

CONCLUSIONS TO CASE STUDIES

One of the basic questions which must be asked about the new media is how these new educational techniques, instruments and approaches as components can make an educational system as a whole more efficient and productive. The media are only as good as the results they achieve. The measurement of these results is extremely difficult. The results are not purely the examinable achievements of the learners - attitudes and behaviour patterns of those using the media are also important, as are changes in the system caused by the existence of the media. It is only within the context of the whole system that they can be judged. Here, operational efficiency is not enough. There are media projects in themselves smooth-running and apparently efficient, but which contribute very little to the overall effectiveness of the system.

From the range of projects which have been studied in some detail it has been possible to isolate factors which have consistently contributed to their effectiveness. Rather than present these in a random order, it may be appropriate to discuss them as groupings of the main processes of what, by now, has come to be known as the 'systems approach' - definition of objectives, review of alternatives selection and implementation of a possible solution and finally evaluation and appraisal of results.

Definition of Objectives

Past research evidence in the field of educational innovation would seem to indicate that failure is inevitable if a decision is taken to employ a particular piece of equipment or technology or strategy without first having ascertained that a real need exists. A problem is a necessary starting point - a potential solution is not. The need to provide education for isolated children in New Zealand, the need to improve the quality of education in Hong Kong, the need to produce more qualified teachers in Kenya the need to provide in-service training in new mathematics in Jamaica and the need to release university lecturers from repetitive lecturing in Scotland are all examples of needs which caused the new media to be involved in providing a solution.

In the determination of objectives it is of paramount importance that they are consistent with the overall objectives of the

educational system. No project is ever likely to be successful unless it is in broad harmony with official or national policy. Efforts to impose centralized material on a decentralized educational system are doomed to failure - yet many attempts have been, and are being, made to do this. The multi-faceted work of the Teaching Aids Centre in Tasmania contributes significantly to the rapidly decentralizing system of education whereas the ETV services in Hong Kong and Singapore both effectively improve their much more centralized systems. These examples illustrate clearly that the most effective solutions to problems are those that are controlled by the education system itself. The control of the media is central to their effectiveness. It appears from the studies undertaken that where the media are controlled and directed by the organization which is to use their service, this use is likely to be effective. Ministries or Departments of Education or other institutions which wish to use television for educational purposes would do well to study the examples of Hong Kong, Singapore, the University of Glasgow, as well as the Caribbean regional project and the Alberta and Newfoundland experience. In these projects - as well as most of the others from the case studies - responsibility for media use has been with the educational authorities. Problems of split control and division of responsibilities have not arisen.

It would appear that there is a positive relationship between the growth and success of media projects and a process of change occurring in the educational system or even society as a whole. Change and innovation take place most effectively in a dynamic situation rather than in a climate of conservatism. This is clear from the case studies. Almost without exception, the educational systems concerned have themselves been undergoing change - whether quantitative expansion, as in Zambia, qualitative improvement, as in the Caribbean, or change in emphasis and content, as in England. From the wide range of changes affecting all the educational systems considered during the course of the investigations, there are three situations which are worthy of special mention. In Australia - and in Tasmania specifically - in Alberta and in the British Solomon Islands Protectorate, far-reaching and exciting developments are in progress. In each of these areas

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reports have recently been produced on the educational systems. A very significant feature of each is the high degree of involvement by the population and by the teachers whose participation has been sought. There is strong evidence of a climate of change. Dynamism breeds innovation.

Where successful projects have been created, there has been a detailed prior knowledge of needs and requirements. Vague political statements like 'television would be useful in schools' have led to many failures. As happened, for example, in Glasgow University and in Hong Kong, detailed analyses of users' requirements were produced before decisions were taken. Attitudes of teachers are of vital importance as was appreciated in the Caribbean Regional Project. The greater degree of pre-planning based on realistic data and information, the greater the chance of success. Although this may appear to be a statement of the obvious, nevertheless, more than one media project has got under way without any real knowledge of the extent or nature of its target audience.

