aspect and suggests that the unreliability of teachers value judgements in connection with television programmes might produce variability in teachers' attitudes to television and school broadcasting in general).

The importance of attitudes to teaching methods incorporating television teaching was illustrated by the commissioning of a study by the I.B.A. in 1968. Briefly, the study suggested that parameters investigated should include the following:

1) What proportion of schools have television sets and the reasons for non-possession. (This is to be an annual enquiry).

2) What proportion of schools having television sets use them and to investigate the reasons for non-usage.

3) The measurement of the total size of the audience of teachers for each school television programme and the reactions of the teachers to the programmes.

4) A measure of the total size of the audience of pupils for each school television programme and the reactions of the pupils to the programme.

However, enquiry among staff who would carry out these directives suggests that total commitment would prove extremely costly and both original data and updated returns would need individual evaluation.

Mann and Brunstrom (1969) point out that poor attitudes to audio visual instruction develop in teachers because of the problem of equipment provision during training and later, in the schools. However, since that study, personal contact with many colleges with advanced audio visual centres suggests that provision, subject to economic limitations, is implemented as standard policy.

Elliott (1969) concluded that teachers attitudes to educational television are based on external factors namely:

Time and effort expended in terms of preparation and follow-up.

Crowded and otherwise satisfactory viewing conditions.

Insufficient accompanying software to programmes available.

Rigid and crowded timetables (especially in secondary schools).

These factors were arrived at by investigating whether teachers were on the same "visual wavelength" as their pupils and that if a teacher does not accept television as a serious medium then the teacher cannot effectively use it in school.

Seven dimensions were investigated:

1) Personal attitudes to television

2) Personal attitudes to educational television

3) Training in the use of educational television (broadcast)

4) The preparation needs of teachers prior to viewing a broadcast

5) The follow up needs of teachers after viewing a broadcast

6) General difficulties encountered by teachers.

7) Further areas suggested by the teachers in the survey

Briefly, questionnaire responses showed that average teacher home viewing period was 13.4 hours per week while pupils investigated averaged 16.5 hours per week. It would appear from the statistics that Elliott's pupils were viewing considerably more adult programmes than were the teachers in the survey (the times and content of viewing was not investigated). 40% of teachers admitted a viewing bias towards BBC programmes and in the classroom felt unthreatened by the medium of television. 25% of the teachers interviewed admitted that they needed

assistance in dealing with educational television while 75% believed they were using the programmes effectively. However, Elliott was dubious of this claim and personal examination of this aspect after liaison by the present author with BBC and IBA personnel suggests that the perception of effective usage by teachers is in reality over-rated. Often those teachers who were most experienced treated broadcasts with passing interest and many of the younger, less experienced staff only achieved success during a series on infrequent occasions.

Shaw (1971) also states that headmasters and teachers expressed the same concern in the secondary sector with examination preparation leaving limited time to "enrich" the pupils' understanding of topics via the broadcasts available. A recurring theme still evident from discussion with headmasters by the present author. Dannheisser (1978) notes the use of an appropriate Appreciation Index for attempting to find out from children their rating of programmes correlated to an adult parallel experiment. With reference to samples and potential validation it appears that the results are significant enough for regular Appreciation Indices to be undertaken on a National Scale thus providing at least a basis for further insight into the attitudes of pupils to their preferred television programmes. The difficulties of providing an appropriate Appreciation Index for schools programmes have yet to be surmounted.

Searle (1976) investigating children's perception of television linked to school viewing states that due to limited research no firm conclusions can be drawn with regard to the actual retention, perception and discrimination of young viewers. However Doyle (1973) points to such children as being less able to focus attention and resist distraction although the present author is not convinced this is universally accurate.

Production and Usage

When examining the use of television in an educational context reference to the nature of the recipients has been repeatedly considered (Barkington 1965 and Forgus 1966). Hordley (1975) using a total of 500 young children attempted to evaluate children's responses to live and televised presentations of 3D objects. Of great interest is the conclusion that clue decoding of the information is, in Piaget's terms, not "staged" but "age" related. Further evidence of the decoding need is presented by Mee (1970) thus raising questions of training in pictorial decoding as well as the conventional learning associated with reading. It is significant that Hordley concludes "the message for those who produce films and television programmes for infant schools would seem to be to curb their enthusiasm for unnecessary shot changes . . . . . and where such shot changes are essential to bring them about by zooming rather than cutting". This need to establish and pace instructional material is seen as an

inherent difference between such programmes (at all pupil levels) and the conventional output from network sources.

Further investigation of the pupil's exposure to educational television is documented by O'Bryan K. (1977) where the examination of eye movement allied to learning and production techniques is seen as further evidence of the need for specialised production in instructional television. Studies by O'Bryan K and Silverman H (1972) Briggs (1973) and O'Bryan (1975) indicate that eye movement patterns are related to presentation methods and thus effect the total learning which occurs. (For Eye movement marker information see Boekhout R E (1975).

Becker (1964) noted the recurring weakness in preparation and follow up of material viewed by classes; there was little free exchange of ideas within the classroom and little attempt to integrate the pupils fully into the television courses, even teacher encouragement to participate was lacking. However, one finding was that those teachers who were enthusiastic about television were also keen to use other types of appropriate audio visual aids and were mainly those teachers who had been exposed to such technology during training or had attended organised courses in these areas.

Branwell (1960) finds that lack of training and fear of technology has contributed to the low level of usage of audio visual aids within schools and states "the purpose of television is to

enrich teaching and not to replace the teacher. It should be able to bring eminent men and women into schools and transport children across deserts and through mountains in observation cars". Although this may have been an admirable sentiment in 1960 the more sophisticated application of television production to educational goals has provided not only enrichment possibilities for pupils but at the present time can provide whole courses and sources of unique information only communicated via the televisual process eg. Open University and specific examined courses at Further Education and secondary school levels.

This increased sophistication of approach and usage is part of a fusion process which Branwell (1960) hoped would occur. Namely, that school offers a classical written literature while the home concentrates on a popular audio visual one, a fusion of these two worlds is needed, he states, perhaps via a link with schools television and childrens television programmes*.

Pursaill (1967) using a survey of 29 schools discovered that 30% of primary and 10% of secondary teachers used television series in their teaching. Factors noted as being the most relevant to the successful use of television appeared to be:-

*Enquiry at the BBC and IBA Educational Policy committees has shown that such a fusion is welcomed by producers and others involved in the making of programmes. Hall D (1977) sees a positive alliance in media studies as does Buscome E (1974) in an IBA Fellowship Report.

A strong awareness of the powers of stimulation possessed by television.

A regular and extended follow-up of broadcasts.

The encouragement of spin-off practical/project work among pupils.

While individual teachers have responsibility with regard to the application of televisual stimuli in their classrooms the school itself has a total responsibility in this field. Wittich and Schuller (1967) state this to be the case especially in the preparation and selection of school broadcasts and in ensuring that the necessary equipment is available for use. They state that the inherently useful information contained in schools broadcasts throws a responsibility on the teacher to provide the support material and follow-up procedures essential for maximum success. (But teachers interviewed by the present author pointed to difficulties which they perceived as insuperable eg. timetable commitments and economic stringencies).

Further, Crispin (1970) states "the quantity and quality of the teachers use of national service of school radio and television are of direct professional interest and responsibility to all engaged in teacher training." Fawdry (1970) comments that in the seventies the quality of schools broadcasting outstrips the quality of its use in schools. He also found that where a secondary school possessed a reliable video-tape recorder there was a substantial increase in broadcast usage. By providing such a facility Shaw hints that:-

> "bringing television into line with radio with its tape recorder facility video tape recorders in schools will prompt deeper exploration than has yet been made of possible ways of using television . . . . ."

On a larger scale Wykes (1970) argues that a National Centre for Educational Television would help focus attention and research on important aspects of television within the changing classroom situation. Personal communication with Wykes confirms this belief*.

Hames (1972) surveyed the usage of educational television with particular attention payed to the viewing methods employed in schools, preparation and follow up modes and the skills needed by the teacher to maximise the input potential of the medium. Production methods were noted with reference to music, captions, storylines, protractions, closing style and presentation techniques. Hames also states "Even cold viewing, that is seeing an isolated programme without due preparation can produce results better than we deserve. It should be possible to arrange for the follow up to be made on several fronts.

i) Visual or tactile material

ii) Conjectural or discussion group

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*At present the most authoritative body active in the production and usage of closed circuit educational television programmes is the National Educational Closed Circuit Television Association. (see pp 118 - 120 Appendix)

iii) Writing vocabulary or imaginative work

iv) Tape recording or dramatic work

v) Programmed or work book scheme

Further "Every tutor should be a teacher of television. Television of tomorrow will be part of a systems approach - in some instances it already is". The following statements sum up a dynamic approach to the medium of educational television.

> "Excitement is an essential ingredient in education. If programmes are not exciting they fall short. With the immense resources expertise and opportunity for editing every programme should be a launching point for an orbiting mind".
>
> "Television can only make direct use of two senses and with its use of sight and sound it must embrace and engage as many other communication areas as it can".

To enquire more fully into the use of "launching points" Hayter C.G. (1974) compiled a report called "Using broadcasts in Schools" which was commissioned by the IBA Educational Advisory Council and the BBC. School Broadcasting Council. The aim of the project was described in the following terms:-

1. To examine the effects of the optimum use of broadcasting resources on teaching and learning in schools which are provided with a reasonable and adequate level of equipment for such use.
2. The schools concerned will examine their curricular aims and needs and plan their use of broadcasts after consideration of the wider range of available teaching resources.
3. Arising from the continuous assessments undertaken by the schools themselves there will be evidence of the level of

effectiveness if using educational broadcasts, with a number of descriptive case studies.

The 106 schools which continually returned reports during the course of Hayter's enquiry led to an accumulation of evidence regarding the use of broadcasts. The reasons include such statements as:

a) "Broadcasts are an additional resource, unique in form and up-to-date in character."

b) "Broadcasts are capable of creating an atmosphere, stimulating imagination and provoking ideas".

c) "Some series are of direct help to teachers lacking specialist knowledge and skill in certain areas, particularly in music and mathematics."

d) "Broadcasts are one of the cheapest resources available!"

During the course of his study Hayter noted that rethinking on the part of teachers as to how they might best use broadcasts increasingly involved them in consideration of the educative process within the classroom and the school. As a result, broadcast programmes tended to become an integral part of the curriculum. Choosing educational material and deciding how it can be most effectively used are important elements in training. Using broadcasts involves both choices and decisions in a special way. The television contribution is essentially different from the rest of the teacher supplied information and stimulus and

forces the teacher to control the teaching-learning situation with greater care. In addition, the use of broadcasts within the context of the class aims and school's objectives creates, according to Hayter, "an in-service training situation within the school, the natural and most effective centre for it".

The conclusions of the study are that the value of the broadcasts has been progressively recognised; the difficulties of effective broadcast usage has stimulated rethinking of the curriculum within schools; ancillary aids have been added to the store of resources within schools to enable better follow-up and preparation to take place. Finally, points which all users of educational broadcasts have regretted on occasions, "The use of valuable broadcast material is seriously restricted by existing rights regulations in that recordings are available for only a limited period and can only be used in the place where they are made. The schools would also benefit if consideration would be given to the possibility of schools using recordings of relevant "non-educational" programmes broadcast during school hours and during the evening."
(See Crabb G (1976) and Whitford Report (1977)

Much of the literature reviewed has been based on investigations in the field of attitudes to specific school subjects as taught by televisual methods and also comparisons between conventional

and televisual disemination of information. Shaw (1971) states in his study that teaching via television has been accepted as a viable if not universal method of instruction by teachers at both junior and secondary levels. Schramm (1962) states:-

> "The average student is likely to learn as much from a television class as from ordinary classroom methods: in some cases he will learn more, in some less, but the overall verdict has been "no significant difference".
>
> "In general, if motivation can be kept up, a child can learn as much from television as from a face to face lesson".

Further examples include Barrington (1965) who reports no significant difference in attainment between the two modes of teaching as do the Department of Education and Science experiment results of the 1960's. American researcher Erikson (1960) using adult students as his subjects also found no significant difference between the two modes of instruction based on examination results.

