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ABSTRACT

This survey sought to ascertain the extent to which individual target schools were equipped with television facilities, and the frequency with which the available equipment was being used by the teachers. The principals in the Borough of York responded to a Television Survey and a random sample of teachers responded to questionnaires. The results indicated: 1) the junior public schools were facilitated on a small scale compared to the equipment arrangements in the senior and secondary schools; 2) the rate of utilization was related to quantity of facilities, but not to reception quality and kinds of facilities; 3) overall utilization of the facilities was low; 4) utilization of facilities tended to be highest in the lowest grades, and decreased as school level increased; 5) primary and junior grade teachers used live T. V. broadcasts most frequently, while intermediate and senior grade teachers more frequently used video-tape recordings; and 6) the most often mentioned reason for non-use was inconvenient and rigid scheduling of programs. Several suggestions are made to improve both the quantity and quality of television utilization. (CH)

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UTILIZATION OF
AND
TEACHERS' ATTITUDES TOWARD
EDUCATIONAL TELEVISION FACILITIES

In the Schools of
The Board of Education for
the Borough of York

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I. UTILIZATION OF TELEVISION IN SCHOOLS: A BRIEF REVIEW OF THE TOPIC

Research has demonstrated that "under proper conditions" students can learn as well, or better, in a number of different subjects by instructional television (ITV) as by traditional classroom methods.* It is probable that these findings motivated much of the headlong spending by North American educators of educational funds on television equipment as soon as these funds became available. Now these consumers of the media hardware are concerned with the judiciousness of their investments; they are measuring rates of actual classroom utilization of television, and many are distressed to think that the ITV dividends have not warranted the ITV expense.

Recent findings of low utilization of television in the schools might be surprising to those who were expecting to find at least as wide acceptance of the medium as was seen more than a decade ago in Hagerstown, Maryland. Hagerstown, the centre of the Washington County Closed-Circuit Educational Television project (ETV) reported that instructional television constituted 10-14% of classroom time in elementary schools, 35% in grades 7 and 8, and 17% in grades 9 through 12. Every one of the 16,500 students in that school system received at least one period of televised instruction

* In his account of the "state of ITV research efforts" DuMolin (1971) explains:

The decade of educational television began about 1955 and was supported by such organizations as the Ford Foundation and the Carnegie Commission. Again a series of "evaluative" studies were done, much in the same style of the pre-1950 research on film. The most authoritative of these studies were: Kanner (1958) on the use of ITV by the Army; Carpenter and Greenhill (1958) on ITV in the university; Goapper and Lumsdaine (1961) on the relationship of student response in programmed instructional modes to televised instruction; and Chu and Schramm (1967) a review of the literature. In general, the findings from hundreds of studies show that ITV is of overall equal effectiveness when compared with face-to-face instruction.

daily (as cited in Ide, 1970). While these figures would lead to high expectations of the medium, it must be remembered that Hagerstown had the most intensively developed in-school television system in the United States, with grants totaling \$1,173,910, and contributions of more than \$300,000 worth of equipment. The utilization rates cited were at least in part the product of an extensive, systematic installation and utilization program, based on a "searching analysis of the system's goals" (Wagner, 1969). The medium was directed at achieving defined, targeted instructional objectives, and once instituted the internal school allocation of resources yielded priority to the utilization of the new medium. In a two volume work prepared for the Office of Education (Department of Health, Education, and Welfare), in Washington, D.C., Wagner (1969) proposes that ITV should be introduced into a school system only after such development has been planned and programmed fully. He states that "no evidence presently exists for assuming that every school system should have an ITV system, or that once installed it must be retained". To the contrary, "across the board" introduction of instructional television "should be regarded as short-sighted and counter productive".

Regrettably educational system economics frequently dictate spending policies which are not always in the best interests of education. It does appear that much of the rationale for equipping, to one degree or another, most school systems with television apparatus was based more on the immediate availability of funds than on concisely thought out programs for implementing the new medium once it was installed.

A survey conducted in 1967-68 by the Metropolitan Educational Television Authority (META) indicated that the average elementary school pupil in Metro watched one 20 to 30 minute program a month, while the secondary student watched half as often. In the same year the Educational Television Office of the Ontario Department of Education (ETVO) conducted a survey which showed even lower viewing rates for the Metro area, and went on to caution that those low rates were likely inflated because of the methodology of the survey (both as cited in Munro, 1969). Furthermore while the viewing rates in the ETVO survey showed low use of ETV in this city, Toronto had the highest rate of viewing in all of Ontario.

At this time Peter Dirr was collecting the data for his Ph. D. dissertation in New York. In his study of teachers using the WNDT broadcasts and services there (Channel 13 - N.Y.C.) he limited his investigation to kindergarten through grade six usage. While he found that the mean usage per teacher was 1.8 viewings per week, 42% of the teachers in his study never used the medium at all (1970).

Strikingly low percentages of usage are legion. Benton (1970) surveyed 16 urban centres in the United States, and showed that ITV utilization is less than 3% of actual classroom time. The Commission on Instructional Technology reported in January, 1970 that no more than 5% of classroom time at all levels of American education was in any way affected by the "newer media", which included film and program texts along with television.

