

## FEATURE

### A significant moment . . . ? University Television, Aberdeen

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**DOI:** <https://doi.org/10.26203/hy67-vt60>

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**To cite this article:** Steele, M., (2018). A significant moment...? University Television, Aberdeen. *Education in the North*, 25(3), pp. 106-122.



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## **A significant moment . . . ? University Television, Aberdeen**

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### **Introduction**

In 1963 the Robbins Report recommended that the number of students admitted to higher education in the UK should rise from 216,000 to about 390,000 by 1973/4 (Robbins, L.C. 1963, p.277). Robbins' recommendations influenced a number of further reports aimed at allowing proposed levels of growth to be accommodated without detriment to students or institutions, one of which was the Brynmor Jones Report, *Audio-Visual Aids in Higher Scientific Education* (1965). Dr Jones and his colleagues recommended that providing centralized audio-visual services within institutions would increase the quality and extent of communication between lecturers and students, enable increases in audience size and be more cost-effective than encouraging smaller facilities to be established in individual departments (Jones, B. 1965, pp.1-4, 91-95). Originally, as the name of the Report suggests, developments were particularly intended for use in science-based and medical science contexts, but arts and other faculty staff objected to the possibility of being excluded, and access became widely accepted for all teaching departments, and university services where considered appropriate.

Some universities in England such as Leeds, Manchester, London, Birmingham, Hull, Bristol and others moved to introduce extensive monochrome television production and internal distribution services. A few, such as Newcastle-upon-Tyne, initially opted for a predominantly film-based service, although films took longer to complete and incurred external laboratory development and printing charges. Videotape-based services, on the other hand, cost more to equip initially, but less for ongoing recording materials, attracting no laboratory costs and delays and keeping the whole operation conveniently in-house. Also, the videotape itself could be re-used when needed. In Scotland, Glasgow and Strathclyde Universities pooled their resources to provide a joint service for both institutions, Glasgow offering television coverage and Strathclyde film and animation facilities. Edinburgh University initially went into partnership with a regional independent broadcasting company, Grampian Television, to utilise their technical expertise without needing to recruit engineering specialists of their own at the outset.

### **The case of Aberdeen University: Beginnings and prerequisites**

Sources can vary for accurate numbers of students but in the case of Aberdeen University the Robbins Report led to a rise from approximately 2,008 in total in 1961 (Hargreaves, J.D. and Forbes, A. eds. 1989, p.140) to approximately 5,727 by 1971 (Wright, E.M. 1971, p.1). The University Grants Committee (UGC), then source of finance for universities, asked in 1973 for an increase at Aberdeen to 10,500 students by 1981-82, but this was considered unrealistic, and such a level of expansion at the University did not happen at that time (Hargreaves, J. 1989a, pp.9-12, Hutchison, I.G.C. 1989, pp.112-118).

When it came to inaugurating an audio-visual service for use by all of its teaching departments Aberdeen University did not move quickly into unfamiliar territory, preferring to see how other universities were managing before committing itself to major expenditure. Eventually in 1969 the University's cross-discipline Educational Technology Committee (ETC), convened by Professor George Burnet (Chemistry), opted for video as the medium of choice for its centralized audio-visual service. Because the UK was currently in the process of converting to colour television for broadcasting purposes, the ETC felt that for Aberdeen University to do anything less would be a retrograde step, and it was decided that all Faculties should have access to closed circuit broadcast-quality colour origination facilities. This decision was particularly aimed at meeting the needs of the medical and science departments, allowing procedures to be viewed in detail as they happened or quite quickly thereafter by increasingly large numbers of students, although it was understood that there was potential for all teaching departments to benefit from coverage in colour rather than monochrome because that should replicate the reality perceived by the human eye. Premises understood were that the service should come free of charge to all teaching and service departments, that it should be possible to consider subject content not previously feasible using monochrome equipment, and that students would not take learning materials seriously if image quality did not compare favourably with broadcast programmes they viewed in their own time.