However Carnoy M (1975) is unimpressed with Chu and Schramm's review of television versus conventional teaching and suggests that the relevant comparison should have been with alternative teaching technologies more readily available.

Somerby (1950) and Sene (1971) commenting on standards for television receivers suggest that the resolution of television images is dependent not only on receive design (both physical and electronic) but on the juxtaposition of brightness and

contrast linked with the level of ambient illumination.

Research concerning the size of the screen seen by viewers suggests there is no appreciable improvement in learning if programmes are viewed on larger screens (26"). Carpenter and Greenhill (1958) for example compared groups of students who received face-to-face lectures and magnified visuals on television with another group receiving a conventional course plus normal television information. There was no significant difference between the groups.

The use of colour in schools television broadcasts has been established as a policy by both IBA and BBC sources but there is at present only limited evidence concerned with the gains of learning from colour compared with black and white productions. Link (1961) found no significant difference as did Vander Meer (1954). Small scale experiments conducted by the author in 1976 suggest that, as Chu and Schramm outline, "Color may bring about more favourable attitudes towards instructional television . . . . . also we must not overlook the possibility that in specific learning tasks color may play an essential part". In the eyes of the pupils educational television is awarded a status equivalent to children's magazine programmes - thus a learning set is easier to maintain in the viewers. (Results evaluated from written comments of 56 middle school pupils after watching three programmes recorded and relayed in colour covering a geography topic.).

Chu and Schramm (1967) note "Repeated showings of a television programme will result in more learning. But a teacher-directed follow-up, where available, is more effective than a second showing of the same programme". This is bourne out by findings in the study by Hayman and Johnson (1963) and the Denver study of 192 schools (test population 6,000).

Similarly pupils will learn more from educational television under motivated conditions than under unmotivated conditions, Gropper et al(1961) used science programmes to verify the above. Using reward strategies Greenhill and McNiven (1956) also produced results confirming the motivation dimension.

Feedback

Another principle that learning theorists see as of major importance is that of "feedback". The television monitor cannot converse with the audience in the way a teacher may. Therefore a limitation of verbal and non-verbal cues from the audiences must, vis-a-vis a lecture, inhibit the "natural" flow at the continuously varied pace of a well delivered lesson or lecture. For the presenter, while shooting is in progress, has little or no idea how the material is being accepted or rejected by his listeners. Some experimenting with feedback via verbal and written questions (Bligh D 1972) has taken place. In Chu and

Schramm (1969) the authors state, "From the student point of view learning from television means he is unable to raise questions, to ask for clarification or benefit from a free discussion with the instructor or with other students. If we regard learning as a process of reinforcing the correct responses instructional television does not provide the ideal learning situation even though the student thinks he has no questions and needs no clarification. Therefore wrong learning may be reinforced by assumed knowledge prior to clarification by face to face contact".

Feedback has been examined by Bretz (1967) where a remote camera and talk-back system was placed in the viewers room allowing the instructor to gain knowledge of viewers reception and reactions to his information, allowing him to alter the delivery as the "programme" progressed. A similar audio system was tried by Wolgamuth (1961) plus a group in the studio, another having a signal system and the fourth without any contact with the presenter. Analysis of results indicated there was no significant learning differences between groups nor were there any significant differences in attitudes towards the course.

Gropper, Lumsdaine and Shipman (1961) attempted to overcome lack of feedback to the presenter by revising programmes in the light of previous viewers comments. Results showed that the second form of the programmes resulted in significantly higher learning

scores by comparable viewers. However, at higher levels of learning the lack of feedback can retard learning of complex data as shown in Almstead and Graf (1960), Wilkins (1962), Westley and Barrow (1959) and Greenhill (1964).

If all the above areas of enquiry and concern are to contribute to a positive improvement in programme formats then assessment and feedback devices are necessary in more sophisticated forms. With liaison between production and reception ends of the service, changes could allow improvement in presentation and production rather than the frequently adhered to method necessarily being regarded as the "right" or "only" way of presenting such material: (see Annett 1969, Bligh 1971 and Beard 1970).

CCTV Presentation and Production

Following the build up of video equipment in schools during the 70s a move away from simply recording material "off air" to actual production has taken place. Equipment has been provided for permanent installation, See Brown S (1975) Hornsby J (1977), and also supplemented by access to Teacher Centres and LEA central loan facilities - see Webster B (1977) Bratt C (1977) However, it is important to emphasise that no ideal is put forward but rather the views suggest a flexible and local build up of resources meeting present and projected demands within the

user spectrum.

The provision of equipment appears in the Statistical Digest 1974 of the Schools Broadcasting Council where a bias towards secondary schools is noteable (see below). Grant F (1976) points to the continuing need for video tape recorders but laments on the lack of teacher usage of programmes even when such machines are available.

Fig. 3 TV Provision in Primary and Secondary Schools

Primary Schools with TV sets	89%	
" " " Colour sets	3.1%	
" " " video tape recorders	6.1%	1974 data
Secondary Schools with TV sets	95%	
" " " colour sets	10%	
" " " video tape recorders	34%	

It is noteworthy that Brown and Thornton (1963) commented on the "excess of equipment over its planned usage" and suggested that many cctv set ups were "pre-occupied with trying to find uses for it". Review of the literature suggests that at present this is not a true picture at least in the UK where integration of cctv is actively encouraged (Williams (1972). Individual items and their relative importance have been scrutinised in Hancock (1971) Gibson (1970) and Williams (1972). Suggestions for kit based items are put forward by Rawnsley (1970) - also

usage in Cyphert (1967) and Olivero (1964) with VCR. and video discs as alternatives in recording in Kellaway (1972).

Gibb G O (1970) stresses the need for careful editing of video recordings and the importance of retrieval and updating schedules. Beard R (1970) notes "what evidence there is suggests that too much detail or recording too condensed in content militates against sound learning" as also found by Erskine C A & O'Morohoe CCC (1961) and Wallis, Duncan & Knight (1966). Cartmell A E (1971) examining the abilities of teachers on presentation of information noted the improved results from using video methods for instructional purposes.

It was noted during preliminary interviews for the initial and cctv attitude studies that the content and in particular the methods of presentation were of prime concern to both students and teachers. Therefore presentation should be, "clear in terminology and coherent in organisation; with an introduction, overview, key terms explanations, propositions, and a satisfactory termination (Hancock 1971). The following is offered as a guide for cctv programme production:-

1) Open via "teasing shot" thereby releasing presenter from a customary "welcome" on each occasion.
2) Rapid involvement by quick establishment shots leading to first major point.
3) Attention maintained via "dramatic" progression through peaks in programme.

4) Climactic sequencing leading to major points.

5) Closing with either a review or leaving audience with a problem/comment for take-up in the next programme.

Further detailed accounts of techniques are examined in Adams C (1953), Bretz R (1962) Diamond R A (1964) Millerson (1974), Gibson T (1970) Stasheff E & Bretz R (1962) and Zettle H (1965).

Collins M T and McIntyre C J (1961) noted that learners preferred simple production techniques rather than a sophisticated and complex variety of shot composition. Schwartzwalder J C (1960) states "Students prefer a systematic order of shots rather than a random choice during production". This is however difficult to verify and almost impossible to obtain during a live interview/discussion "take".

Production techniques suggested by Kay P R (1977) for capturing the dynamic activities of the classroom are an extension of the need to liberate the cctv producer from the confines of the model lesson in a studio situation. As such they are effected and, bearing in mind the contortions of the earlier Gibson Mini Studio layout, are capable of recording acceptable information. However the question arises that if an intensive medium such as television also excludes contextual information then the picture of classroom activity will be either

a) biased to the needs of the acceptable production requirement

or b) become a series of details which are difficult to build into an acceptable representation of the classroom activities.

Jamieson G H (1976) noting television as an aid to observation comments "Its main advantages over personal observation lie in its storage capacity for visual and auditory information and in the preservation of facts. But as an observational device, it is not independent of human control in its selection of place, orientation and focus".

Thus a personal bias emerges, and, with editing a second source of selection and bias, the final result may present information of questionable use. Careful programme introduction and commentary may help to bring the viewer into closer harmony with the screen activities but visual in-put may be too strong a factor for aural comments to affect.

Closed Circuit Television - Effectiveness and Attitudes

Handleman S D (1960) using comparative study techniques notes the range of attitudes in teachers towards instruction by cctv Whiting G C (1961) sees a correlation between achievement and attitude in students taught by cctv. methods. Those with negative attitudes recorded low scores and those with no marked pro- or con- attitudes to cctv (high scores). As Whiting states, "it is not that

favourable attitudes are always correlated with effective learning but that favourable attitudes are not always necessary for it" (also in Merril I R 1965, pp 233-245).

Although his comments are aimed at college cctv. Leedham (1969) provides a useful pointer to cctv appraisal when he states, "Perhaps the most useful appraisal of an educational cctv system to do with teacher training would be to test its flexibility. If it failed to measure up to the preliminary test the remainder of its potential would be suspect".

Concerning the integration of cctv into the total resources available to the teacher Williams stresses the need for a central location in a resource area as do Hawkins (1970), Coppen (1969) and ILEA (1968).

The use of cctv. in direct learning was studied by Moss J R (1973) when assessing the learning experience of precise student target groups. Although the experiments were directed towards motivated participants eg. computer science students, - there was noticed a strong need to "sell" the approach to the users. Invitation to refer to video material was not seen as a strong enough orientating device. The integration of video into the course plus the use of self created scales for criticising the method by students produced clear evidence of the worth of cctv. It was stressed that cctv can:

1) Help train students to use material more critically and thus more effectively.

2) Help tutor and student diagnose a) faults in material presentation
b) strengths and weaknesses in students' ability to use material.

3) Improve tutor/student relationships.

4) Suggest varying ways of presenting material via cctv for prescribed target audiences.

5) Examine the learning experiences and therefore plan a more efficient use of material by individuals.

The above points although related to the controlled conditions available during the experiment have since been shown to relate to other courses.

CHAPTER 3

SECTION I Shaw's thesis - basis of the replication study

After extensive enquiry the basis for the replication study was taken from Shaw's enquiry into the attitudes of teachers and student teachers to the use of broadcasts within schools. Shaw's study was completed in 1971 and it seems probable that changes in attitude that may have taken place during the past half decade could be detected through a re-run of the questionnaires and the collective additional data. Such changes could thus be a basis for further insight into present needs and future trends associated with broadcast educational television leading onto investigation of more specialised usage of the medium eg. in a closed circuit capacity.

From an analysis of the media distribution within 25 schools it was seen that radio and television was utilised by most schools; this plus comments received from teachers, furthered Shaw's desire to investigate the attitudes of the teachers using radio and television. The inclusion of student teachers in the study was seen as valid as this would form a link with training and cover a wide spectrum of personnel including those who had pursued specialist courses in educational technology (certificate standard specialist level).

Shaw continues, "If broadcasting was used extensively then it would be interesting to see just how favourably disposed teachers were towards its use. It would also be useful to discover what factors, if any, influenced attitudes towards the media and in what direction".

As the students in the colleges would, when qualified, be teaching in schools well provided with equipment then it was of interest to see which courses were undertaken and whether these had any effects on the attitude of students. A comparative study could be undertaken between the older teaching practitioners and their younger trainees. These points when examined led to the design of Shaw's enquiry.

Attitude Scale

A search was made of literature and research to find an existing scale which could be used, although Shaw and Wright (1976) and Coppen (1968) provided useful pointers no scale was forthcoming. Hence, a scale had to be constructed. After considering various forms of scale Shaw decided to employ an equal-appearing interval scale based on Thurstone and Chave (1929).

The sample of teachers used in the Shaw study

As Shaw had to use a sample of teachers from two different local authorities care was taken to assess the similarities of the two groups. On the basis that Shaw had taught in both areas it was

noted, "the opinion has been formed that the availability of equipment in schools within the two authorities is provided with about equal generosity and there should be little difference between them in the opportunities given to teachers for using radio and television".