In 1970, Robert Keith studied a junior school in the Borough of York which recently had installed receivers in each teaching area, co-axial cable internal to the school, a master antenna, and a video-tape play-back machine in the school office. Keith compared the number of live broadcasts viewed in each class per week with the number of video-tape recordings and films used. The average usage per class per week for both live television and film was 1+ each, while the average class weekly viewed only .25 video-tapes.

The teachers at Weston Memorial Junior Public School, also in York, were asked to keep records of their television viewings for a six week period in 1971. Their figures showed an average usage per teaching area of 2.16 viewings per week. These totals were comparatively high, and since the school was facilitated only by "rabbit ear" antenna reception, the researcher there concluded that ITV might be made even more effective if more extensive facilities were made available.

Dobosh and Wright studied television utilization in twelve schools in the City of Toronto in 1972. They found that 31% of all the teachers used the medium 2 to 3 times a month or more frequently (18% used it once a week), while a remainder of 69% presumably turned on their sets less than 2 times a month.

The single organization in Ontario with probably the most to lose or gain depending upon utilization of the educational television medium is the Ontario Educational Communications Authority (OECA). Established in 1970, this body is now responsible for the great majority of educational television broadcasting available to the schools of Ontario. The Research and Development Branch of the OECA provides interested parties

with utilization statistics based on quarter-annual "In-School Media Use Audience Surveys". Usually, however, these statistics are based only on the responses from schools which are television users. Working with the Metropolitan Toronto Educational Television Committee in the winter of 1972, the OECA polled a random, representative sample of twenty-nine schools from the Metro area - users and non-users alike (Metropolitan Toronto School Board ETV Committee, 1972). Only those totally new to the sad saga of ETV should have been startled to find that 68% of the teachers questioned never used television at all during the three months in question. More specifically, 80% of the teachers in the secondary schools never used ETV, compared with 65% in the intermediate schools, and 57% in the elementary schools. The survey conducted in the spring of 1972 by OECA (Kawashima, 1972) found approximately 35% of the teachers who responded to the questionnaire were non-users, and pointed out that "percentages of non-users are doubtless even higher than appears from this survey (because respondents only represent a small portion of all the teachers)".

The data makes very clear that overall utilization of the television medium in the classroom is low. But how low? There seems to be no well developed basis for determining how much utilization is either desirable or possible. Sovereign has suggested that 10% of actual classroom time could be spent profitably in front of the television (as cited in DuMolin, 1971). Wagner says he could justify 20% (1969). Still others call for one-quarter, or one-third of the students' time to be proctored by T.V. This lack of agreement is confounded further by the fact that no standard index of adequate utilization has been developed yet. Today when the rate of television utilization is deemed

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low; it is so in comparison to something else. Many researchers have compared T.V. usage with tape recorder usage, overhead projector usage, globe, map, and book usage, and most popularly film usage. "Because people have not understood the medium, uses have been made of T.V. which have alienated just about every group of people concerned with classroom instruction; teachers, school administrators, boards of education, scholars, parents, and other taxpayers" (Wylie and Halley, 1971).

A point of fundamental importance when wrestling with the problems of incorporating television into education has been regularly overlooked. That is, television is potentially much, much more than just another audio-visual aid, like a new electric felt board. It is a major innovation in pedagogical technique. To use it fully would require a redefining of roles in the world of education, and a redefinition of the teaching function; it would demand a rethinking of educational goals, curriculum, classroom organization and management, and evaluation procedures (Patron, 1964). In a way no simple audio-visual aid ever could, television should be "regarded as a complete sub-system within the school system ... necessitating an examination in terms of its 'fit' structurally and functionally, with other sub-systems as they all pursue and contribute to the system's educational goals" (Wagner, 1969).

Presently, however, those concerned with the utilization of television facilities in the schools are bound to deal with the issues within the limitations placed upon them by the existing school systems. That is, they must work within the restrictions of schools equipped

before primed for being equipped, filled with people whose understanding of television is new and often limited to seeing it either as an entertainment medium, or as a cumbersome audio-visual aid.

The present study was undertaken to examine the patterns of television utilization in the schools, in hopes that having a clearer picture of the problems at hand would enable future decisions about ETV to be made with greater understanding.

II. THE CURRENT STUDY

The data of this research came from two sources. A Television Survey for the month of February, 1973 was sent to the principals of each school in the Borough of York. This survey sought to ascertain the extent to which individual schools were equipped with television facilities, and the frequency with which the available equipment was being used by the teachers. The directions accompanying the survey requested that each principal devise his own information-gathering process, in order to complete the form, but cautioned that teachers should be encouraged to keep records of their usage rather than rely on recollections at the end of the month. 100% of the principals responded to the survey.

A second source of information came from questionnaires completed by a random sample of teachers from all the Borough's schools. From the total elementary and secondary teacher population, one-fourth were randomly selected to participate in the study, and questionnaires for these teachers were sent to their principals, who were asked to both distribute and collect the forms. Based on the utilization findings of all the other research in this area the teacher questionnaire was designed with the assumption that

usage rates were low. We were interested in learning who used the medium, in what circumstances, and why the medium was not being used more frequently by the teachers (See Appendix 1 and 2 for Television Survey and Teacher Questionnaire).