Objectives do change and become modified with time. This is in the nature of successful projects. It is important that the projects themselves can change and adapt to meet these new objectives. The case studies show many examples of this. The role of the Correspondence School in New Zealand is now to cater much more for the socially and emotionally isolated rather than the physically isolated. The Singapore ETV Service now provides a service for primary schools as well as secondary. The Zambia Correspondence School now provides courses for primary school leavers for whom no secondary school places are available, as well as catering for the needs of adults who find that professional advancement is denied them through lack of academic qualifications.

Review of Alternatives

Although it is mainly on the basis of expressed needs and stated objectives that the most appropriate medium should be selected, nevertheless there are other constraints which can affect this choice. To create a national educational television service in a very large country with a widespread population and little electrification would be counter productive. Available resources (or their lack) must also be taken into account. Resources are not purely materials and equipment - or even just finance. Human resources are of vital importance. People who can lead and inspire others, people who can benefit from specialized training, people who are recep-

tive to new ideas and respond to innovation are just three types who are essential to the effectiveness of any project using the media. Almost without exception each of the case studies revealed the influence - either past or present - of dynamic leadership.

Leadership without professional support of the users is worthless. By and large, the users of media projects are classroom teachers in formal educational systems or extension workers in informal education. The teaching profession has often been accused of being one of the most conservative of occupations and one which is resistant to change. This conservatism is not necessarily a permanent feature of all groups of teachers. Receptivity to change can be created and cultivated. From the studies undertaken, particularly where television and radio have been used, it can be seen that considerable energy and effort have been expended to involve the users. Involvement in the system by the users seems to be essential. A one-way flow of information does not appear to offer any noticeable teaching benefit. Through committees through pre-service and in-service training through personal and face to face contacts, two-way communication can be developed. It was only after consultation and discussion with the users that the Hong Kong ETV Service formulated its plans for expansion. It is on the basis of its contact with teachers that the Teaching Aids Centre in Tasmania plans its activities. Television in the University of Glasgow is very much a service facility which is available to the lecturers. The growth of the Television Service is a measure of the degree to which the lecturers did and do accept change and innovation.

A further feature of the human resources is the requirement for trained manpower necessary for effective use of the media. Media work invariably requires specialist training. As can be seen from Appendix I, the range of training centres is much less extensive than the range of media projects. Training facilities should be developed to include electronic engineering, graphic arts and other support services. Training is time-consuming and expensive.

In realization of this, there is now a growing tendency for much more care to be given to the problems of recruitment. Effective recruitment is a sine qua non for effective training. It is difficult to generalize about recruitment procedures for media work. The aptitudes and abilities required of an educational producer are not those required by an administrator or a headmaster nor of a journalist or gen-

eral broadcaster. Teaching experience is almost a universal requirement - especially for production work. Subject specialization appears to be less important. More and more the tendency is towards the 'educational communicator'. Whether as a specialist working in the fields of correspondence course writing, radio or television production or as someone with more embracing responsibilities covering more than one medium or element, a new breed of professional is emerging. Educational technologist may not be his exact description but educational technology describes his field of activity.

The creation of cadres of specialists within Ministries and Departments of Education does however, create problems. Media activities tend to attract to themselves enthusiastic and creative individuals with bright career prospects. Very often they are people with the potential to rise to very high positions within the system. Media projects normally have few employees in comparison with the whole system. Moreover, the projects are often regarded as being a limb of the system. Promotion prospects within them can be restricted. Because of their size and increased specialization of their staff, projects can threaten to take their staff away from the mainstream of career advancement. Where these worries and fears can be allayed by enabling movement into and out of the media service, then its long-term effectiveness is enhanced. The New Zealand Correspondence School provides a very good example of complete integration of its staff within the framework of the teaching service. However, a corollary to this is that the development of projects can be inhibited by the transference of key personnel to other areas where their promotion aspirations can be met.

Most initial training for any media project has to be obtained from an outside source. It is a measure of the success of a project if it can establish and develop its own in-service training. In spite of achieving this satisfactory position many of the projects studied expressed a desire to participate in higher level or more senior training. Isolation, in the professional sense, was an oft-quoted complaint. Producers complained that their creative batteries needed recharging. If media projects can release personnel to attend international conferences, exhibitions and competitions, this factor can increase the quality of its output as well as maintain a high level of morale and interest in the staff.