The main source for information in this feature other than items with specific references has been my personal experience during 10 years as the first Television Service Production Assistant, appointed by the University in 1971. Research methodology consisted of empirical observation and shared experience with other members of the Television Service production team and subject specialist members of University teaching staff during that time. The rationale has been to provide a record of a short-term development (in terms of the University's history as a whole) that may have enabled some original approaches and outcomes for delivery of learning material.

### **The people involved**

The University appointed Alan Grimley, who had been Director of *Science Fair* and Producer of *Young Scientist of the Year* in the Science and Features Department of BBC Television, to direct development, and he took up his post in September 1970. Shortly thereafter it appointed James Woodward-Nutt, also from the BBC, as Senior Television Engineer to oversee technical development, and the present author who had teaching and educational television experience in a school context to work directly with lecturers to produce learning materials. My designation was Production Assistant rather than Project Director, lest lecturers feel they were being dictated to in their subject areas by people unfamiliar with their specialisations. To cope with demand it soon proved necessary to recruit a second Production Assistant who had previous experience with the Glasgow University Television Service.

A production and replay team was then built up over ensuing months and years with engineering, graphics, lighting, camera and sound operating skills. This team varied in numbers between 10 and 18 at different times, but to satisfy University requirements it was very frequently necessary to seek additional help from teaching department staff and students.

### **The technical equipment**

With the assistance of former colleagues from the BBC, Alan Grimley and Jim Woodward-Nutt formulated plans to provide the University with technical facilities that would be as flexible as possible, with a unit of three colour television cameras attached to a mobile control room housed in a medium-sized van, otherwise known as a 'scanner'. This unit would be able to rig-in to work in any department within the University on each of the three main sites at King's College, Marischal College and Aberdeen Royal Infirmary, Foresterhill. Other potential venues for production were many and varied and included the University's research facilities at various locations in the north and north-east of Scotland.

To set this development in context; only as recently as 1966 the BBC had begun to broadcast television programmes in colour on BBC2, following with BBC1 in 1969, making the UK the first country in Europe to do so, and the BBC was followed by the larger Independent Television (ITV) companies. The coming of colour meant that television could approach levels of realistic representation hitherto restricted to film. In competition with two other companies, Electrical and Musical Industries (EMI) sold the last five on the production line of their broadcast quality 2001 camera channels to Aberdeen University, three of which were fitted into a much smaller vehicle than was customary for broadcasters (Figure 1, Figure 2). Although colour television cameras were big and heavy then, (four people were needed to carry each one with its lens in place) they could be rigged-in to surprisingly small spaces. The two-inch video recorders used by broadcasters at that time were too cumbersome for flexible working, so a slight drop in image quality was accepted for recordings with the adoption of one-inch helical scan recorders made by the American International Video Corporation (IVC). With delivery of the scanner in January 1972, it is understood that Aberdeen became the first university in Europe to be fully equipped to produce high quality colour television recordings for its students.



Figure 1: Scanner vehicle with its 3 EMI 2001 cameras.



Figure 2: Mobile production control room inside scanner.

By 1974 the University provided the Television Service with a technical master control suite for recordings and replays on the King's College campus, together with a studio measuring 30 feet by 40 feet, in purpose-built accommodation shared with a new Language Laboratory. Duplication of control room facilities was deemed to be unnecessary for operation of the studio, and the mobile control room was routinely used on a drive- and plug-in basis. Cabling of a distribution system around the majority of lecture rooms on the Kings and Foresterhill sites continued, with the addition of video-cassettes (by then established) to enable replays in uncabled areas. Money was not available to provide television receivers for every lecture and seminar room, so large Decca monitors on stands with wheels were trundled and plugged in as required.