A. Television Survey

The data obtained from the Television Survey (completed by the principals) yielded two types of information: the extent to which a school was equipped with television facilities, and an analysis of the use that was made according to numbers of teachers who used the media.

The most rudimentary type of television facilitation involves supplying only receivers to the school, and depends upon the limited reception capacity of each receiver's "rabbit ear" antenna. 29% of all the schools in York are equipped in this manner. A school which is equipped with either a master antenna on its roof, or is cabled to a community cable company (CATV) will most likely have better and extended reception. 21% of the schools are so equipped; however, 9% of these do not have an internal cabling system. This means that although the school receives a community cable signal, the signal will not be distributed to all the receivers within a school increasing general reception; but instead the signal will be sent directly only to one location (receiver).

Logically a school should be able to use its receivers more frequently if it has the facilities to play video-tape recordings, which are available from a variety of sources, as well as live broadcasts. The machine that will enable a school to do so is the Video Play-Back unit. 6% of the schools in York are equipped with receivers and a play-back unit.

Increasing the capacity for a school to use T.V. facilities, a Video-Tape Recorder (VTR) can not only play pre-recorded video-tape (like a video play-back machine), but it can also make its own recordings, from "off the air". 14% of the schools in York report having receivers and VTRs (some in addition, have video play-back units which duplicate the facilities that can play a tape).

Finally, a school may have facilities not only to view video material, but to produce its own. If a video camera is cabled directly to a receiver a "simple-camera chain" is formed, which allows for the instantaneous broadcast of whatever the subject may be. If the camera is combined with a VTR, a homemade video production may be recorded, and stored for play-back at a later date. 30% of the York schools are equipped with facilities to record their own material. Table 1 shows the distribution of facilities among the Borough's schools, according to the level of school (junior or senior public school, or secondary school).

TABLE 1 DISTRIBUTION OF FACILITIES. PERCENTAGES OF SCHOOLS - KINDS OF EQUIPMENT.

KIND OF EQUIPMENT		JR. P.S.	SR. P.S.	SEC. S.	A L L
Receivers Only	"rabbit ears"	44%	0%	0%	29%
	roof antenna	13%	0%	0%	9%
	CATV* and no C.C.**	13%	0%	0%	9%
	CATV and C.C.	4%	0%	0%	3%
TOTAL		74%	0%	0%	50%
Receivers and Video Play-Back Unit		4%	0%	14%	6%
Receivers and Video Tape Recorder (and Video Play-Back in some)		0%	20%	57%	14%
Receivers, Video-Tape Recorder and Video Camera		22%	80%	29%	30%

* Community Cable Television

** Closed Circuit (internal cable)

It is seen that all the most simple equipment set-ups (receivers only) are in the junior public schools, while the senior public schools and secondary schools hold the majority of the complicated equipment. The rotary nature of the secondary school teachers' schedule may be partial explanation for this. Because of the rotary type scheduling, use of live broadcasts for these teachers is nearly impossible to arrange. This difficulty should in part be overcome by the availability of video play-back units, and video-tape recorders. A teacher on a rotary schedule with these facilities should be able to obtain a recording of a desired broadcast, which can then be played back according to the teacher's timetable.

TABLE 2 DISTRIBUTION OF FACILITIES. RATIO OF NUMBERS OF TEACHERS TO PIECES OF EQUIPMENT.

	JR. P.S.	SR. P.S.	SEC. S.	A L L
Number of teachers per T.V. RECEIVER	2.8	2.9	6.7	3.8
Number of teachers per VIDEO PLAY-BACK	162.0	75.5	53.2	79.6
Number of teachers per VIDEO-TAPE REC.	97.2	30.2	79.7	69.7
Number of teachers per VIDEO CAMERA	97.2	25.2	239.3	85.8

In order to compare this Borough's degree of facilitation with others, it is necessary to consider the ratio of teachers to pieces of equipment. In comparison with the survey conducted jointly by the Metropolitan Toronto Educational Television Committee and the OECA (1972) the schools in the Borough of York are especially well equipped

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with television receivers. That survey of twenty-nine schools in Metro found the following ratios for teachers to receivers by school levels: 5.1 (junior public schools), 6.3 (senior public schools), 9.3 (secondary schools), 6.3 (all schools). Table 2 shows the ratio of teachers to receivers, and to other television equipment, at each school level for the Borough of York. It is seen that York is similarly better equipped with VTRs than the Metro average. The following are percentages of schools from the Metro survey equipped with VTRs: 16% (junior public schools), 60% (senior public schools), and 80% (secondary schools). All schools combined were 33% equipped with VTRs. The figures from York show that 22% of the junior public schools are VTR equipped, 100% of the senior public schools are, and 86% of the secondary schools maintain VTR equipment, yielding an overall 44% of the schools in this Borough holding VTR facilities. York's facilities compared unfavourably with the Metro survey only in terms of the percentage of schools hooked into a community cable system. While the Metro survey found 68% of the sample school cabled, only 28% of the schools in York have this connection.

Does the type of facilities a school has significantly effect the amount of utilization? As was noted in the beginning of this paper, limited studies are hard put to establish adequate indices of utilization, because of the large number of variables to be controlled for. Should we be concerned with the number of times any piece of equipment is used, or should the number of live broadcasts viewed be counted? Should utilization be measured in terms of numbers of students watching a program, or should the number of teachers using a program be counted?