No information was given with regard to age, qualifications, experience and responsibilities of any of the teachers selected. The only criterion seems to be that they were either teaching in primary or secondary schools. No knowledge was gained from the sample regarding the position, size or milieu of the schools in which they were teaching although Shaw does state that the locality of the schools was known to the writer and, "as far as possible teachers were distributed in schools situated in a wide variety of social backgrounds". However, no clarification of division criteria was apparent in the study. It may be significant that no independent schools were included in the study and that both authorities from whose areas the samples were drawn were operating a scheme of comprehensive secondary education and both were under the aegis of the same political party.

The Student sample used in the Shaw study

The 200 students all attended a large college of education situated near London. 100 students had completed a course in

educational technology the others had not commenced their course.

The course was a curriculum course eventually undertaken by all students being well organised and staffed by well qualified staff supplied with necessary hardware and led by a qualified, experienced and capable head of department. Shaw notes that the course included the study of closed circuit television audio-visual aid workshop sessions, photography, reprography, programmed learning methods and study of school broadcasting with particular reference to educational television.

Each student studied all aspects of the course, received similar instruction as far as feasible and was known to have completed in full the broadcasting section of the course (curriculum section not monitored).

Students attended the course in groups of 30 and the attitude scale was administered to four groups after completion of the course. 120 questionnaires were completed but only 100 were retained, presumably by random choice.

It was possible for Shaw to administer the questionnaire to the 100 students who had not started their course at a single sitting but, as these were first year students their choice for sample purposes appears a little dubious compared with the more mature

educational technology course students. However, as all students within the college appear to have undertaken the educational technology course soon after arrival this factor may not be of major importance.

Shaw's Methods of Analysis

Raw scores were obtained from the sample of 400 students and teachers and these represented individual scores on the attitude continuum as determined by their completion on the attitude to broadcasting scale (Thurstone construction methods).

The 100 students who had not started the course also completed the equivalent form of the scale (Form B) after a period of four weeks thereby producing a total of 100 raw scores.

A product moment co-efficient of correlation was computed on the scores of the equivalent forms to give an indication of the reliability of the scales.

The scores for all students on the initial scale were divided into high scores (67% plus) and low scores (66% and below). The former scores being taken as an indication of favourable attitudes towards school broadcasting.

Shaw states that the chi square test served as an initial analysis of the survey and acted as supplementary evidence to the analysis

of variance. Also using this data cummulative proportions were computed for each statement with the scale and Q values obtained graphically. The final selection of 20 statements was made based on the results of the available judges - 3rd year students. This raises doubts as to the expertise of his "experienced judges" and thus to the fabric of the final questionnaire.

Shaw opts for the parallel or equivalent forms of testing to compute his reliability coefficient using the Thurstone and Chave model noting that since the group is heterogeneous this will affect the reliability coefficient. Thus it is necessary to specify the standard deviations of the scores of the group on which the reliability coefficient was determined.

Examination of Shaw's data showed the difficulty of matching items in each form of the test with the corresponding scale and Q values thus Form B appears not to be equivalent in the strictest sense giving a coefficient ($r = +0.78$) which would be marginally underestimated because of this difficulty.

The forms were administered after a period of four weeks in order to minimise memory and practise effects and results in data from which the coefficient of equivalence was resolved using the formula below ($N = 100$):

$$\sigma x = \sqrt{\frac{x^2}{N} - Cx^2} \qquad \sigma y = \sqrt{\frac{y^2}{N} - Cy^2}$$

$$= 13.92 \qquad = 12.43$$

$$r = \frac{\frac{\sum xy}{N} - CxCy}{\sigma x \; \sigma y}$$

$$= +0.78$$

The formula to find the product-moment coefficient of correlation when the deviations are taken from the assumed mean of the two distributions.

SECTION II Shaw's statement of results

Survey of usage

Schools were asked to indicate programmes regularly watched on television, three secondary schools, although in possession of television receivers were non viewers while one primary school only watched BBC programmes (Results are given in Tables pp121-122 Appendix).

Shaw notes that the most viewed programmes were on mathematics while "magazine" format programmes were more popular than on radio where subject orientated programmes were called for. More BBC than ITA programmes were viewed by the total number of respondents with primary schools viewing more programmes than the secondary schools. Most teachers stated that television programmes were seen as supplementary to their conventional

subject presentations. Television thus was seen as another audio visual aid and used as extra impetus to teacher originated ideas and schemes of work. It was also noted that the television broadcast was an ideal stimulus to class work.

Many radio and television programmes for schools were designed for this approach and use was made of teachers notes with suggestions for programme follow up. A few of the schools used the television programmes to fill gaps in specialist teaching particularly in mathematics and in music. While there were indications that others used broadcasts in equal proportions as supplements to teaching, initiators of spin-off activities and to fill the role of specialist teaching.

Shaw states, "Many (schools) welcomed the opportunity of aquisition or loan of a video-tape recorder and looked forward to the time when video-tape recorders might be inexpensive enough for this to be possible". This was seen primarily as an "off air" recording need not as a potential source of school originated material due to the non availability of cameras and other production equipment (noted during discussions with author).

Fifty per cent of primary schools investigated possessed a special viewing room while this figure rose to sixty per cent in secondary schools. Again time-table difficulties coupled with the lack of video recorders aggravated the schedules preferred by the teachers.

One secondary school that had been supplied with rudimentary closed-circuit television apparatus as part of the Nuffield Foundation project did not view any "off air" programmes in their entirety but only replayed selected parts. As Shaw says, "They thought that school television broadcasts were never completely compatible with the ideas of the school but often used recorded parts of transmissions which they were able to edit". Thus the provision of the video-tape equipment, rare at the time of original study, was starting to be used by the teachers of one school for information abstraction based on teacher needs. It is further suggested that a pool of video-tape recorders could form a loan resource to schools which would help to overcome compatibility difficulties of the early 1970's. Also Shaw notes "it is too early at the time of writing to give an indication of the impact of the new cassette type video recorders". Anticipated change has taken place with new equipment and approaches increasingly interacting with established modes of teaching but, without testing, it is uncertain whether teacher attitudes have also undergone a change. The replication study is aimed at exploring this area of uncertainty.

The study of attitudes of teachers and students

From the raw scores of the students and teachers on Form A of the attitude scale it was clear that high score respondents (67% score or better) exceeded the low score respondents (66% score or below) by the ratio of approximately 4:1. (81% scored 67% or above).

The mean score of the total 200 students and 200 teachers came to 79.5 with a standard deviation of 17.45.

The correlation of the 100 students scores on Forms A and B using a product-moment correlation coefficient was +0.78 which was used as the coefficient of reliability (coefficient of equivalence) of the scales.

As with Form A the results from Form B showed a similar ratio but with a larger bias towards high scoring respondents (86% scoring 67% or over).

The mean and standard deviations of the two sets of scores are set out below with Form A designated X and Form B = Y.

$\overline{X}$ = 79.7 , σx = 13.9

$\overline{Y}$ = 79.8 , σy = 12.4

r = +0.78 (where r = correlation of the two tests).

Using a chi square test on the ratios of scores in the A and B Forms there emerged no significant differences hence there were no statistically significant differences in attitudes between the

two groups. Thereby retaining the null hypothesis, "There is no significant difference in the attitudes towards school broadcasting of students who have completed a course in Educational Technology and those students who had not started the same course".

χ^2 with 1 degree of freedom was +0.72 and not significant at the .05 level.

P lies between 0.30 and 0.50.

The analysis of variance supported the preliminary evidence of the chi square test and showed no significant differences between groups. Similarly there emerged no significant difference between the remaining hypotheses regarding:-

a) the attitudes of primary and secondary teachers towards school broadcasting.

b) the attitudes of men and women teachers towards school broadcasting.

c) the attitudes of students and teachers towards school broadcasting.

d) the attitudes of men and women students towards school broadcasting.

e) the attitudes of students who have taken a course and those who have not taken a course including an examination of school broadcasting.

Thus all the null hypotheses forms are retained by Shaw.

The F ratio for interaction of conditions differences of teachers, students, schools and course with sex of the groups was 0.93 (not significant at .05 level) thus the t test was not needed.

SECTION III Conclusions and Recommentations based on Shaw's study

In the light of the preceeding statistical analyses it is suggested that:-

1) As students come to Colleges of Education with favourable attitudes to school broadcasting then a compatible course is necessary to channel latent enthusiasm during professional training.

2) According to Shaw the course taken by students tested in the study was sound as there was no evidence that attitudes changed in a negative direction after its completion. But such a stand is untenable as there has been no marked reinforcing of already positive attitudes if these existed.

3) "To enhance favourable pre-course attitudes such courses must be of a very high quality with high order demands to prevent negative attitude slip". But Shaw offers no guidelines for such "quality" courses and other experts offer conflicting views.

4) Such a course should be offered in Colleges as a necessary part of the syllabus for the majority of teachers. The supporting evidence from teachers confirms this need and is investigated in the later study (Chapter 5).

5) "Such courses must be adequately equipped and staffed by experts in the field of educational technology". Again Shaw offers no criteria relevant to course designers and the general

terms are open to abuse eg. in the provision of equipment and educational technology theorists.

6) "As teachers show highly favourable attitudes then Colleges could profitably organise in-service training courses to cater for this need". Again Shaw is biased towards a practitioner approach to up-date the users of equipment but the corresponding communications theory has received little attention.

The Schools

More use was made in the primary schools than in the secondary schools of the wide range of schools broadcasts, usually due to restrictive time-tabling in the latter sector. Shaw suggests that an answer to this may be the provision of viewing and listening rooms, a more flexible timetable schedules and a use of radio and television in combined syllabus ventures involving the broadcast companies and examination boards (eg. GCE and CSE level). This could evolve into a "Junior version of the Open University venture". Perhaps, in the present climate of national educational debate, this suggested development exercise is not far fetched. The provision of audio and particularly video recorders is recommended and such facilities would both benefit teachers and learners and provide a store of material usable in other institutions.

Shaw finally observes that:

> "In view of the expansion of local radio (BBC) and the setting up of educational television systems by local authorities eg. in Plymouth, Glasgow and Inner London,

> a comparative investigation into national and local output usage would add a further dimension to teacher attitudes and involvement in programme output. Eg. in the ILEA where local radio(s), national radio and television (BBC) regional television (LBA) and . Educational television exist side by side".

Unfortunately the protracted service offered by the ILEA shows how a combination of capital and running costs plus access to other televisual material can combine and threaten the involvement of teachers in programme production as recently discussed with the Director of the ILEA. ETV. service.

Shaw further suggests that attitudes of children to school and home viewed programmes could prove a subject of investigation. However it is his views regarding taped "off air" and school produced cctv programmes which formulated the enquiry into modern usage. (See Chapter 5.)

Bearing in mind the combination of Shaw's limitations with regard to the original questionnaire design and the sample of judges and respondents the validity of results remains a source of concern. Nevertheless it was to investigate possible changes in teachers' and students' attitudes in the light of revised and improved courses during training that it was decided to employ the Shaw questionnaire as a replication tool.

CHAPTER 4

Replication Study

Before taking up the lines of research suggested by Shaw's findings it was considered necessary, in view of the considerable developments which have taken place in the available technology and training of teachers to re-run Shaw's surveys and questionnaire. This would establish what changes, had, in fact taken place during the intervening 7 years and by conducting interviews with teachers and students would identify new needs, pressures and applications which could be incorporated in later studies (Chapter 5).

I Preliminary Survey Replication

This stage of Shaw's enquiry was to provide a quantitative analysis of media distribution within 25 schools. However within a described geographical area the replication exercise was able to obtain data from 100 schools.

The sample was composed of 50 Primary (Middle) schools in the West Midlands Metropolitan Area and Staffordshire plus 50 Secondary (Comprehensive) schools within the same area. All schools were visited and data recorded over a period of seven weeks in 1977. Primary (Middle) schools included both conventional and purpose built 'open plan' types while the Secondary (Comprehensive) schools also included 'amalgamated' and

purpose build institutions catering for 1200 pupils.