### **Interface between teaching staff and Television Service**

At the outset, lecturers asked whether it was intended that the Television Service would be replacing them with television monitors in lecture and seminar rooms. This was not a silly question because when the Open University started transmissions in 1971, they did just that, although they soon developed more engaging techniques than reliance on talking heads and white boards. However, the aim at the outset at Aberdeen (a residential university) was not to reduce the contact time of teaching staff with their students but to provide an additional facility to bring the outside world into the learning environment and, where applicable, to recreate the past as authentically as possible. The intended means was production of audio-visual inserts for lecturers to incorporate into lectures and seminars where and when required. At Aberdeen University development of single-day workshop courses was made a priority to exchange views with teaching staff to find out what they needed from television and to explore what it could do for them.

The workshop course days were of key value towards realising aims for television usage within the University. By 1974 some 200 lecturers had attended and this core group proved to be the main users of the facility (Grimley, A. 1974, pp.2-3). The day began with a demonstration of how colour television works at a time when the receivers were a fairly new development even in the home, followed by an initial exchange of views about possible uses and requirements in Higher Education. It quickly became obvious that lecturers would have limited time to contribute to the actual making of recorded material and, after initial planning consultations, much of the work of production would need to be undertaken by Television Service personnel. After a coffee break, the rest of the morning was taken up with rehearsal and recording of a short pre-prepared script of general interest with the 6 or 7 lecturers from different disciplines on the course performing almost all of the technical camera, sound and vision-mixing tasks with help from Television Service staff. Lunch then intervened to allow stress levels to subside, followed by a viewing of the recording and a final discussion about how the experiences of the day might affect teaching and learning methods and outcomes. For the Television Service these courses resulted in many requests for support with lecturers better able to relate to conceptual issues involved, scripting techniques and contact with hitherto unfamiliar production practices. Some lecturers would arrive for an initial planning discussion with scripts already laid out in columns ready for recording, others wanted help to put flesh on their ideas. Either way, it was a most fulfilling area in which to be working, with varying types of information from disparate disciplines needing to be packaged and presented in often original ways accessible to specialized target audiences.

From early on, it was understood that a typical student's (if such a person could be said to exist) attention span was about 20 minutes, so recordings most often did not exceed that length and frequently were much shorter. Sometimes a single item would be recorded, sometimes a lecturer would call for several pieces of video of a minute or two in duration, depending on subject requirements. Many lecturers understood that the introduction of a video clip could enhance class retention by providing variety to the lecture format as well as by importing interesting and relevant material from the outside world.

Broadcasters are always concerned to increase their viewing figures by making their programmes more entertaining. This was one problem that the Television Service did not appear to have: audiences were largely captive, so entertainment per se was not a priority consideration. On the other hand engagement definitely was important, as was the need to explore precisely what information particular groups of students required and how best to present it for their specialist needs. The latter was a creative exercise that came to be jointly undertaken by the Service and academics as, during the 1970s, teaching qualifications were not as widely recognized in some departments as subject expertise. Nevertheless the recordings did have to capture the interest of their recipients, so some stimulating presentation elements were needed and, after all, people can learn from judiciously inserted lighter moments.

Although the ETC had the vision and found the means (with the support of the UGC) to realise a ground-breaking facility, development was not without its problems. Early on and throughout the life of the Service, personnel were often required to work unsocial hours to fulfil requirements and the University had no provision for payment of overtime. These tasks frequently fell to the Television Service's technicians who appreciated that they could earn higher salaries with commercial companies outside the University (Grimley, A. 1974, pp.1-2). The only way to recompense them was with time-and-a-half or double-time off work, and this had a serious knock-on effect upon recording and replay activities during the normal working day: a satisfactory solution was never really achieved.

Enthusiasm for realistic learning support materials on video led to an objection from the Professor of Education John Nisbet to the effect that there was too much emphasis in the University on technology and not enough on the quality of teaching (Grimley, A. 1977, p.1). Until the development of smaller cameras and other hardware, which came later, the processes of rigging-in and -out of the Service's equipment and the time it took to achieve sought-after quality did seem excessive to some users. However, and in no way related to this, many University staff and students were keen and unstinting in their support for the Service and its activities, and spent many hours working cameras, floor managing, scene shifting and painting for departments other than their own to help achieve useful and quality products. For this, personnel in the Television Service were heartily grateful and relieved.