In many of the studies cited the hallmark of usage was the number of teachers using live broadcasts. Comparable rates of utilization were determined from the data of this study. Concern with determining utilization according to facilitation of schools led to computation of the percentages of teachers using live broadcasts, according to the type of equipment their schools had. It was hypothesized that schools with facilities to produce their own broadcasts would watch more ETV because they would be more involved with the medium in general. This hypothesis was not supported by the data; that is schools with full production facilities are no more likely to watch ETV than are schools with receivers only. This is demonstrated in Table 3. What does appear to have a significant effect on the amount of utilization, in terms of distribution of facilities, is the ratio of teachers to pieces of equipment.

TABLE 3 RATES OF UTILIZATION. PERCENTAGES OF TEACHERS USING BROADCAST ETV AND/OR ETV VIDEO-TAPES, AND NUMBERS OF VIEWINGS PER TEACHER ACCORDING TO KIND OF FACILITIES IN SCHOOLS. (FOR ONE MONTH: FEBRUARY, 1973)

	% of teachers using	# viewings per teacher using	# viewings per all teachers
In schools with receivers only	33%	5.0	.57
In schools with receivers and video-tape facilities (V/P/B or VTR)	9%	3.0	.29
In schools with receivers, VTRs, and video camera	26%	4.3	.86

The mean number of T.V. sets per teacher per school, in the Borough of York is .32. Tabulating the mean percentage of teachers using T.V. receivers in schools with lower than average teacher/set ratio, and in schools with higher than average teacher/set ratio, we find that twice as many teachers use the equipment in schools that are better equipped. To further demonstrate the relationship between numbers of teachers to pieces of equipment (i.e. receivers) we performed a linear regression analysis which yielded a correlation coefficient (r) of .49; the relationship is quite significant. This finding confirms the results of Dirr's (1970) study in which he found that the more readily available a T.V. set was, the more inclined a teacher would be to use it. Because of this result, he recommended to educational administrators that every teaching area be equipped with a receiver, if facilitating utilization is the goal. Wagner (1969) concurred with this notion, but went even further. He insisted that under no circumstances should a teacher be required - or even encouraged - to use ITV unless he has immediate access to the reception equipment. Table 4a shows the utilization of television equipment according to the accessibility of equipment. Accessibility was simply defined in terms of the number of teachers in schools with the equipment under consideration. It can be seen by comparing Tables 2 and 4(a) that junior public school teachers, who have the lowest ratio of teachers to set, used the T.V. receivers for live broadcasts more than any other group. The secondary teachers, with a teacher/set ratio of 6.7 to 1 watch far fewer broadcasts. The same pattern holds for the other television equipment. In the senior public schools, where the ratio of teachers to

VTRs and cameras is lowest, the teachers used the equipment most frequently; utilization is considerably lower for junior public and secondary schools, where teachers must contend with the problems of higher ratios.

TABLE 4a UTILIZATION OF TELEVISION EQUIPMENT ACCORDING TO ACCESSIBILITY OF EQUIPMENT (FOR ONE MONTH: FEBRUARY, 1973)

	JR. P.S.	SR. P.S.	SEC. S.	TOTAL
% of teachers who use any television equipment	33%	32%	8%	28%
of teachers with access to T.V. receivers, the % who use them	33%	18%	1%	17%
average number of live broadcasts used per using teacher	4.9	2.9	2.3	4.6
of teachers with access to video-tape recordings, the % who use them	3%	23%	8%	10%
average number of video-tapes viewed by using teachers	1.5	2.9	1.9	2.3
of teachers with access to other T.V. equipment (VTRs, cameras), the % who use it	5%	11%	2%	4%
average number of times other equipment is used per teacher who uses it	2.7	7.3	2.6	4.7

TABLE 4b UTILIZATION IN THE FOUR HIGHEST AND FOUR LOWEST USAGE SCHOOLS.

	LOWEST	HIGHEST
Mean Percentage of Teachers who use T.V. medium	4%	76%
Mean Numbers of times using teachers used the medium	3	3.30

Demands on teacher time are potentially countless. With all these concerns, the nuisance of having to find time to arrange for facilities which are not convenient to use often decide the outcome of a teacher's deliberation of how to handle a particular subject; verdict: no T.V.

TABLE 5 UTILIZATION OF LIVE BROADCASTS ACCORDING TO RECEPTION RATINGS.

	RATING 1 OR 2	RATING 3	RATING 4 OR 5
Percentage of schools with	26%	37%	37%
Mean % of teachers using live T.V. in schools with	34%	40%	38%

Another consideration to be made of utilization is the percentage of teachers who use the medium, according to a rating of the reception ability of the equipment. The York principals were asked to rate the reception their school received on a 1 - 5 scale

(1-Excellent, 2-Very Good, 3-Adequate, 4-Poor, and 5-Very Poor). Table 5 shows the percentage of schools with the distribution of these ratings, and the percentages of teachers using the medium under these conditions. It appears that quality of reception does not significantly affect the amount of utilization of equipment, which is surprising. A possible explanation is that equipment in schools receives heavy usage and may often be in less than the best working order. Films may sometimes be poor quality prints and projectors may break down mid-film. Phonograph speakers frequently may add uncontrollable variations to the recording. These idiosyncrasies of old equipment are familiar to teachers, and they have learned to put up with such difficulties, when they feel the price is worth the educational gains of whatever equipment they wish to use. In his study (1970) Dirr found the same surprising result. Because there was no significant association between the condition of television sets and the amount of utilization, he suggested that if a teacher believes a material is valuable, the value is not destroyed by the fact of poor condition.