Equipment provision was, in the original pilot study, more readily available in the Secondary schools. This, as seen on Figs 4 and 5,Tables I and II pp 52 and 53 continues to be the case with all Secondary schools having access to radios, televisions (30% colour sets), tape recorders, record players, slide and overhead projectors. Large per centage increases can be seen for still cameras and video recording and production equipment (70% and 50% respectively).

Thus increased provision was in evidence, video equipment being the most notable sector but the attitudes to media usage needed to be examined as in Shaw's original work to ascertain any shifting of respondents along the "favourable - unfavourable" continuum.

II Programme Usage Replication

Here difficulties were experienced in correlating the present output with the programmes watched by Shaw's viewers. However Tables III and IV (Figs 6 & 7) pp 54 and 58 show that general topic, mathematics and music series were considered of most use by Primary schools while these plus science and examination orientated programmes in English and History were watched by secondary school pupils.

As the sample used by Shaw was 25 schools and the replication had access to 100 it was considered the results were less liable

to bias and indicated a user trend more likely to be repeated in other areas of the country.

Individual interviews were also carried out in a semi-structured mode to ascertain that series were watched as regularly as intended and to probe teacher comments about content and presentation for use in the later cctv attitude enquiry.

RESULTS

Fig 4 Table I Equipment Provision in Primary Schools

Item	Primary %		+/- difference %
	Shaw	Replication n = 50	
Radio	100	100	(0)
Television (including colour sets)	92	100	(+8)
Tape Recorder	92	100	(+8)
Record Player	100	100	(0)
16mm projection	14	60	(+46)
8mm projection	14	40	(+26)
35mm projection	100	100	(0)
Overhead projection	nil	30	(+30)
Still cameras	nil	40	(+40)
Cine camera	nil	40	(+40)
Video Tape Recorder	n/a	40	(+40)
Video Camera and production equipment	n/a	30	(+30)

An examination of the data shows an all-round increase in equipment provision with particular emphasis in the supply of 16mm 8mm overhead projectors, still and cine cameras. A substantial number of primary schools also has access to video production and replay equipment not available in the early seventies (verified by personal contact with Shaw).

Fig 5 Table II Equipment Provision in Secondary Schools

Item	Secondary %		+/- difference %
	Shaw	Replication n = 50	
Radio	100	100	(0)
Television (including colour sets)	100	100	(0)
Tape recorder	100	100	(0)
Record player	100	100	(0)
16mm Projection	90	100	(+10)
8mm Projection	70	70	(0)
35mm Projection	100	100	(0)
Overhead Projection	50	100	(+50)
Still cameras	20	90	(+70)
Cine camera	30	70	(+40)
Video Tape recorder	n/a	70	(+70)
Video Camera and Equipment	n/a	50	(+50)

Fig. 6

Table III BBC Television Programmes

Programme	Age Range (years)	Number of viewing schools		Total viewing schools (n = 100)
		Primary (n=50)	Secondary (n=50)	
Music Time	8-9	29 (58%)	0 (0%)	29%
Merry go Round	8-9	38 (76%)	0 (0%)	38%
Look and Read	7-9	35 (70%)	0 (0%)	35%
Maths Workshop 1	9-10	37 (74%)	4 (8%)	41%
Maths Workshop 3	10-11	30 (60%)	13 (26%)	43%
Science all Round	9-11	20 (40%)	3 (6%)	23%
Near and Far	9-11	28 (56%)	4 (8%)	32%
Out of the Past	9-12	35 (70%)	1 (2%)	36%
The Electric Company	9-14	35 (70%)	21 (42%)	56%

continued . . .

Table III continued

Programme	Age Range (years)	Number of viewing schools		Total viewing schools (n = 100)
		Primary (n=50)	Secondary (n=50)	
Exploring Science	11-13	5 (10%)	14 (28%)	19%
Television Club	11-14	23 (46%)	41 (82%)	65%
Reportage	11-13	0 (0)	12 (24%)	12%
Scan	11-13	0 (0)	14 (28%)	14%
Corners of France	11-14	0 (0)	15 (30%)	15%
Maths Now	11-13	2 (4%)	31 (62%)	33%
Quatre coins de le France	12-14	0 (0)	14 (28%)	14%
Physical Science	13 +	0 (0)	16 (32%)	16%
History 1917 - 73	14 +	0 (0)	10 (20%)	10%
British Social History	14 +	0 (0)	19 (38%)	19%
A Job Worth Doing	16 +	0 (0)	22 (44%)	22%
Going to Work	16 +	0 (0)	17 (34%)	17%
Parents and Children	Further Education	0 (0)	9 (18%)	9%

A review of the data shows, as expected, a shift with rise of age from the Primary column to the secondary column. Maths and Music are notable in that both occur in Shaw's study with high ratings and again in the above figures. Maths Workshop is included in both primary and secondary curricula as is the Television Club and Electric Company. These two are, according to available information, viewed in the Secondary sector by mainly below average ability classes. By including a total (primary plus secondary) percentage column it can be noted that the Electric Company (intended for remedial usage in USA) is viewed by 56% of all survey schools, Maths workshop 11, 43% Maths workshop 1,41% with Television Club viewed by 65% of the surveyed schools. Compared generally with Shaw's survey the above data shows that more programmes on BBC Television are watched more regularly by both sectors than in the early seventies.

Compared with the BBC Television output overall, fewer schools watch the programmes trasmitted by the ATV Company. During interviews it became clear that this was due to two main reasons

a) the total output is smaller and geared more specifically to a specified target audience whether at primary or secondary level and

b) The Company policy of transmitting only during the mornings limits late morning primary school viewers who often use the

school hall before dinner hour for viewing and aggravates the need for video recorders, already in short supply. The data on the following pages illustrates the popularity of "How we Used to Live," (48%), "World About Us" (46%), and "Exploration Man" (40%) to primary school viewers. While in secondary schools "The Land" (46%), "The Messengers" (46%) and "Meeting our Needs" (30%) head the list of most popular series viewed regularly.

Table IV IBA (ATV Midlands) Television Programmes

Programme	Age Range (years)	Number of Viewing Schools		Total (n = 100)
		Primary (n=50)	Secondary (n=50)	
Stop-Look-Listen	6 +	2 (4%)	0 (0)	2%
Seeing and Doing	6 +	2 (4%)	0 (0)	2%
Finding Out	7 - 8	6 (12%)	0 (0)	6%
Figure it Out	7 +	10 (20%)	0 (0)	10%
How we Used to Live	8 - 12	24 (48%)	0 (0)	24%
Picture Box	8 - 11	18 (36%)	0 (0)	18%
Look Around	10 +	16 (32%)	3 (6%)	19%
World About Us	10 $\pm$	23 (46%)	3 (6%)	26%

continued . . .

Programme	Age Range (years)	Number of Viewing Schools		Total (n = 100)
		Primary (n=50)	Secondary (n=50)	
Exploration Man	10 +	20 (40%)	2 (4%)	22%
Meeting our Needs	10 - 13	18 (36%)	15 (30%)	33%
Believe it or not	13 +	4 (8%)	14 (28%)	18%
The Land	14 - 17	0 (0)	23 (46%)	23%
Music Scene	14 - 16	0 (0)	10 (20%)	10%
Messengers	14 - 18	0 (0)	23 (46%)	23%
Experiment ("A" level)	16 +	0 (0)	9 (18%)	9%
Facts of Life	15 - 18	0 (0)	10 (20%)	10%

III Attitudes to Broadcasts (Replication)

To obtain results on the replication study use was made of the original scale constructed by Shaw (see appendix pp 123-126) and, without alteration, was administered to 200 teachers and 200 students.

Student Sample

The students sample were selected from the population of a residential college of education located within the Midlands*. The sample was divisible into the categories used by Shaw as follows:

a) Male students having taken course in Educational Technology.

b) Male students not having taken a course in Educational Technology

c) Female students having taken a course in Educational Technology.

d) Female students not having taken a course in Educational Technology.

Further the equivalent form of the test, based on the Thurstone and Chave design technique, was later completed by groups b) and d) to provide a check on the design and the major data. This again replicated the B Form usage adopted by Shaw and was found to be satisfactory.

*It should be noted that whereas Shaw's sample of non-educational technology course students were primarily first years the replication sample included Certificate and B.Ed students from all stages of their college careers - 1st to 4th year of studies.

Of the 200+ students randomly selected from the college population 50% per cent had completed an intensive course of not less than 70 hours in educational technology while the remainder had not been officially involved with any specific or allied course during their college career. Care was taken to screen non-educational technology students to determine the degree of contact if any, with peripheral aspects of the course eg. information relayed by friends concerning facilities and potential usage during teaching practice in schools. It was decided to reject any student who showed more than general technical knowledge of minor items of the educational technology hardware eg. 35mm and 8mm cameras. However it was found that no student could be placed in the rejection category and all students from the original non-course sample were invited to complete the questionnaire.

The educational technology course contained a detailed examination of the theory and practice of modern electrographic media and associated areas including photography in black and white and colour (35mm slides), 8mm standard and super gauge technology, reprographic media, video and audio equipment plus overhead and episcope usage in teaching. A further component examined the use of television and radio (including radiovision), film and learning packages andtheir advantages and disadvantages in schools.

Teacher Sample

An opportunity sample of over 200 teachers was available drawn from 34 schools covering the primary and secondary age ranges and ranging in location from country village to large comprehensives situated in Metropolitan areas of the Midlands.

As with Shaw's sample the schools were drawn from two local authority areas but in the case of the replication study these were geographically adjacent and not from two remote locations.

The teachers were divisible, as in the original study, into the following categories:-

a) Male teachers in Primary Schools.
b) Male teachers in Secondary Schools.
c) Female teachers in Primary Schools.
d) Female teachers in Secondary Schools.

Due to changes in official policies the original divisions of "primary" and "secondary" schools found in Shaw are now replaced by "middle" and "comprehensive/secondary" titles. It is noteworthy that, certainly in the case of the latter school division the historical background of individual schools may result in staff pressures and stress not overtly displayed. This could affect the usage and attitude of some staff to modern technological media in teaching. The sample included ex-grammar, single sex schools, purpose built comprehensive and amalgamated secondary modern establishments.

Statistical methods used in the replication study

In order to maintain a true replication a similar system as used by Shaw was judged the most appropriate.

Thus the attitude scale made up of 20 statements covered the range of Q values and the B Form was administered also.

Similarly the reliability coefficient was computed using the formula:-

$$\sigma x = \sqrt{\frac{x^2}{N} - Cx^2} \qquad \sigma y = \sqrt{\frac{y^2}{N} - Cy^2}$$

$$\text{with } r = \frac{\sum \frac{xy}{N} - CxCy}{\sigma x \ \sigma y}$$

IV Results and Conclusions

As in the original study the raw scores showed that high score respondents (ie those scoring 67% or above) again exceeded the remainder by approximately the same ration (4:1) as in Shaw's original study. Those scoring 67% or more totalled 85% of the respondents.

The mean score of the total test population (n = 200 teachers + 200 students = 400) was approximately 81.50 with a standard deviation of 17.05.

The correlation of Form A and Form B students revealed a product moment correlation coefficient of r = +0.81.

As with Shaw's original study, Form B showed a bias towards high scoring respondents with 87% scoring 67% or above.

The chi square test of score ratios in the A and B Form of the test showed no significant differences ie. x^2 not significant at 0.5 level - p lies between 0.30 and 0.50 . Thus, as with the original study no statistically significant differences meant that rejection of the null hypotheses was not warranted with regard to:-

a) The attitudes of primary and secondary teachers towards school broadcasting ($\hat{p}$ .50)

b) The attitudes of men and women teachers towards school broadcasting ($\hat{p}$ .50 level)

c) The attitudes of students and teachers towards school broadcasting ($\hat{p}$ .50 level)

d) The attitudes of men and women students towards school broadcasting ($\hat{p}$ .50 level)

e) The attitudes of students who have taken a course and those who have not taken a course including an examination of school broadcasting. ($\hat{p}$ .50 level).

Also the F ratio of the interaction of conditions, differences of teachers students, schools and course with sex of the groups was not significant at the 0.50 level.