### **The recordings: how they were conceived and developed**

With the arrival and commissioning of the scanner in January 1972, much of the initiative for actual use of facilities passed to teaching departments. Uses of monochrome television in Higher Education were well established by that time, but the addition of colour allowed for new thinking. Here are descriptions of some of the more memorable productions.

The Regius Professor of Medicine Alexander Douglas wished to create a realistic medical textbook on videotape for his students. The production team with the scanner spent two weeks at Foresterhill recording procedures, patient examinations and interviews, many of which revealed conditions requiring accurate colour representation in order to begin that process. Some of the recordings were two or three minutes long, some longer. We came away at the end of that fortnight with 23 subjects recorded and ready for use. Thereafter one of the 2001 cameras was permanently available in Aberdeen Royal Infirmary, providing footage of procedures and operations, both recorded and live. This was one of the few occasions when the EMI camera proved to be too large for the confined space in small operating theatres, and as the size of colour television cameras reduced over the years, a single smaller model was introduced to replace it. The production unit also moved into the Maternity Hospital for two weeks, working in shifts, to record the births of numerous babies and obstetric and gynaecological procedures as they occurred.

The present writer recalls the day in 1973 when Dr Bill Kirton of the French Department arrived with a production-ready script for *L'Éducation Sentimentale: Impressions and Perceptions in Flaubert*, which utilised contemporary French Impressionist paintings to contextualize and clarify concepts and sentiments expressed in words by the French novelist Gustave Flaubert. It was apparent that such a format of contemporary and complementary images, words and music (with the help of Drs David Irwin, David Mannings and John Gash of History of Art and Dr Roger Williams of the Music Department) could be utilised to represent the past as authentically as possible for many other Arts departments in the University, and no time was lost in floating this idea at their departmental meetings. The use of as much contemporary visual, verbal and musical material as possible helped to ameliorate “. . . projecting onto the ‘past’ the assumptions of the present” (Giddings, R. et al. 1990, p.xi). A number of Royal Television Society awards that the Television Service subsequently received were for projects more or less related to the ‘Flaubert formula’.

“For two weeks in June a small convoy journeyed over single-track roads, from seashores to peat bogs, from old lime kilns to young forests. The vehicles comprised the Television Service’s mobile unit, an army generator and a Botany department Land Rover. The locations were within a thirty-mile radius of the University Field Station at Bettyhill in Sutherland. The purpose of the visit was to record on video tape material that was either transient or seasonal in nature, material that can now be used for teaching by the Botany, Geography and Zoology departments throughout the year.” (Grimley, A. 1975, p.23)

Fortunately, there were plenty of students there as well to help with the heavy lifting. (Figure 3) Camera cables then were 2 inches in diameter and some were 200 feet long.



Figure 3: Students and crew members negotiating peatbog with camera cable

Dr David Hewitt of the English department wanted his students to make a recording of the BBC television play *Emma's Time*, by David Mercer, lasting one-and-three-quarter hours. It was agreed that Dr Hewitt would direct the project with help from Television Service staff. Students, as well as forming the cast, operated cameras, sound equipment and provided the studio crew. The studio itself was not big enough to hold all the sets at once, so rehearsals and recordings took place over a period of four days with sets being changed and lit during the night ready for the next day's recordings, as they would have been in a broadcasting studio.

Isa Cochrane-Minio, a PhD student from the History department and her supervisor, Dr Judith Hook, wished to include a videotape re-enactment of a street carnival from Italian Renaissance times as part of Isa's thesis. This necessitated building a large set in the studio. (Figure 4) visualized from contemporary artworks, representing a corner of the Piazza della Signoria in the city of Florence.



Figure 4: Studio set construction of corner of the Piazza della Signoria, Florence.

The Television Service worked with a local early music group, the Kincorth Waits who made their own instruments, and employed *Commedia dell'arte* miming techniques with local actors as well as producing realistic costumes with the help of the then Northern College of Education (Figure 5).