The findings raise then, a most important question. Who is the teacher that believes television is so valuable that he is willing to put up with any of its inconveniences to use it?

When META conducted a survey of utilization rates in 1967-68, it was found that the average elementary school pupil saw twice as much educational television as the average secondary school pupil (Munro, 1969). Studying usage in grades kindergarten through six, Dirr found that the highest use of T.V. came in first and second grade classrooms, and rates declined as one progressed up through the grades (Dirr, 1970).

When a study of utilization was made at Weston Memorial Junior Public School (York) it appeared that "the number of programs viewed is greatest for the primary groups (especially Grade 1), and decreases towards Grade 6" (1971). This trend was again demonstrated by the Metropolitan Toronto Television Committee joint survey with OECA. In the twenty-nine Metropolitan Toronto schools studied, 57% of the elementary school teachers never used T.V. in a three month period, compared with 65% of the teachers in the intermediate schools, and 80% of the teachers in secondary schools. OECA also collected data for a survey of schools that reported using television at this time. Of the elementary schools in the Borough of York that were considered T.V. users, 41% of the elementary school teachers were doing the actual using. This contrasts with 16% of the teachers who used the medium in "using" secondary schools. Finally, in spring of 1972 Kawashima conducted a Media Use Survey for OECA, and determined that not only did elementary school teachers use television more frequently than did secondary teachers, but the teachers who worked in the lower grades also used more film, tape recorders, record players, and film strips than those in secondary schools.

The results of the survey of York schools were tabulated according to divisions of school level. Table 4 shows the general utilization findings, and illustrates that the order of utilization found in the studies cited above is also found in the schools of York. Our findings were affected by the fact that during the survey month all secondary schools were involved in mid-year examinations. We believe, however, that regardless of the extent to which secondary school utilization would be increased in "normal months", the pattern described would still hold

true. While 18% of the general teacher population used live television broadcasts, nearly twice as many, or 33% of the elementary school teachers use that medium. If we were to include in our analysis types of utilization other than live broadcasting (for example, video-tape recordings, and use of production equipment), our figures would change, although the general pattern would be maintained. This is explained by a closer look at the facilitation of York senior public schools. These five schools are nearly totally equipped with full reception and production facilities. In particular, one school with a 1:1 ratio of sets to teachers is involved in a regular production program of student-made video broadcasts which are shown throughout the school. This type of whole school involvement with a television project brings total figures up, and in this case makes the percentage of teachers using television in the senior public schools quite close to the junior public school rates.

B. Teacher Questionnaires

To give yet a better indication of who used the television medium in school, when, and why and why not, we sent Teacher Questionnaires to one-fourth of the Borough's teachers and received 264 completed forms. Complete returns were received from 32 out of 35 schools. 100% of the senior public school teachers surveyed responded; complete responses were received from all but two junior public schools, and one secondary school which returned only 50% of its forms.

TABLE 6 YEARS OF TEACHING EXPERIENCE OF SAMPLE.

	1 YEAR OR LESS	1-5 YEARS	5+ YEARS
Grades 1-6; primary & junior grade teachers (46% of total population)	7½%	43%	50%
Grades 7-12; intermediate and senior grade teachers (54% of total population)	6%	25%	69%

The total population on which the following results were based, was comprised of 46% teachers of junior public schools, 12% teachers in senior public schools, and a remaining 42% were teachers in secondary schools. This sampling accurately reflects the distribution of teachers in the three levels of school. 60% of the total population had five or more years of teaching experience; 34% had worked in the profession for more than one year and less than five years; while only 6% were teaching for the first time. Table 6 shows the amounts of experience of the total sample according to primary/junior (grades 1-6) versus intermediate/senior (grades 7-12) divisions of teachers.

The Teacher Questionnaires gave teachers four opportunities to indicate that they were not using the medium at all. Table 7 shows the percentage of teachers responding that they do not use television at all to these four questions. That elementary grade teachers use television more than secondary teachers is again demonstrated. The survey of teacher attitudes revealed that primary/junior teachers were almost twice as likely as intermediate/senior teachers to view television as a medium by which they could potentially supplement a lesson, or present new information.

The teachers of the lower grades also cited the visual component of television as its main positive educational virtue significantly more often than did the senior and secondary school teachers. Nearly twice as many primary/junior teachers reported consulting the monthly ETV program guide when planning units, as did intermediate/senior teachers. The positive effect of this planning is reflected in the fact that 45% of the junior school teachers used live broadcasts, compared with 8% of the senior and secondary teachers who did. Table 9 shows the percentages of teachers using live broadcasts and video-tapes according to grade divisions. Finally, the responses to the question: "If all T.V. facilities were removed from your school, how much would it affect your program?" indicate that teachers in senior and secondary schools would be significantly less bothered than would primary and junior grade teachers.