It is impossible to be dogmatic on the choice of the most appropriate medium to meet any particular problem. Each pro-

blem must be studied in the context of the educational and social environment in which it is set. Each medium has its basic strengths and weaknesses. Each medium has over the years been well tried and tested. Lack of success is seldom due to the medium itself, but to the way in which it is applied, or not, as the case may be. It is not the function of this Report to assess the theoretic aspects of the various media. This is covered in numerous textbooks. Arid and often acrimonious debate has taken place in the past over relative merits and demerits of the various media. In this context it is worth recording an entry which appeared in the Tasmanian Educational Record of November 1937.

In comparing the film with other forms of visual illustration, lantern slides, epidiascopes and the educational visit, it is clearly shown that each has its own special function and that the film does not replace these older forms - it supplements them.

The interrelationship and interdependence of the media is still vitally important today.

It is the practical use of the media which this Report has studied. Although the media have been categorized into radio television, correspondence education, and central resources, one of the most obvious factors which has emerged is that nowhere is one medium used in isolation. Print in one form or another is used in each project. In addition, the interdependence of the other media is also being recognized and developed. The multimedia approach is now accepted as being the most effective method of using the media. Here again the same proviso exists which requires the application of the technique to be the means to an end and not an end in itself. There is no merit in employing a vastly expensive and sophisticated range of media to achieve a result which could equally well be achieved by using textbooks, for example.

In any consideration of alternative strategies, financial implications must be paramount. Although the media are, or can be, expensive, the studies show that effectiveness can be achieved with modest resources. The use of cassettes in Jamaica and the BBC Local Radio educational activities are both examples of low-cost projects. Financial problems feature prominently in those projects which have been less than successful. Note worthy factors recur in the successful projects. Initial capital funding is important, but even more important is pro-

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vision for adequate recurrent expenditure. Media activities require flexibility, rapidity and ease of spending funds. Overly bureaucratic controls can frustrate and delay production activities. Ease of financial administration is a consistent feature of successful projects.

Any breakdown of the expenditure on any project of any scale (with the exception of correspondence education) will normally reveal that the costs of receivers (or cassette recorders or video-cassette recorders or film projectors) are greater than the costs of the central projection facility. If a media project is to be effective, then provision for receivers has to be built into the original planning. Any media system which concentrates only on its production centre is highly likely to encounter problems. Receivers form part of the total system and, as such, are the responsibility of those managing the system.

Problems of compatibility and standardization of equipment are reduced and maintenance is facilitated if the receivers are 'built into' the system. The experiences of the Alberta Department of Education, of the Teaching Aids Centre, Tasmania, of the Hong Kong ETV Service, are just some of the more obvious instances where the importance of this is realized.

Selection and Implementation of Solutions

A study of the processes by which decisions were reached to select and implement a solution to an educational problem by the use of media is of interest. The importance of leadership in projects has already been stressed. The importance of high-level backing and authoritative support is also important. Media projects do not just happen. They are the result of decisions taken at senior levels of management. Luke-warm support at this level can be inhibiting at best. Continuing participation in overall policy-making by senior officials is important. The University of Glasgow Television Service is guided by a very senior and influential Television Committee, the Singapore ETV Service has a wide-ranging and senior level committee to provide guidance.

From the wide range of successful projects which have been investigated and also taking into account some less fortunate examples, it would seem that there is a critical level of size for projects to be or become effective. Although projects may start with a small-scale pilot phase it appears that to command attention and respect they must be of a size both to

make an impact on the system and to be self-supporting. Economies of scale are important, particularly in systems where finances are scarce. Whenever possible the media used should reach the whole of the target population - whether this be comparatively few children living in isolated settlements in New Zealand or mathematics teachers in remote schools in Jamaica or the entire primary school population at certain levels in Hong Kong. Since the media are essentially concerned with communication, they must be seen to communicate with their entire audience. Educational television services which can only be received in schools in urban areas, resource centres only serving adjacent schools, educational radio services only broadcasting for an hour or so each week, all fail to exploit their full potential. Underdeveloped states of media use attract unfavourable comment and reaction. Unless a project can achieve full coverage of its intended target audience, its future success would appear to be in jeopardy. Small experimental programmes often remain small because they were not seen from the outset as the first stage in a major attack on a major educational problem.