“It is unlikely that Dr Peter Boyle, Lecturer in Zoology, ever imagined that a group of distinguished academics and television producers would meet to devour a five course meal before watching him dissect an octopus. That they did, may require some explanation. The occasion was the presentation of the Royal Television Society’s [RTS] Scottish Awards for the best non-broadcast educational programme which, for the fourth successive year, has been won by the University of Aberdeen. The judges considered the recording ‘dignified and of great clarity’ deserving of the Society’s Category ‘A’ Award.” (Grimley, A. 1980, p.27)



Figure 5: Scene from Florentine Carnival. I am afraid at the time I missed noticing the spectacles.

In fact the Television Service won the RTS award for the best non-broadcast educational programme for six successive years, from 1976 through 1981, and once for initiative and enterprise. The subjects were:

*Rossetti and the PRB*. Producer: Dr Isobel Tate (Murray) English. Best Non-broadcast Educational Programme 1976.

An introduction to the poet and painter Dante Gabriel Rossetti and his involvement with the Pre-Raphaelite Brotherhood, set in the context of their time with contemporary words, images and music.

*Children Solving Problems*. Producer: Dr Derek Boyle, Psychology. Best Non-broadcast Educational Programme 1977.

Groups of children, ranging in age from 5 to 12 years, solve problems involving conservation of number, family relationships, Bruner's transposed matrix, moral dilemmas, probability, etc. The purpose of the programme is to demonstrate the growth of understanding from the intuitive stage to that of formal operations.

*Florentine Carnival*. Producers: Ms Isa Cochrane-Minio and Dr Judith Hook, History/Italian. Initiative and Enterprise 1977.

Re-creation of and background to the street carnivals of the time of Lorenzo de' Medici. A group of strolling players present songs, poems and a display of tumbling.

*Window on Wessex*. Producer: Professor Ronald Draper, English. Best Non-broadcast Educational Programme 1978.

Introduction to the Dorset and Cornish environments in which the novelist and poet Thomas Hardy grew up and lived, featuring its effect upon his work and illustrated with his own words combined with contemporary images and music.

*Dissection of an Octopus*. Producer: Dr Peter Boyle, Zoology. Best Non-broadcast Educational Programme 1979

Demonstration designed to provide reinforcement for student dissection techniques, aimed at reducing subject mortality.

*Steven Wheeler - Bankrupt*. Producer: Dr William McBryde, Law Faculty. Best Non-broadcast Educational Programme 1980

Dramatisation of a sheriff court examination of a bankrupt.

*The Interview*. Producer: Mr David Haggart, Careers and Appointments Service. Best Non-broadcast Educational Programme 1981

Two students attend 'milk round' interviews and show by example how and how not to make the best of their opportunities.

It is not possible to be absolutely precise about the number of original and off-air recordings provided, but by 1979 there were more than 2,000 items in the videotape library (Grimley, A. 1979a, p.1), the Service replaying 440 of them during that year for 49 of the University's teaching and service departments (Grimley, A. 1979b, p.1). However, this was not the whole story because, for instance, it took no account of the regular weekly transmissions to medical lecture theatres of post-mortems as they happened in the department of Pathology at Foresterhill. This was an early intimation of present-day routine integration of audio-visual materials as events unfolded in the learning environment.

Production Assistants attended replays of recordings with which they had been concerned to monitor their reception and ask students afterwards whether they had found the video helpful for their studies.