Reasons given for use and non-use are presented on Table

8.

TABLE 7 PERCENTAGE OF TEACHERS WHO RESPONDED THAT THEY DID NOT USE TELEVISION AT ALL, TO FOUR DIFFERENT QUESTIONS.

	% OF TEACHERS, BY DIVISION, WHO ANSWERED:		BY YEARS OF TEACHING EXPERIENCE		
	PRIMARY/JUNIOR	INTERMEDIATE/SENIOR	1-	1-5	5+
The main situation in which I use T.V. programs is: NOT AT ALL	49%	79%	65%	67%	64%
The main reason why I use T.V. programs is: DO NOT USE AT ALL	45%	75%	59%	63%	61%
If all T.V. were removed, my program would be affected: NOT AT ALL	40%	65%	59%	56%	52%
I use (more live broadcasts, more video-tapes): NEITHER	40%	60%	65%	56%	46%

TABLE 8 TEACHER ATTITUDES CONCERNING ETV USAGE - ACCORDING TO GRADE DIVISIONS.

	% OF TOTAL TEACHERS RESPONDING	% OF PRIMARY/JUNIOR TEACHERS RESPONDING	% OF INTERMEDIATE/SENIOR TEACHERS RESPONDING
The main situation in which I use T.V. is:			
TO SUPPLEMENT A LESSON	20%	25%	15%
TO PRESENT NEW INFORMATION	13%	23%	6%
AT A STUDENT'S REQUEST	1%	2%	0%
The main reason for using T.V. is			
STUDENTS CAN REMEMBER VISUAL PRESENTATIONS BETTER	19%	30%	8%
IT MAKES AVAILABLE INFORMATION NOT FOUND IN BOOKS OR FILMS	12%	12%	11%
STUDENTS LIKE IT	5%	6%	4%
If all T.V. facilities were removed from your school, how much would it affect your program?			
NOT AT ALL	54%	40%	65%
A LITTLE	28%	33%	23%
MODERATELY	14%	15%	6%
ALOT	3%	1%	4%
DRASTICALLY	0%	0%	1%

TABLE 9 TYPES OF VIDEO MATERIAL USED, ACCORDING TO LEVEL OF SCHOOL.

	% OF PRIMARY/JUNIOR TEACHERS	% INTERMEDIATE/SENIOR TEACHERS	% ALL TEACHERS
Live Broadcasts	45%	8%	25%
Video-Tape Recordings	9%	29%	20%
Neither	40%	60%	50%

Wagner (1969) bases his explanation of his own similar findings, that television is used more by junior school teachers than senior and secondary school teachers, on the fact that the elementary teacher is a generalist with a flexibly scheduled day. High school teachers, on the other hand, are specialists bound to rigid timetables. Dirr (1970) looks to the program content to explain the differences. In addition to suggesting that younger children, new to the school environment, are more accustomed to T.V. than older students, because of their recent at-home television experiences, and that therefore television in school is a natural continuation for them, he also observes that programming for younger children is more likely to utilize the unique characteristics and potentials of television than is the programming for older, more mature viewers. Many more of the commercial production techniques are in evidence in early grade programming, while much of the upper grade programming is filled with "talking faces" - or essentially lectures on video-screen. Because this is so, both Wagner and Dirr recommend to those in charge of ETV productions that they get rid of the "talking face", in favour of greater explorations of the unique characteristics of the television medium.

Wagner's explanation for the disparity in utilization across school levels is supported by findings of this study which indicate, for instance, that secondary school teachers rely more heavily on video-tape recordings (see Table 9). Both primary and secondary grade teachers cited scheduling as the greatest problem they faced when trying to put ETV to use. A significantly greater number of intermediate/senior teachers complained of the difficulties they encountered when trying to arrange to see broadcasts, than did junior/primary teachers. Inflexible broadcast schedules combined with inconveniently located receivers plague the higher grade teachers who would use the medium. Benton (1970), Dobosh and Wright (1972), Wagner (1969), Hunter (1967), and Guba and Snyder (1965) all pointed to scheduling as a major bug in the educational television system. An experiment in Ottawa equipped several schools with Instant Retrieval Television systems; a highly efficient communications network allowed teachers dial access to any number of programs and films held in the IRTV library, and permitted them to obtain a play-back on their classroom receivers almost instantaneously (McLaughlin, 1972). This system does in fact, do away with many of the scheduling problems, but according to the IRTV research account, scheduling problems were replaced with others, such as inordinate expense.

Dirr's explanation of the utilization disparity between lower and higher grades, indicting program quality, is a common complaint in the other research, but it would appear to have less foundation in Ontario. The foci of other studies have frequently been school systems using very local ETV productions, which have been based on quite local production budgets, and staffed with "master teachers" (teachers taken out of classrooms and set up in studios to teach over broadcast air).

It is easy in these cases to see why programming was possibly quite unsatisfactory. However, this is really not the case in Ontario. At the expense of truly local productions, OECA handles almost all of the broadcast decisions for the Ontario audience and the result is, for the most part, quite sophisticated programming produced by large and costly production companies. The current study does find that the third-ranking problem reported by York teachers is that they cannot find suitable material on ETV. Frequently material is deemed unsuitable, however, because of a combination of many factors other than poor quality programming.