The non statistically significant results highlighted the continuing state of instruction in the use of school broadcasting and formed a disturbing view of those trends since Shaw's study. Little advancement appears to have been made in course content and design and the favourable bias towards educational technology seems little enhanced by course attendance. It is pleasing to see that both primary and secondary teachers of both sexes recognise the gain from network programmes but timetable and other commitments still act as powerful deterrents.

As in Shaw's original study the need for appropriate and effective courses in teacher education is re-emphasised. Schools appear to use the television medium more at present than was evident from the original study and, as examined by further research, thereis a continuing need for the provision of both hardware and software to assist teachers using broadcast material. BBC and IBA education sections are continually evaluating feedback from recipients and willing to, try and implement requested changes within the programme framework.

Discussion with members of the BBC and IBA concerned with planning and producing educational programmes reveals a genuine attempt on their behalf to bend to the will of the viewer although little direct contact with actual pupils was mentioned by producers of school programmes.

The DES.and local LEAs are allowing teachers to take up, during secondment, IBA.school teacher Fellowships for research into aspects of the IBA.educational programmes BBC local radio stations have seconded to them, for up to a term, small numbers of practising teachers who research, plan, prepare and produce educational output with an appeal to local listeners. These aspects of liaison, mentioned by Shaw earlier, are now recurring regularly and should continue to assist network producers to more accurately assess the needs of their audience.

Another area of technology noted as potentially important by Shaw is the provision of resource centres particularly in large secondary/comprehensive schools. These have now become well established and provide a focus for usage and ongoing needs within the schools for better and more sophisticated materials and equipment.

As the close correlation, mentioned in the statistical evidence, between the original attitude study and the replication study showed there has been no marked shift in the favourable/ unfavourable continuum in the seven years between the studies the findings put forward by Shaw have not altered to a degree which is statistically significant.

It must be considered that educational technology courses have not increased the awareness of media technology but have provided increased practical expertise within confined limits.

Although no startling new facets of attitude among the respondent teachers and students were forthcoming in the replication study the evidence suggests that stability of attitudes is not without some dynamic dimensions. The most important area of innovation has been the introduction of small scale video equipment eg. Sony and Shibaden ½ inch black and white video tape recorders. This was an area noted by Shaw and which he suggested was worthy of research. Consequently, it was considered worthwhile to examine usage and attitudes within schools and by college students to such equipment.

CHAPTER 5 The Usage of closed circuit television in Schools - Attitudes of teachers and student teachers

Introduction

The findings of the re-run of Shaw's study showed that, there had been a minimum of attitude shift. The dynamism associated with electrographic techniques and equipment found in educational institutions formed the basis of a deeper enquiry into the attitudes associated with modern users. To procede further a preliminary enquiry was mounted and later a follow-up adopted to focus on the main areas of interest.

SECTION I

Preliminary Enquiry

At the outset there was a need to define terms used. Thus the term "closed circuit television" has been taken to mean the facilities and equipment essential to record and replay televisual material from both school, network or other educational source but not the viewing of 'live' BBC or IBA programmes.

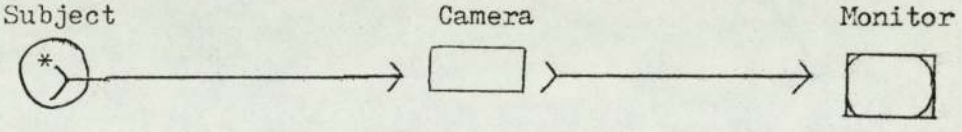
During this enquiry non-structured interviews were undertaken with a convenient sample of practising teachers and student teachers. The former (n = 31) were attending audio visual courses at a Midlands institution while the students (n = 42) were drawn from a pool of mixed sex, year group and subject

specialists available at a College of Education. The students were used to using closed circuit television as a source of information while the teachers' sample were less familiar with closed circuit television. 45% of these were restricted to replaying edited and unedited BBC and IBA schools television broadcasts.

The findings further emphasised the difference in equipment and studio provision between schools and colleges. A synthesis of interview data suggested three main stages of provision leading from the camera and monitor used for reviewing and relaying instantaneous information to the addition of a video tape (cassette) facility and later to multiple camera and recording equipment as shown below (Fig. V).

Fig. V

1) Stage 1. (limited to observation and relay of information to remote location(s))



2) Stage 2. (More flexible with Video-tape recorder (VTR) allowing limited production plus recording and remote replay)

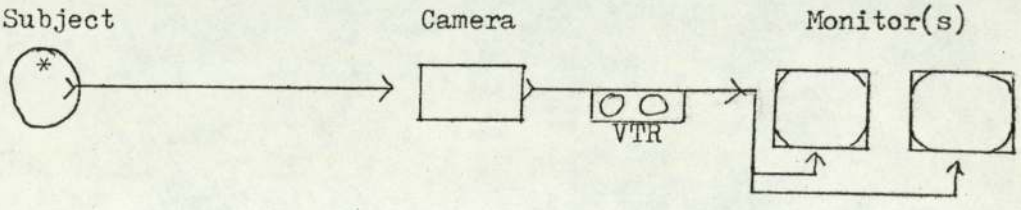
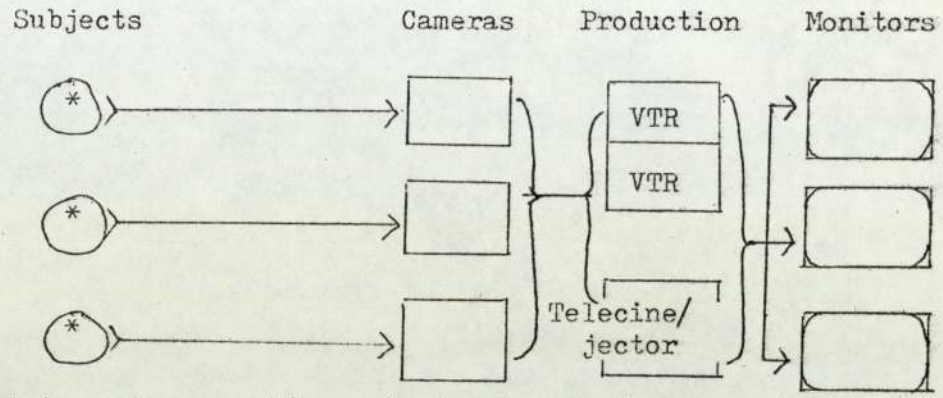


Fig VI

3) Stage 3. (A comprehensive studio arrangement allowing recording, editing, and remote viewing)



Back-up from graphics, electronic, production and research areas.

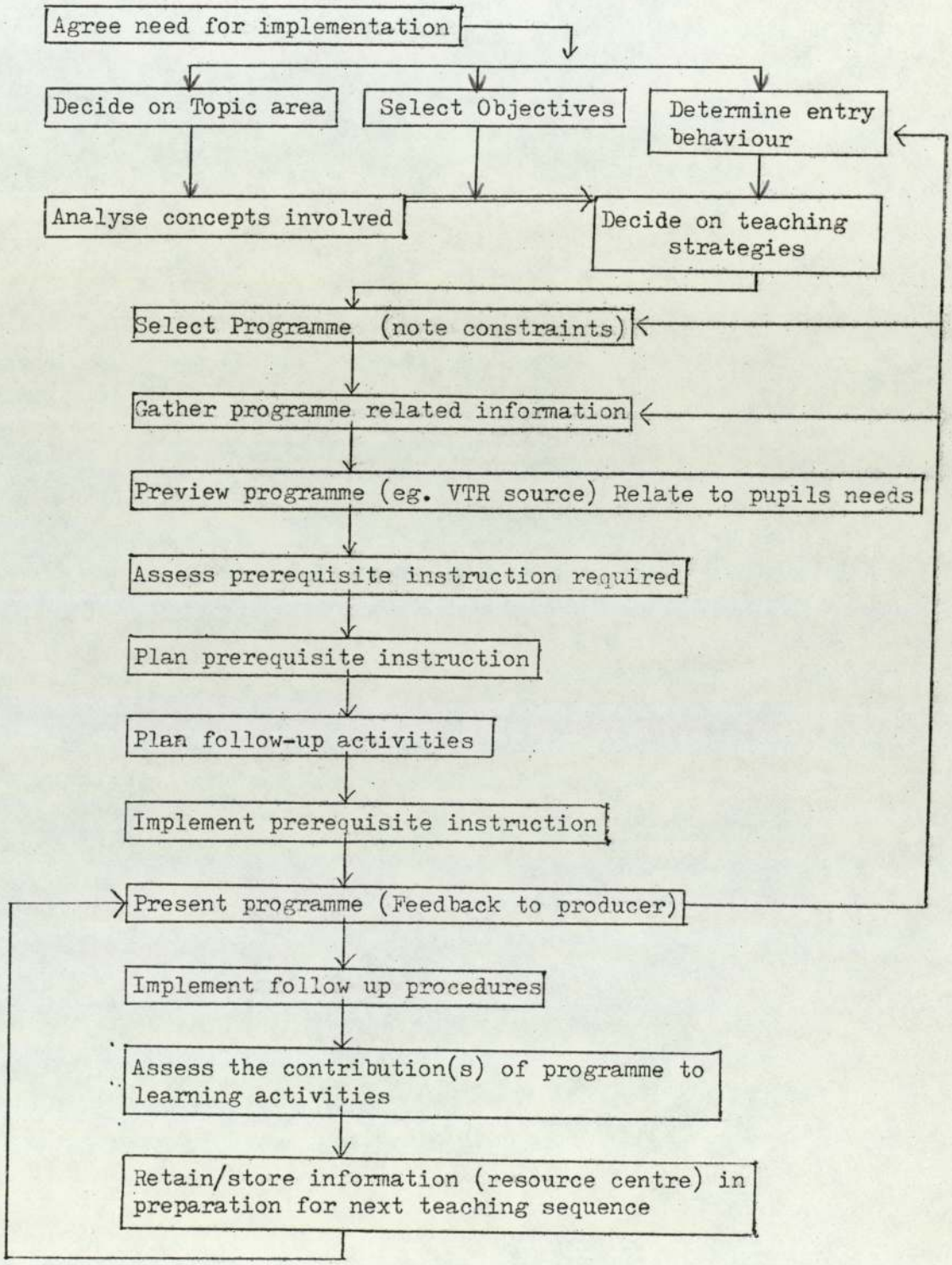
Using the interview information a synoptic flow diagram was formulated which describes both sequenced progression and feedback potential (see Fig. VI).

Although the following table is a synthesis of information the essential factors of planning, implementation and follow-up activities emerge as the accepted norm.

A systematic examination of facilities in training establishments, both at college and university level showed that following the publishing of the Brynmore Jones Report 1965, the use of cctv has become a frequent ingredient in courses in teacher training.

Fig VI

Closed Circuit Television Programme Implementation



Within a college of education environment educational closed circuit television occurs in two major forms: ie providing general, academic educational material and providing specific training for pedagogic purposes. For the former the most common uses centre around the following six factors:

a) Providing opportunities for overspill lecturing.

b) Acting as an audio visual aid, or as a centralised distribution point for a wide range of resource materials.

c) Providing supplementary programmes for department use.

d) Serving as an additional media outlet for dramatic and creative work within the college.

e) Forming a cohesive recording and distribution unit for a wide range of college and associated activities.

f) As a part of courses in audio visual and communications studies.

Within the pedagogic requirements may be noted:

a) Recording of classroom teaching for later playback and analysis for teaching method courses.

b) Recording of student teaching (micro-teaching) for subsequent analysis.

c) Recording child behaviour "in situ".

d) Production of programmes using classroom "inserts" as illustrative material.

The traditional use of closed circuit television is based on studio production similar to network ETV programming. While, for classroom observation the focus of interest is on the fleeting behaviour of the occupants using unobstrusive techniques and portable equipment.

In schools the provision of a video tape recorder (vtr) is seen as a large step forward. Educational Development Centres and other teachers centres mainly supply the production equipment to schools whose users may have attended "in-service" or workshop courses based on both small scale hardware or on the larger, and more sophisticated equipment found in some colleges.