Time is an important factor in the development of projects involving the media. The main feature which recurs throughout these case studies is that many of the projects have taken longer - often much longer - than the original time planned and scheduled for their development. Several projects made a virtue out of this situation by modifying and refining their planning and by establishing contact and creating a favourable climate of opinion in their users.

The converse of this occurred in a number of situations outside the scope of this study. Here the media were introduced before adequate planning and preparation had been undertaken. A decision, often taken at political level, or as a result of external influences, was taken to introduce some form of educational technology. Very often a starting date was included in the original decision. Inevitably this date precluded the full process of preparation. A poor start to a media project causes damage which is very difficult to rectify later. The importance of an effective and efficient start is apparent from a number of the case studies.

Evaluation of results

The only real purpose of evaluating a project is to enable modifications and improvements to take place. Evaluation for its own sake is a profitless exercise. Most of the projects studied have a built-

in system for continuous evaluation which enable the project to be modified. Again the need for projects to have flexibility is highlighted.

The studies have shown the wide range of educational and instructional purposes in which the media have been used effectively. Primary school, secondary school, university level, teacher education, non-formal education, are areas of use. The range of subjects is equally extensive. It would be tempting to conclude that wherever an educational problem existed, the media could be used to overcome it. This is both over-simplistic and dangerous. The most important conclusion from this range of studies is that where specific problems or situations have occurred, then specific remedies have been applied. These remedies have been applied within the context of the system. The degree of effectiveness has varied. Increase in passes in examinations, change of attitude in teachers, improvement in quality of instruction, reduction of feelings of isolation, provision of education to those who for social, economic, physical or emotional reasons cannot otherwise obtain it, the introduction of new cur-

ricula are among the goals which have been achieved. Some are quantifiable; others are observable. To compare the results achieved by the use of television in Singapore with those of using videotapes in Newfoundland or those of using correspondence education in Kenya, is meaningless. Even to compare the results of the use of one medium in different countries is likely to be counter-productive. Results can best be appraised within the context of the system in which they are achieved. This is the real test of effectiveness.

Success is a variable quantity. As has been mentioned earlier, it proved an elusive term to define at the beginning of the study. After the study had been completed, it was possible to reaffirm that the pragmatic definition which was accepted was useful and effective. This definition is worthy of repetition: a project can be deemed to be successful if after a number of years of operation it fulfils two conditions - that its financial backing and support is maintained or increased and that the number of people using the service is maintained or increased.

Summary

In summary, the following factors are those which on the basis of the studies undertaken appear to be of major importance in determining the success of a project which uses the new media for educational purposes.

1. The existence of an educational problem - properly defined - is a necessary starting point.
2. The production and use of the media should be controlled by the agency or institution in which the problem exists.
3. Media projects are most likely to be successful when introduced into systems which are themselves undergoing change.
4. Projects should have the capacity and capability of changing and adapting to meet new objectives as they arise.
5. Human resources are important; particularly important is strong and positive leadership and a high energy level in the staff employed.
6. The users of the media service must be involved in the process to the greatest possible extent.
7. Recruitment is an important part of the training process for media work. Teaching experience appears to be important for 'educational communicators'.
8. Media projects should offer prospects for career development for their staff.
9. Successful projects are able to provide their own basic in-service training.
10. The multi-media approach, used where appropriate, seems to be more effective than the use of a simple medium. In this context it should be noted that nowhere was one medium used without the accompanying use of printed materials.
11. The provision of adequate recurrent expenditure is essential for effective projects.
12. Flexibility and ease of this expenditure, coupled with non-restrictive administrative procedures, contribute to effectiveness of media projects.
13. Media projects should be planned to include the receiving equipment which is used; provision for this must be made.

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14. Provision for maintenance of receivers or equipment must be built into the operation of the project - either directly, or through contractors.

15. High level support from other departments is important and the project must be in harmony with national objectives.

16. Projects must reach a 'critical size' before they become effective; provision for growth and expansion must be built in.

17. Media projects often take longer to develop than the original planning anticipated.

18. It is important that the launchings and beginnings of media projects are well planned and executed.

19. Projects should be able to respond to the recommendations of the evaluation processes which must be built into the system.

20. The media have been used effectively in a wide range of situations of differing level, subject and area. Each use is a specific application in a specific situation.