In addition to the predictable finding that amount of utilization differed according to school level, it was expected that utilization would also differ according to the years of teaching experience of the population. One might expect that newer teachers would have had more exposure to ETV, in recent teachers college courses, and therefore they would be the group most inclined to utilize the medium. It is becoming a common practice to examine the teaching behaviour of "practice teachers" with video equipment, so that one might expect that newer teachers with exposure to this dimension of the medium, would be more likely than the more experienced teachers to use video camera and recorders in their teaching. Still further, newer teachers are more likely to have been born in the age of television, so that acceptance of the medium for them would not involve the major changes that it may for people more accustomed to the older media. It was surprising then, that this survey did not show a significant disparity of utilization rates between new teachers and teachers with experience. The differences in the numbers of teachers reporting that they did not use the medium at all, across these two

groups, were insignificant. In 1970 Dirr found that the less professional training a teacher had, the more likely he was to use television. He goes on to suggest that the teacher with less professional training is more inclined to supplement his skills with any and all teaching aids. It is a fact that the more experienced teachers in Toronto might also be those with less professional training, due to the changing and increasingly stringent qualifications required for teaching certificates in the province in the last few years. This trend would tend to equalize usage across teaching experience cohorts. Dirr's hypothesis is supported by the current study which shows that more experienced teachers are significantly more likely to consult the ETV program guide when planning a course unit, and slightly more likely to use ETV to supplement their lessons, than are first year teachers.

Finally, it is seen that neither the teachers nor the students of the Borough are involved to any significant extent in the active utilization of the production capacities of video equipment. 92% of the students are not involved in making television programs, and 88% of the teachers report never having used the medium to examine their own teaching behaviours.

The last part of the Teacher Questionnaire was concerned with uncovering the factors that hampered teacher utilization of classroom television. Table 10 shows the percentages of teachers who cited any of fifteen choices of television usage problems. To generalize, the most serious problem facing all of them was that of scheduling. 69% of the teachers found that programs came on at the wrong time of day; 40% found that programs came on wrong days altogether, or at wrong times of the year. As indicated earlier in this paper, unsuitable programming follows scheduling in the teachers' list of television grievances.

TABLE 10 PERCENTAGE OF TEACHERS CITING PROBLEMS PREVENTING FULLER ETV UTILIZATION.

PROBLEM CITED	% OF TOTAL TEACHERS CITING	% PRIMARY/JUNIOR CITING (I)	% INTERMEDIATE/SENIOR CITING (II)	SIGNIFICANT DIFFERENCE BETWEEN I & II
Scheduling - wrong time of day	69%	79%	59%	Significant
Scheduling - wrong day, wrong month	40%	42%	39%	
Unsuitable material	34%	31%	38%	
Unable to preview material	32%	23%	39%	Significant
Logistics - difficult to arrange for	25%	15%	34%	Significant
Poor reception - difficulty tuning in	24%	34%	15%	Significant
Lack of cable facilities	23%	29%	18%	Significant
Logistics - not enough sets; scheduling difficulties	23%	17%	27%	
Not enough information on content available	20%	18%	21%	
Prefer colour film to black and white T.V.	14%	17%	11%	
Logistics - insufficient time to set up	12%	4%	18%	
Equipment too complex	4%	0%	7%	
Equipment in poor operating condition	4%	3%	4%	
Other	4%	2%	5%	

For teachers without full equipment set-ups at their convenience, the logistics of arranging to use the medium can be very complicated. The data shows that difficulties in arranging to use the medium troubles significantly fewer primary/junior teachers than it does intermediate/senior teachers, and this is understood when one considers the ratios of teachers to equipment presented in Table 2. Because programming is most often live, or else is broadcast only once, teachers are unable to preview the material, and thus cannot fulfill their teaching role in selecting the material to be presented to their students. The inability to preview material deters significantly more teachers from using T.V. in the secondary schools, where the subject matter taught is more specific, than it does in the junior schools.

Poor reception and lack of cabling facilities is cited next, and it is mentioned significantly more frequently by the junior school teachers than those teachers in senior and secondary schools. This follows from the fact that the junior schools are shown to have more limited reception facilities than the other schools.

The factor least frequently cited as a hindrance to ETV utilization is the operating condition of the equipment. This is in keeping with the finding cited earlier, that is if a teacher believes a medium to be of educational value, the medium retains value regardless of the condition of the equipment.

The York survey touched on the problems of utilization most commonly cited in other research. There are areas of concern, however, which this survey did not touch upon, and these are important to note here.

First and foremost, we must return to the problem of a medium which is misunderstood. Do teachers, students, and parents understand the place that television can have in the schools? What would be the ramifications of full utilization? It is recognized by many that television is seen as a threat to the autonomy of the teacher, and to the status of the profession. Wylie and Halley (1971) go so far as to report that class use of television is seen by many teachers as a sign of personal and professional weakness. It is true that a real use of television in the school will necessitate a rethinking of traditional teaching roles. In order to work with the television, teachers must give up some of their authority when it comes to making curriculum decisions. Resistance to doing this is reflected in the number of teachers who reject television because they cannot preview the material, or obtain enough information on program content from program guides. Yet, giving up a certain degree of authority need not be understood as a depression in status. It is simply a change in attitude that is called for - a new understanding of how the classroom teacher can best help a student to learn and grow. There were times when the teacher was the absolute best channel for presenting new information to a student. But television, today, has the power "to bring the great globe itself into the classroom" (Wylie and Halley, 1971). How many teachers can do that? When a teacher brings television into the classroom with the intention of forming a teaching team with the medium, he is freed to make important individual contact with some students, while others are attending to the television. Only a teacher can give a student personal guidance and understanding.