Follow up enquiry

To focus on the emerging areas of concern and need in the preliminary enquiry extensive, non-structured grouped interviews were undertaken. An opportunity sample of 67 serving teachers undertaking B.Ed degree work at a Midlands' College of Education was used and included, on a random basis, both males and females and a range of subject interests and age. 60% were from Secondary (Comprehensive) Schools and 40% from Primary (Middle) Schools with no respondents teaching above or below these age ranges.

The following advantages of cctv in school were revealed:*

1) Cctv provides a focal learning source; pinpoints attention; excludes factors of diversion.

2) Pupils feel a sense of rapport with good presenter.

*Due to the qualitative method of the enquiry it was decided to incorporate the information into the later pilot questionnaire and not to draw quantifiable conclusions from this sample.

3) A person to person relationship is established by the professional, off-air presenter and by the teacher from the school as in a team-teaching situation.

4) Most expert teachers can be used in planning and presenting material; school Education Development Centre and Teachers Centre can syndicate resources.

5) Teachers and pupils can view material specially applicable to needs.

6) Direct stimulus to visual and aural sources of learning are a strength of cctv.

7) Careful planning can produce learning highlights eg. birth of animal, or dangerous experiment.

8) Pace can be partially controlled by the class teacher familiar with the video recorder; the programme can be stopped at a natural break for exercise or investigation work.

9) Cctv can incorporate all other audio-visual media in a school resource area.

10) Programmes can be updated by using editing techniques eg. "dubbing" or "insert" methods.

11) By careful production a succinct teaching programme can provide major events on a condensed time scale eg. seasonal differences or chemical changes.

Disadvantages noted by the opportunity sample n = 67

1) Capital outlay for production equipment - vtr cameras, lights etc.

2) Cannot often allow time for realistic preview.

3) Difficult to slot into exam orientated courses.

4) Difficult to stop in mid programme (instruction needed by teacher)

5) Viewing facilities limited in schools.

6) Pupils exposed to entertainment television and informative children's programmes; may not accept lower production standards of school tv.

7) The television programme approach encourages little positive feedback to the producers.

8) Support literature expensive (booklets); video tape expensive; difficult to edit material from programme.

9) Timetable, particularly in comprehensives, not flexible to allow viewing (need multiple vtr facilities).

10) Teachers attitudes may result in trivialisation of output.

When later questioned on possible ways of overcoming the disadvantages expressed the following ten methods were synthesised from the groups of teachers.

1) Vtrs cost less than a good 16 mm projector on which only hired material can be used. Vtrs are available by arrangement with the local teachers centre plus instruction if required. Schools with active Parent-Teacher Associations and other benefactors acquire vtrs from donated funds. The simple "Porta-pack" portable system is suitable for both studio and outside broadcast work. Ancillary equipment eg. lights and recording gear is usually available from within the school eg. Drama Dept. and language Depts in secondary schools.

2) Viewing is possible from video tapes during free time. Literature gives the basic programme content while some

network programmes are transmitted prior to the start of term.

3) Using a vtr, editing reduces viewing time. Even films and slides are often difficult to hire or buy in time for a precise lesson within a teaching scheme.

4) After minimal instruction on a vtr basic skills quickly learned:- controls of machine, loading and unloading cassette or spools, stopping and "freeze" framing and rewind methods.

5) Vtrs and monitors are usually transportable for viewing in suitable rooms.

6) Evening viewing habits of pupils usually lead to initial set and attending to screen. The "hypnotic" effect of the screen is aided by position of viewers and their state of readiness.

7) Teacher can be class feedback device. Programme can introduce tasks etc. for completion and these are evaluated by teacher, graded and discussed.

8) Good support material aids feedback and impetus to learning. Multi-media packs which include video tape integrate all conventional and audio-visual media. Cost of booklets and support material are subsumed by the total pack costs.

9) Arrangements for the provision of a vtr overcomes major difficulties of viewing.

10) The attitude of the competent and versatile teacher vis-a-vis his opposite number is reflected even in conventional teaching methods. The quality of the screen output will teach beyond the avility of the mediocre classroom teacher thus benefiting pupils.

The dichotomy of viewpoint suggested by the surveys pointed towards the need for a more statistically reliable collection and evaluation of data. The underlying attitudes to broadcasts illuminated by the previous replication study could be examined in a specific context - that of cctv usage in present day middle and comprehensive schools.

As a result of the accumulated information research questions were formulated and a pilot attitude questionnaire drawn up.

SECTION II

Research Questions

By examination of the literature, plus the qualitative information obtained by interview a range of variables appeared worthy of investigation. These included the status, sex, academic background

and present vocational functions of respondents who were divisible into trainee teaching students and qualified practising teachers. The above variables were then included in Part I of the Ed. CCTV Questionnaire and thus formed a basis for quantitative analysis relating to Part II (Attitude Items) and Part III. The Part III section contained a series of questions presented to respondents dealing with specific areas of concern noted in earlier interviews. These covered, Feedback, Video-tape editing and pupil participation in cctv production.

SECTION III

Sample Data Collection and Questionnaire design

To undertake a depth study involving national samples and associated collection techniques was not feasible thus a regional approach was adopted. The original student sample was drawn from colleges of education in the Midlands during the pilot stages and initial interviews and was a random selection of men and women from all year groups. The information gained from the pilot samples was used as a basis for the final attitude questionnaire. This was presented to a randomly selected sample drawn from one college of education where the questionnaires could be completed within a time span of two days. This minimised the effects of peer feedback and reduced the possibility of distorted results.

The teachers were also drawn from Midlands schools where the author was able to interview and present pilot drafts to staff within their working environment. During the filling in of the final questionnaire the same technique was adopted with groups (up to 15 persons) completing the questionnaire during convenient breaks in their teaching commitments. Schools were not chosen with regard to prior use of cctv equipment but, as such provision is widespread in the West Midlands region all respondents had encountered recordings of BBC and IBA programmes for school usage and all schools had access to cctv portable equipment. Final questionnaires were completed during a three week period.

Students - n = 174

Teachers - n = 168

From this total two groups were selected from unspoilt returns ie:

Students - 149

Teachers - 151

As a result of enquiry and reading including Burroughs G.E.R. (1971), Lemon (1973), Evans K.M. (1965) and Fox D.J. (1969) it was decided to use a Likert construction to probe the attitudes of teachers and students to the use of educational closed circuit television in schools. Although major works in

attitude scale design and development were consulted - eg. Thurstone and Chave (1929) Guttman L. (1944) and Osgood C.E. (1951), Remmers H.H. (1954), Edwards A.L. (1957) and Stern C.G. (1967) it was considered that within the time and resources available the most reliable method would be that of Summated ratings. The design followed suggestion in Lemon (1973) and Burroughs G.E.R. (1971) regarding statement clarity, simplicity and specifity and a five point graphic scale was used.

*Part I of the final questionnaire divided respondents into specific categories prior to answering Part II. While Part III called for opinions related to cctv feedback, questioning, video tape recording, editing and pupils participation.

A breakdown of the structure of the final Part II of the questionnaire reveals the following:

a) Areas of enquiry: A The place of cctv in teaching in schools.

B The place of training for cctv production and usage

C cctv production capabilities

D Equipment provision and needs

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*A copy of the final questionnaire is included in Appendix pp 127-130

b) Item responses per area:

	Total
A Items 1, 3, 5, 7, 8, 9, 11	7
B Items 10, 12, 13, 14, 19	5
C Items 2, 15, 16, 17	4
D Items 4, 6, 18, 20	4

Enquiry areas A and B were seen as more important to respondents following earlier interviews and thus were allowed more items than C and D.

Items were randomly placed within the questionnaire.

SECTION IV

Data Analysis

1) Analysis of Scale

Correlations of the individual items with the total score of the attitude questionnaire ranged from 0.41 to 0.79 (See Appendix - [illegible] p 131) thus justifying the retention of all 20 items in the scale.

The reliability coefficient was computed using Cronbach's Co-efficient Alpha (α)

$$\alpha = \frac{k}{k-1} \left(\frac{1 - \Sigma \text{ item } S^2 \text{ items}}{S^2 \text{ scale score}} \right)$$

where k = number of items

S^2 items = variance on each item

S^2 scale score = variance on total score

The resultant value found for the 20 item scale was

$$\alpha = 0.89$$

For the sample studied the overall mean was +7.23 with a standard deviation of 13.57

2) Investigation of differences of attitude to Ed CCTV related to background of respondent

i) Attitudes of student teachers and experienced teachers

	Attitude Score		
	Mean	S.D.	
Experienced Teachers	7.24	13.57	n = 151
Student Teachers	6.19	11.15	n = 149

The one-way analysis of variance showed that the difference between groups is not statistically significant ($F - 1.83$, $p > .05$)

ii) Attitude of Males and Females

	Attitude Score		
	Mean	S.D.	
Males	8.57	11.2	n = 125
Females	6.15	15.0	n = 175

A one-way analysis of variance showed that the data gained in this part of the investigation is not statistically significant ($F = 2.69$, $p > .05$)

iii) Attitude of student teachers trained for differing age levels

	Attitude Score		
	Mean	S.D.	
Primary/Middle Schools	7.08	14.25	n = 196
Secondary/Comprehensive	7.53	12.26	n = 104

A one way analysis of variance showed that, on the basis of the data obtained the differences are not statistically significant ($F = .07$, $p > .05$)

iv) Attitude of teachers teaching different subjects

	Attitude Score		
	Mean	S.D.	
Science and Maths	7.84	12.52	n = 83
Arts (incl. Geog.)	6.12	15.39	n = 85
Practical Subjects including P.E.	7.53	13.51	n = 80
Others eg Careers	7.37	12.65	n = 49

A one-way analysis of variance showed that in spite of variances in the mean and S.D. these were not found to be statistically significant ($F = 0.3$, $p > .05$)

v) Attitudes of student teacher's by year division

	Attitude Score		
	Mean	S.D.	
Year 1	7.55	16.61	n = 56
Year 2	11.11	12.90	n = 47
Year 3	5.54	17.31	n = 35
Year 4	6.00	18.00	n = 12

A one-way analysis of variance showed that this difference is not statistically significant ($F = 2.53$ $p > .05$). Although it is interesting to note the more positive attitude held by 2nd year students due to the recent contact with educational cctv during foundation courses.

vi) Attitudes of teachers with varying years of teaching experience

		Attitude Score		
		Mean	S.D.	
Years	1	4.38	12.51	n = 24
Exper-	2 - 10	6.07	10.94	n = 45
ience	11 - 20	6.63	11.26	n = 48
	21 +	8.00	8.99	n = 33

A one-way analysis of variance showed that this difference is not statistically significant ($F = 0.23$, $p > .05$). The underlying mean trend suggests that more experienced teachers hold firmer positive views than their less experienced colleagues particularly probationary teachers.

vii) Attitudes of students with and without previous experience of cctv.

	Attitude Score		
	Mean	S.D.	
Students with prior experience	5.42	19.10	n = 12
Students without prior experience	8.30	15.56	n = 138

A t-test showed that this difference is not statistically significant ($t = 0.51$, $p > .05$)

viii) Attitudes of teachers who had or had not used cctv

	Attitude Score		
	Mean	S.D.	
Teachers with experiences of cctv when training	6.73	11.95	n = 22
Teachers with experiences of cctv when teaching	1.27	13.88	n = 11
Teachers with no experiences of cctv	6.79	10.36	n = 116

t-tests between pairs of means showed that none of these differences are significant. Although it is interesting to note that those teachers who had used cctv in the classroom tended to have a less positive attitude than teachers who had not.

From the data obtained it appears that background and biographical factors do not influence attitudes to cctv. These attitudes are already prevalent in student teachers and appear to be confirmed by course participation. Similarly, teachers' attitudes appear to be based on a confirmed direction whether positive or negative.

3) Investigations of attitudinal differences related to responses to ancilliary questions included on the questionnaire

i) Question: Should courses be held in term time and attended by a) all teachers, b) most teachers, c) only those interested, d) no teachers?