### **Challenges and solutions**

Chemists Drs John Binks and John Duffy wished to coordinate laboratory demonstration and graphical information to illustrate absorption characteristics in *Ultra-violet and visible spectroscopy*. This entailed the on-screen display of a spectrum, or continuum of colour formed when a beam of white light is dispersed, as by passage through a prism, so that its component wavelengths are arranged in order. Good as they were, even the EMI cameras were unable to accurately resolve certain hues midway between the three primary colours of red, green and blue (Anglican bishops and Roman Catholic monsignors often used to complain that their

purple vestments did not look 'quite the right colour' on television). It was found by experiment that on camera the colours 'banded' with hard edges rather than blending into each other subtly as required. (Figure 6) To solve this, the Service's graphics department had to resort to fooling the camera into thinking it was seeing something that it was not. (Figure 7) The box that you see had a 'letterbox' opening at one end and a number of strips of coloured gel cut to size at the other with a light shining down on them from behind. Focussing on the 'letterbox' end meant that the gels at the other end of the box would be out of focus, and this persuaded the camera to offer the result required. Nowadays there is no problem in creating this effect with digital technology.

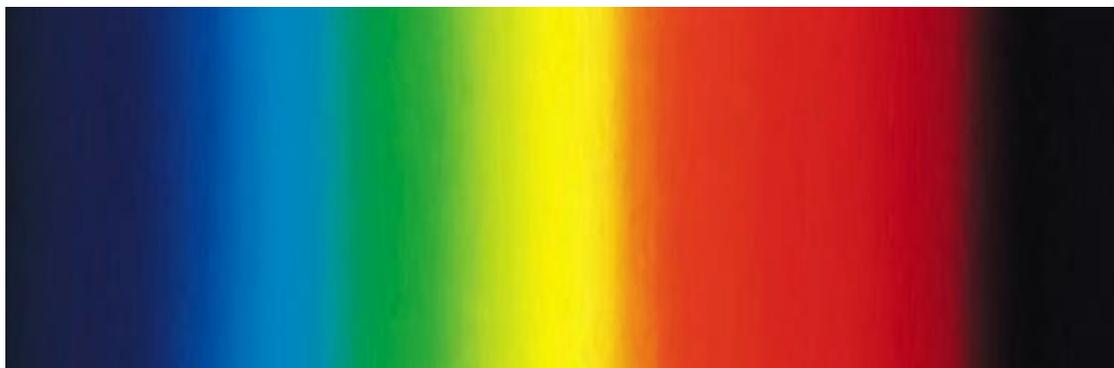


Figure 6: Observable spectrum, showing colours dissolving into each other

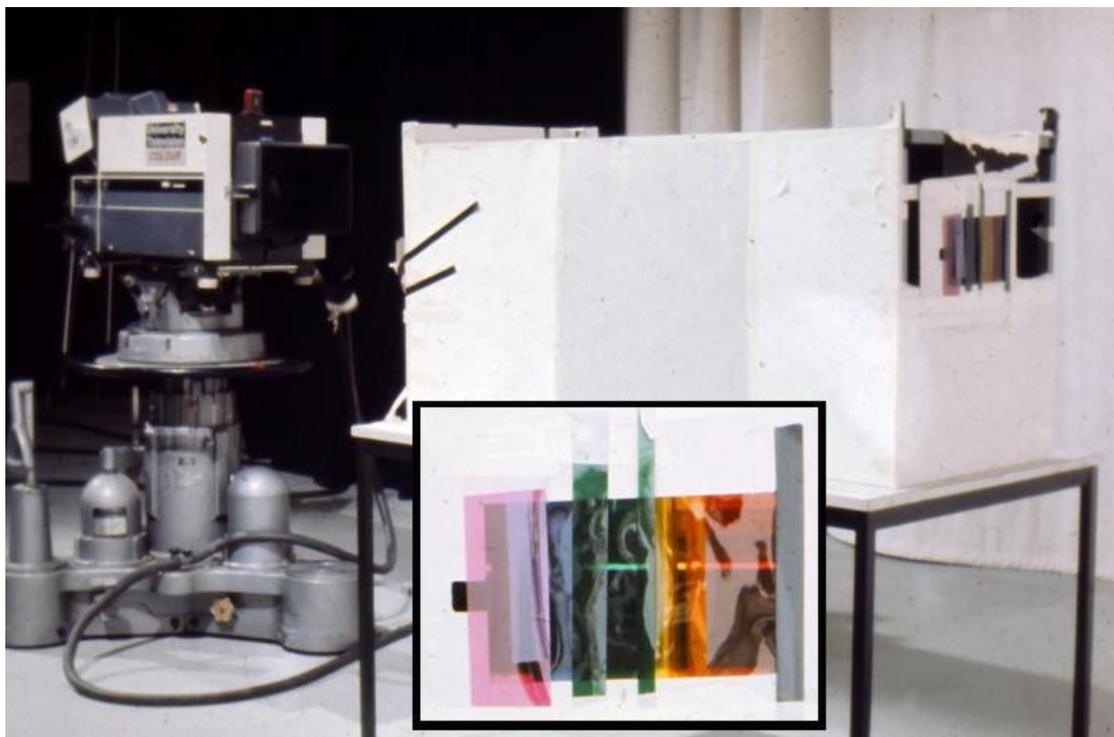


Figure 7: Box construction for observable spectrum effect, with gel strips inset