		Attitude Score		
		Mean	S.D.	
Responses	a	11.98	7.59	n = 91
	b	12.24	7.63	n = 138
	c	-1.90	17.58	n = 40
	d	-17.16	9.31	n = 31

A one-way analysis of variance showed that these differences are statistically highly significant ($F = 96.87$, $p < .001$). Thus the respondents who showed a favourable attitude to categories a) and b) have colleagues who are particularly concerned that no teachers ought to attend such courses. Thus this dichotomy reflects, statistically, the "pro-con" nature of informal interviews

held with teachers concerning this area of enquiry.

ii) Question: If operating a VTR would you require editing facilities?

		Attitude Score		
		Mean	S.D.	
Response	Yes	11.26	9.78	n = 215
	No	-3.25	16.37	n = 83

A t-test shows this difference to be statistically significant ($t = 6.00$, $p < .05$) This suggests that concern felt by teachers with regard to the editing of educational material via a VTR or VCR is seen as desirable by the majority of respondents.

iii) Question: Have you attended an editing course?

		Attitude Score		
		Mean	S.D.	
Response	Yes	14.46	4.30	n = 41
	No	6.09	14.18	n = 259

A t-test shows this difference to be statistically significant ($t = 1.68$, $p < .05$). Allied to the need for vtr/vcr editing to be carried out in schools there is thus evidence that suitable courses have not proliferated.

iv) Question: Should pupils participate in cctv production?

		Attitude Score		
		Mean	S.D.	
Response	Yes	11.30	9.69	n = 213
	No	-3.08	16.38	n = 85

A t-test shows this difference to be statistically significant ($t = 6.09$, $p < .05$). Thus the volume of opinion suggests a positive integration of pupils would be acceptable when preparing and producing educational cctv material. The exclusive nature of the medium would appear to be less noticeable than during Shaw's Study period.

4. Investigation of the background of respondents and responses to ancilliary questions

The background of the teachers and students who completed the questionnaire was found to have little influence on the way the ancilliary questions were answered. The following tables show the data where there was found to be a statistically significant relationship.

i) Question: Should cctv courses be held in term-time and attended by
a) all teachers
b) most teachers
c) only those interested
d) no teachers

	Response % by sex				
	a	b	c	d	
MEN	35	46	14	5	n = 125
WOMEN	27	46	13	14	n = 175

($X^2 = 8.04$, df = 3, $p < .05$)

It can be noted that there is a slight tendency for women teachers to be less keen on attending cctv in-service courses.

ii) Question: Have you attended an editing course?

(a)

	Response %		
	Yes	No	
Teachers	8	92	n = 151
Students	20	80	n = 149

$X^2 = 7.48$, df = 1, $p < .05$

This shows slightly more students have attended editing courses than their experienced colleagues but value and content are not measured.

(b)

		Response %		
		Yes	No	
Main Subjects	Science/Maths	5	95	n = 83
	Arts/Geog.	20	80	n = 85
	Prac/PT	16	84	n = 84
	Other	14	86	n = 49

$\chi^2 = 9.34, \quad df = 3, \quad p < .05$

Due to the nature of the arts courses studied there appears to be a more open attitude to the use of editing equipment. However, the non usage by science staff may result from less interest in programming and a greater involvement in the electronics and engineering requirements of the medium.

CHAPTER 6

Conclusions of the Attitude Enquiry

The quantitative results shown in the previous section suggest that the few areas of the attitude enquiry provided a suitable basis for analysis. By including items on:

(a) The place of educational cctv in teaching in schools.

(b) The place of training for educational cctv production and usage.

(c) cctv production capabilities.

(d) Equipment provision and needs.

the respondents were giving evidence directly related to areas of concern noted by serving teachers during the preliminary enquiry.

1. It is revealed that there is no marked attitude shift between the trainee students and their qualified teaching colleagues with a generally favourable attitude to educational closed circuit television. It appears that the threat factors associated with television usage in the classroom as isolated by Westley and Jacobsen (1962) do not prevail among the respondents in the present study. In 1963 Brown and Thornton were commenting on the "excess of equipment over its planned usage", and suggested that many cctv production set-ups were "pre occupied with trying to find uses for it". It now seems that, with the markedly

favourable attitudes shown by teachers and students there may be an increase in usage and even pressure applied for more varied and flexible hardware able to cope with increasing and changing demands.

2. While, contrary to the suggestions given in the preliminary interviews, there is no marked difference in attitude between male and female respondents at both student and teacher levels. The opinion that females are less favourably inclined towards cctv does not appear to be substantiated.

3. A similar, widely held belief that teachers at Primary level are noticeably less concerned with cctv than their Secondary colleagues was not upheld by the data. Thus tables eg. BBC - Schools Broadcasting Council Reports, which suggest a greater provision of equipment in primary and in secondary schools may not reveal its appropriate usage in those areas.

4. Neither was there found any significant difference between the positive attitudes of Primary and Secondary students towards cctv generally. In general the findings of Whiting CG (1961) and Merril I R (1965) are substantiated with an acceptance at both teaching preparation levels of the advantages of educational closed circuit television.

5. The need for vtr and vcr editing facilities allied to the provision of appropriate courses is clearly seen while further enquiry strengthens the view that such a need is common to both Primary and Secondary sectors. Although this is feasible in resource centres as outlined in Williams (1972) and Hawkins (1970) there has been little research which isolates the precise requirements of teachers with regard to editing and more flexible use of software.

6. The original enquiries among serving teachers revealed the belief that cctv was most often found under the aegis of science staff with limited requirements associated with arts or practical subject colleagues. The results from the computed data lead to no such conclusion. Although researches including Moss J R (1973) used science students in his experiments, there appears to be a broad spread of positive attitudes to the medium from teachers of all subject categories. However, the generalised nature of non-specialist teaching in the Primary sector may have obscured the more clear cut division found in Secondary teacher responses. Other authors, Browns (1975) and Hornsby J (1977) share the view that production facilities are to be made available to staff from all subject areas.

7. Examination of the data related to student year division suggests that attitudes are positively biased throughout the

year groups with a peak in the second year. Again this reinforces a notion of attitude dimensions prior to training underlying the acceptance of cctv by students. Following their induction to cctv via course commitments there is little evidence of later rejection as signified by the low occurence of negative scores.

8. Contrary to the initial, qualitative data findings, the Questionnaire results show that older teachers (those with over 21 years experience) have more positive attitudes to cctv than many of their junior colleagues. Further enquiry is needed to establish if this is the result of complex factors operating on such persons. These factors may be - status of individuals, remoteness from classroom experience, co-ordination requirements brought about by team and resource orientated teaching and the wish to provide modern facilities for heavily committed teaching staff as shown in Webster B (1977) and Bratt C (1977).

9. It is noticeable that favourable attitudes shown by both students and teachers are not reliant on prior contact with the medium of cctv perhaps due to contact with the allied field of network television over a protracted period of time. Further enquiry would be needed to isolate such factors and to ascertain if significant contact was of an entertainment, general interest or schools broadcast nature.

10. Although from the teacher sample there appeared a less marked positive attitude to cctv by those having experienced the medium during training the size of sample ($n = 11$) could not be the basis of conclusive evidence.

11. Investigation in Part III of the Questionnaire suggests that the teachers attending courses on cctv production and usage in schools will confirm their prior held positive or negative views. Thus, although the teachers favourable to cctv will request improved courses and increased attendance there appears little evidence that negatively biased colleagues will value participation in such courses held in term time. The polarity of viewpoint ($p < .001$) suggests a continuing dichotomy in schools and a need to provide courses at induction level which take account of likely reticence.

12. The investigation of attitudes with regard to pupil participation in the making of video tape productions showed that, in general respondents were willing to allow such activities. However the respondents with negative attitudes showed a marked dislike of such activity which could hinder the efficient running of a small cctv unit as outlined in Gibson T (1970) Hancock (1971) Williams (1972) and ILEA (1968a).

General Conclusions

Evidence from the replication of Shaws' (1971) study suggests that more guidance is needed for the effective use of schools broadcasts (also in Hayter C G (1974)) and the recurring need for liaison between teachers and network producers could be aided by feedback from the pupil audiences themselves. (also in Himmelweit H (1958)).

Flexible teaching demands a more selective use of material and the use of vtrs and vcrs will allow pupils to have access to assembled information more suited to particular situations. Editing courses will continue to be called for and thus pressure teachers into an awareness of their own role in providing information via the cctv medium.

With the continual growth of resource centres a need has been created for cctv to act as a library resource not only able to hold captive "off air" and school produced programmes but also available to store information originated in other media for later recall eg. slide/tape transfers to video cassettes for easier replay by teachers and pupils.

Areas of Further Enquiry

With the increased availability of video tape and video cassette recorders the nature of schools needs and attitudes to teacher/pupils based production should form areas of ongoing enquiry. With access to lightweight cameras and portable recording equipment the nature of resource and individualised learning becomes an area of investigation. With the inherent interest by most teachers in cctv as shown in the Attitude Questionnaire enquiry this positive attitude may be explored in the areas above at both trainee and teaching levels.

More research could establish the factors influencing older teachers' attitudes as they hold positions of influence in a rapidly evolving, technological era and can thus implement change which may assist or conflict with methods of enhanced learning.

As pupils come into contact with more domestic market video equipment (eg VHS systems, video disc and pre-recorded tapes) their sophistication could influence the equipment needed and subsequent production methods in schools. See Bates A.W. (1978) in Perraton (Ed) "The Cost of Ed. Radio". The arguments for pupil exclusion from too great a participation in 8 mm and 16 mm film production now seem unfounded as do those with regard to

tape recording. Thus a study of participation needs and attitudes to cctv could provide valuable guidelines for harmonious integration in the future as would the study of the effects of normal and abnormal viewing habits by pupils and teachers of network BBC and IBA programmes of both educational and entertainment types. In conclusion it should be noted that the accelerating speed of innovation and change in educational technology both in the hardware and software fields demands constant monitoring (Bates A W (1978)). If, as the result of such monitoring, a novel or improved approach to teaching and/or learning is revealed then that unique line of enquiry will have proved valuable not only for the investigator but also as a catalyst to further enquiry and benefits to both teachers and learners.

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APPENDIX

Extract from E.T.A. Directory (formerly NECCTA)

"The National Educational Closed-Circuit Television Association came formally into existence in the summer of 1967. Today it is the main agency for bringing together the many educational bodies and other organisations systematically using CCTV as an integral part of their teaching and learning resources.

Member institutions comprise universities, polytechnics, colleges of education, colleges, schools, local education authorities, industrial firms, television training centres, training boards, the Armed Services and others, which have set up fully operational television services.

A number of national bodies with particularly closely-related aims also have a membership of the Association and are represented on the National Executive Committee. These bodies are: The British Broadcasting Corporation, The Independent Television Authority, The National Council for Educational Technology, The Open University, and The Independent Television Companies' Network Educational Sub-Committee.

Correspondent Members (almost all abroad) and Individual Members complete the membership.

The Association is formally recognised by the Department of Education and Science and the Scottish Education Department, and the respective Secretaries of State have nominated assessors who also sit on the National Executive Committee.

NECCTA received a grant for the period 1968/71 from the Calouste Gulbenkian Foundation."

<u>The aims of the Association are the following</u>:

(a) To establish appropriate educational and technical standards for educational television.

(b) To promote high standards of production and to encourage the introduction of new methods and materials.

(c) To promote working contracts between the producers and the users of television at different levels of education and liaison with those working in other areas of educational technology such as film, programmed instruction and language laboratories.

(d) To encourage the exchange of experience and information on staffing, training, operating techniques, technical development, programme content and research of educational television.

(e) To act as a representative body which can offer informed reaction to problems of general policy such as costs, copyright, royalties, and relating with other organisations.

(f) To foster contact and co-operation with overseas organisations and research centres concerned with educational television.

(g) To organise such meetings, conferences, training sessions of other activities as will further the general objectives of the Association.