Well-equipped as it was, the Television Service did not have quite every facility that Production Assistants and lecturers would have liked to be able to call on. There was no telecine machine to allow high quality reproduction of still photographs or works of art in a production. However that was not a problem for long, as this image shows (Figure 8). This was a technique often employed by amateur film makers, allowing the camera to pan and zoom across details of still pictures as well as capture the whole image when required. When one of the recordings using this technique won an award, BBC engineers were quick to ask how it was achieved, because they were not then able to accomplish such coverage with a video camera. They smiled when told because, of course, the BBC did not resort to amateur methods. Since then this need has been recognized, means have been developed and, using digital technology, it also is a straightforward and relatively inexpensive process.

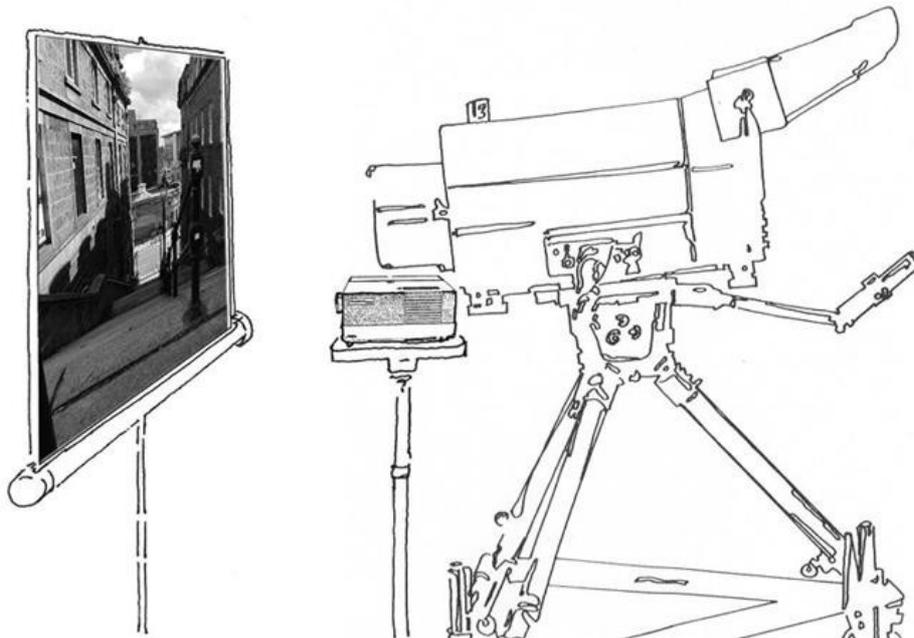


Figure 8: Setup for still image coverage

### Courseware?

The question arises, did we in the 1970s provide distance learning materials without the need for lectures and seminars for students to utilise at times to suit themselves, as the term 'courseware' is understood today in the digital age? Preliminary steps for such changes in delivery and application of learning support materials were discussed during the 1990s (e.g. MacFarlane, A., pp.135-141), so the simple answer must be 'No'. However, there were requests for some series of complete 'programmes' made to be used sequentially and independently by students, for example:

*Quantum Mechanics*, Chemistry (6 recordings, Dur: 24-34 minutes, 1972)

*Computer Programming in Fortran*, Computer Science (8 recordings, Dur: 27-40 minutes, 1974)

*Lipid Structure*, Biochemistry (8 recordings, 21-27 minutes, 1974)

The rationale given was that series of lectures with the same factual information were required to be delivered to different groups of students on a number of occasions each year, and that was considered not to be the most effective use of a lecturer's time. However, whether those programmes could now be termed 'courseware' may be a moot point as the term today is routinely linked with student access to learning materials via software on a computer. Personal computers were not widely in use while the television service was in existence and access to those series was via video-cassette after that technology became available.

### **Additional Outcomes**

Staff and students formed an interest group to produce and transmit a live weekly news programme, Dateline Thursday, to particular rooms on the King's College campus. These programmes were also recorded and replayed the same evening from videocassettes in halls of residence not on the cable network. The group, renamed 'Phoenix', also produced other programmes over the years, several of which won Scottish and British national awards. A number of students who worked with the television service over the years went on to successful careers in different branches of the media, and a two-year course was introduced to provide experience in television production techniques. Latterly, Aberdeen University also formed its own company AUTEL to utilise the expertise and equipment within the Television Service to bring additional funding into the University from outside contract work.

Co-production exercises including visits with the scanner to the Universities of Newcastle-upon-Tyne, Manchester and Sheffield were undertaken, resulting in a diverse range of programmes for Medicine, Dentistry, Music, Biochemistry, Geology, Social Work, Engineering and Ancient History. Also, the University Television Service regularly originated and circulated copies of programmes, particularly for Careers and Appointments services throughout the British university network.

### **Conclusions**

In 1984 the Television Service was terminated as part of the cuts that Aberdeen and other universities suffered at that time. As Professor John Hargreaves has suggested, ". . . Aberdeen (University) became particularly vulnerable to new government policies after 1981". (Hargreaves, J. 1989b, p.123) Other universities were able to anticipate the forthcoming computer revolution, and ease their audio-visual aids services into the new digital era. Aberdeen had to start its provision again from scratch.

By 2016/17, Aberdeen University had more than 14,000 students at all levels (University of Aberdeen). With the routine use of desktop, laptop and tablet computers amongst staff and students today, mediated e-learning is integrated significantly into courses and daily University life. Approximately 1,800 students at various levels are distance learners, spread across the different disciplines but with particular uptake in the departments of Engineering, Education and the Medical Sciences. Distance learning is generally on the increase: there is over three times

this number of students studying off-campus at the Robert Gordon University. Aberdeen University's VLE (Virtual Learning Environment) My Aberdeen provides courseware and links to the Blackboard and SafeZone Apps, the Learners Toolkit, the University's Facebook feed, the Student Learning Service, Library Services, the Careers Service, IT Support and Pastoral Services, with introductory videos outlining key components of each. Staff can produce online learning materials on their desktop computers and can initiate live tutorials including student presentations and input from around the world. Audio-visual support is provided in a range of fields that include Design, Print, A/V equipment, Photography, Medical Illustration and Video by the Media Services Group, comprising 24 support staff. Provision is still without charge to departments and commissioning of materials is undertaken through users' committees in the University's different schools and departments and also in response to requests by individual lecturers.

### **Acknowledgements**

In producing this paper I would like to thank Paul Logie and Mary Sabiston from the Special Collections Department of the Sir Duncan Rice Library at the University of Aberdeen for considerable help in sifting through uncatalogued papers pertaining to the Television Service during the 1970s and early 1980s, Alan Grimley for vetting the article for Television Service accuracy, Iain Harold, current Manager of the University's Media Services department for information concerning audio-visual provision today, and Dr Sara Preston for distance-learning particulars at the University. Nevertheless, any errors are entirely my responsibility as author.

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