NATIONAL EDUCATIONAL TELEVISION ASSOCIATION
REGIONAL MEMBERSHIP DIVISIONS

MEMBERSHIP	NORTHERN	SOUTHERN	SCOTTISH	WESTERN	OVERSEAS	TOTAL
Universities	15*	11***	6	7	13	52
Polytechnics	11	6	-	1	-	18
Colleges including Colleges of Technology	26	26	16	8	3	79
LEAs	2	4	2	1	-	9
Schools and Teachers Centres	4	3	2	2	-	11
Services	2	7	1	1	-	11
Hospitals	-	-	-	1	-	1
Industries and Industrial Training Centres	6	9	2	-	-	17
Others	-	4	3	-	2	9
Individuals	15	12	3	5	10	45
Specials	-	6***	1	1	-	8
TOTAL	81	88	36	27	28	260

*Includes two University of Manchester Departments
**Includes HMI, BBC, IBA, ITCA, CET and OU
***Includes two University of London Colleges

(Reproduced by kind permission of the Educational Television Association)

BBC and IBA Schools Programmes - Shaw's Study 1971

A. BBC PROGRAMMES

Programme	Age Range	Nos. of viewing schools
Merry-go-round	7 - 9	8
Primary Mathematics	9 - 10	11
Exploring Your World	9 - 10	5
Watch	6 - 7	5
Look and Read	5 - 7	1
Going to Work	14 - 16	4
Television Club	12 - 13	4
Science Session	13 - 16	3
Scene	14 - 16	2
Discovering Science	11 - 12	1
Mathematics Today	11 - 13	1
Exploration and Discovery	10 - 13	1
Making Music	10 - 11	5
People of Many Lands	10 - 11	1

Total number of programmes viewed (BBC) = 14

B. ITA PROGRAMMES (YORKSHIRE TELEVISION)

Programme	Age Range	Nos of viewing schools
Finding Out	7	7
Picture Box	8 - 10	9
The World Around Us	9 - 11	3
Seeing and Doing	6	6
Towards Mathematics	7 - 9	8
How We Used to Live	9 - 11	7
Primary Mathematics	7 - 10	2
Your Money, Your Life	14 - 15	3
The Messengers	14 - 17	1
Conflict	15	2
Ici la France	VI Forms	1

Total number of programmes viewed (ITA) = 11

Grand total of programmes viewed (BBC + ITA) = 25

*Instructions to candidates for completing Forms A and B of the final attitude scale and its equivalent form

Please complete the data on this page which is required for statistical purposes only.

Here are 20 statements in connection with school broadcasts. Please place a circle around the number of the statement with which you AGREE.

Thank you for completing the booklet.

x x x x x x x x x x x x

Delete information which is inapplicable:-

Are you a teacher or a student-teacher?

Male or female?

If a teacher do you teach in a primary or a secondary school?

If a student have you completed a course in connection with audio-visual aids and appreciation of school broadcasting.

Yes/No.

*Taken from Shaw's research in Shaw, D (1971) M Ed Thesis University of Manchester.

Final attitude scale of 20 statements (Form A)

Place a circle around the number of the statement with which you AGREE.

1. Teachers do not accept schools broadcasting because they are too fond of old ideas.

2. Teachers using schools broadcasts use little initiative in follow-up work.

3. Schools broadcasts are only useful with intelligent children.

4. Films are a better medium in the classroom than TV broadcasts.

5. School broadcasts require too much upheaval of the timetable to make them worthwhile.

6. School broadcasts are good because they make use of a great variety of specialised production resources.

7. Broadcasts use language that is too difficult for the children.

8. Broadcasting should be an integral part of the school timetable.

9. Teachers are afraid of being replaced by technical equipment such as TV.

10. Children should only be allowed broadcasts as a special treat.

11. The standards of school broadcasting are constantly kept at a high level.

12. Differences between programmes is more important than differences between radio and TV.

13. TV makes a bigger impact on children than the written work.

14. Programmes try to cover too many topics in one session.

15. Radio-vision programmes are more useful than TV broadcasts.

16. School broadcasts supplement teaching.

17. Broadcasts are only suitable for older children.

18. Children consider school broadcasts "boring" when compared with out-of-school broadcasting.

19. Teachers feel that listening to or viewing school programmes is not as worthwhile academically as reading a book.

20. School broadcasting is the best way of bringing the world into the classroom.

Equivalent form of final attitude scale (Form B)

1B. Broadcasting is one of the determining factors in the introduction to active teaching.

2B. Education must embark on a new venture through the medium of broadcasting.

3B. Appropriate use of audio-visual aids in other subjects leads to an appreciation of school broadcasting.

4B. Teachers in a new situation need new techniques.

5B. All teachers should undertake a course in the use of school broadcasting.

6B. The provision of a radio and TV set is as essential in a school as textbooks.

7B. The purpose of broadcasting is to enrich and not to replace.

8B. Broadcasts help the non-specialist teacher.

9B. TV programmes are more useful than films.

10B. Teachers are not the best judges of educative broadcast material.

11B. There is no point in using broadcasts that do not fit into one's own syllabus.

12B. Teachers trust books more than broadcasts.

13B. The broadcasting companies are unaware of the teachers' needs.

14B. Broadcasting fails because it is too passive a medium.

15B. School broadcasts do not allow for participation by the whole class.

16B. Teachers reject broadcasts because broadcast series are too long.

17B. Broadcasts are not worthwhile because the teacher cannot control the pace of the lesson.

18B. The "master-teacher" on radio or TV is a threat to the classroom teacher.

19B. School broadcasts are a waste of time for Grammar School pupils.

20B. School broadcasts do not help working-class children.

*Educational CCTV Attitude Questionnaire

The final version of the attitude questionnaire and supplementary questions.

Dear Student/Teacher,

The aim of this questionnaire is to obtain anonymous data about your views regarding the merit and usage of closed circuit television (cctv) in schools.

The term closed circuit television refers to facilities needed to record and replay educational material originating from schools, other educational institutions and the BBC and IBA. Reactions to "live" BBC and IBA programme viewing are not required.

ALL RESPONSES WILL BE TREATED IN THE STRICTEST CONFIDENCE.

Part 1A. STUDENTS ONLY

a) Sex ..... b) Age range of children you aim to teach .....

c) Main Subject .....d) Student Year .....

e) Have you had contact with cctv other than at college?

YES/NO

Please specify

.....

Part 1B. TEACHERS ONLY

a) Sex ..... b) Age range of children taught .....

c) Specialist subjects taught .....

d) Please circle years in active teaching:

up to 1 : 2 to 10 : 11 to 20 : 21+

*Format adjusted for inclusion in thesis.

e) Have you attended a course in educational cctv.

during training ? YES/NO

during teaching ? YES/NO

Part II ALL RESPONDENTS

This part requires an "X" to be placed in the appropriate space you choose alongside EACH questionnaire item.

1 = Strongly agree 2 = Agree 3 = Uncertain 4 = Disagree 5 = Strongly disagree

	1	2	3	4	5
1) CCTV programmes should be used more frequently in schools.					
2) CCTV production in schools is too technically biased for the majority of teachers to handle effectively.					
3) CCTV has few advantages as a flexible teaching medium.					
4) CCTV has become a school status symbol in keeping with the current technological vogue.					
5) In general CCTV programmes do not retain the pupils' attention during transmission.					
6) School CCTV services should appear high on the requisition list for new equipment.					
7) CCTV, as an audio visual aid, does little to enhance the learning process.					
8) Using CCTV is a convenient way of changing the routine of conventional lessons.					

	1	2	3	4	5
9) CCTV lessons are usually more carefully structured than conventional lessons.					
10) The majority of class teachers would benefit from a course covering CCTV familiarisation.					
11) CCTV Productions might effectively replace conventional class teaching					
12) Understanding the structure of CCTV production assists trainee teachers in structuring their conventional lessons more effectively.					
13) It is worthless to attend a course in CCTV and then teach in an unequipped school.					
14) Video tapes of conventional teaching present a distorted view of classroom interaction making such information of little use for training teachers.					
15) The lower production sophistication of school produced material results in minimal effectiveness in the classroom.					
16) The teachers in schools CCTV production teams are not given adequate time and facilities for programme preparation.					
17) The CCTV production team when preparing programmes should be allowed to encroach on accepted time-table commitments.					
18) Colour video recorders and associated equipment are just expensive luxuries for schools CCTV requirements.					

	1	2	3	4	5
19) More time should be allocated for the study of CCTV prior to and during a teaching career.					
20) Provision should be made for the continued purchase of more modern CCTV equipment in schools.					

Part III ALL RESPONDENTS

For each question please circle one appropriate response

1) In order to up-date teachers cctv courses should be held during convenient times during term, and attended by:

(a) all teachers
(b) most teachers
(c) only those interested
(d) no teachers

2) If operating a video-tape recorder in school would you require editing facilities prior to presentation?

YES/NO

3) Have you attended a course which specifically included instruction in editing techniques for video-tape recorders?

YES/NO

4) Would you allow and encourage pupils to participate in cctv production within the school?

YES/NO

Thank you for completing this questionnaire. If you have any further comments please write them below:

RCA 1977.

Pearson Correlation Coefficients - Part II of Questionnaire

Analysis of Scale

Variable	Questionnaire Item	Pearson Correlation Coefficient
007	1	0.79
008	2	- 0.71
009	3	- 0.71
010	4	- 0.79
011	5	- 0.68
012	6	- 0.72
013	7	- 0.80
014	8	- 0.70
015	9	0.74
016	10	0.46
017	11	- 0.64
018	12	0.71
019	13	- 0.63
020	14	- 0.41
021	15	0.32
022	16	0.73
023	17	0.75
024	18	- 0.79
025	19	0.76
026	20	0.72

The acceptable coefficient results (+ or - 0.65 or above) were detailed for 17 questionnaire items but the remainder were below the Pearson acceptance level. ie. Items 10, 14 and 15. This does not invalidate results based on such items but suggests that they be treated cautiously as other factors may have influenced the populations responses.

Attitude Questionnaire		Computer Coding Key
001	Respondents	1 = Teacher 2 = Student 0 not known
002	Sex	1 = Male 2 = Female 0 not known
003	Age Taught	1 = Middle/Junior 2 = Secondary/ Comprehensive 0 = not known
004	Main Subject	0 = not known 1 = Science and Maths 2 = Arts with Geography and Environmental Studies 3 = Practical Subjects eg. PE, Home Economics. 4 = Others eg. Careers
005	Student Year or Number of years experience	0 = not known 1, 2, 3, 4 5 = up to 1 year 6 = 2 yrs to 10 yrs 7 = 11 yrs to 20 yrs 8 = 21 years and over
006	Previous training contact with educational closed circuit television	
	Students	0 = not known 1 = Yes 2 = No
	Teachers	3 = Yes during training 4 = Yes during teaching 5 = No

Part II) Variables were presented as 007 to 026 equating with the questionnaire responses from Q.1 through to Q.20

Questionnaire items were computed to reveal their correlation to the negative or positive aspects of the Pearson coefficient and produced the following breakdown.

Item No.	Positive	Negative	Not known
1	1		
2		2	
3		3	
4		4	
5		5	
6	6		
7		7	
8		8	
9	9		
10	10		
11		11	
12	12		
13		13	
14		14	
15	15		
16	16		
17	17		
18		18	
19	19		
20	20		
Total 20 items	10 positive items	10 negative items	

Thus an equal number of positive and negative items could be established.

Also the negative/positive breakdown per area revealed:

		Positive Items	Negative Items
Area	A) The Place of cctv in teaching in schools:	1, 9	35, 7, 8, 11
	B) The Place of training for cctv production and usage:	10, 12, 19	13, 14
	C) CCTV production capabilities:	15, 16, 17	2
	D) Equipment provision and needs:	6, 20	4, 18

While Part III) Variables were coded as below:

027	Courses	0 no reply 1 all 2 most	3 only those interested 4 none
028	Questioning presenter	0 no reply 1 frequently 2 occasionally	3 end of prog 4 pauses 5 not at all
029	VT editing	0 no reply 1 yes 2 no	
030	VT course	0 no reply 1 yes 2 no	
031	Pupil access to equipment	0 no reply 1 yes 2 no	