Teachers are inadequately trained, if at all, to use the television medium effectively. The small number of teacher training institutions that include a consideration of the electric media in their courses, mainly point out to students where on and off switches are located, and show them how to thread a film projector. These courses rarely provide any theoretical consideration of the technology, and infrequently deal with practical applications of the media.

While figures suggest that the condition of equipment is not a determining factor in utilization, equipment condition does frequently determine accessibility of the medium, which is shown to be a significant factor. Without adequate back-up facilities for the proper maintenance of the apparatus, a teacher who might one day decide to give T.V. a try will find that the set he counted on using is retired on a shelf, because it has not had the necessary maintenance care.

Finally, it should be recognized that incorporation of television into the educational system meets with the resistance that is typical of innovations. What is called for are instructional changes which demand significant "new ways of using professional talent, drawing on instructional resources, allocating physical facilities, scheduling instructional time, or (perhaps even) altering physical space ... rearrangements of the structural elements of the institution" (Wagner, 1969). The scope of the change called for is so grand as to make rapid adaptation to it seem impossible. Rather, it is more reasonable to expect to see the changes in attitude and practice develop consistently in time. This notion is supported by the evidence presented in Table 11 which shows some gradual increase in utilization over the past five years for junior and senior school teachers, although the increases are not

proportional to increased availability of sets at the junior school level, and do not appear at all for the secondary school teachers. The special circumstances (mid-year exams) which affected secondary school responses should be remembered.

TABLE 11 UTILIZATION OF LIVE BROADCASTS - COMPARATIVE RATES 1968* - 1973.

	JR. P.S.	SR. P.S.	SEC. S.	ALL
Average Ratio Teachers to sets 1968	8.00	11.00	21	11.25
Average Ratio Teachers to sets 1973	2.79	2.90	6.70	3.75
Average Number Viewings per Teacher 1968	.97	.17	.06	.5
Average Number Viewings per Teacher 1973	1.63	.52	.01	.78

* 1968 figures based on data from META survey (1968), figures for Borough of York.

III. CONCLUSIONS AND RECOMMENDATIONS

Our survey of the schools in the Borough of York indicates that many teachers in that Borough have not yet begun to utilize the educational television facilities available to them. Both these teachers, and those who have used the medium cite long lists of grievances with the educational television system. Time will bring at least partial resolutions to these grievances in the form of improved technology, and relaxed attitudes, and utilization is likely to increase as T.V. becomes an accepted medium for

educational purposes. The speed with which acceptance comes will, however, be significantly affected by the decisions and actions of those persons who are involved with the task of bringing television into the arena of pedagogical technique.

The data from this survey provides six facts about educational television facilities and utilization in the schools of the Borough of York, and these findings should be considered when new ETV decisions are being made.

1. The junior public schools of this Borough are facilitated on a small scale compared to the equipment arrangements in the senior and secondary schools.
2. The type of facilities a school has does not appear to affect rates of utilization; however, the quantity of facilities (ratio of teachers to pieces of equipment) does have a significant effect on utilization rates. (See Table 12 below.)

TABLE 12 UTILIZATION OF TELEVISION - PERCENTAGE OF TEACHERS USING ETV IN SCHOOLS WITH ABOVE AND BELOW AVERAGE RATIO OF SETS PER TEACHER PER SCHOOL. (MEAN NUMBER OF SETS PER TEACHER PER SCHOOL = .32)

	ABOVE .32 (MEAN = .49)	BELOW .32 (MEAN = 1.6)
Mean % of teachers using ETV	42%	21%

3. The reception quality, per se, does not have a significant effect on rates of utilization.
4. Utilization of television equipment tends to be highest in the lowest grades, and decreases as school level increases.
5. Primary and junior grade teachers use live T.V. broadcasts most frequently, while intermediate and senior grade teachers more frequently use video-tape recordings.
6. The problem most severely hindering utilization of ETV as reported by the teachers, is inconvenient and rigid scheduling of ETV broadcasts. This problem is followed by those of unsuitable material, the complicated logistics of arranging to use the medium in schools where teachers share facilities, poor reception and cabling facilities, and finally, the poor operating condition of equipment.

The present is the best time for all those involved to begin to seriously consider what it is they want of the new medium. ETV by itself has very little power. The decision to utilize is in the hands of the teacher. He also has the power to use it well or poorly, and thus to help form the student's attitude towards the medium. Yet, the responsibility for putting television soundly into the classroom, is not the teachers' alone. If classroom television is to become a system-wide innovation it must be given the energy of administrative initiative. Educational objectives will have to be clarified, and the way television is to support

these objectives will have to be determined. For example, in Metropolitan Toronto today, television is being used mainly as a visual-aid to supplement a lesson, or to motivate a project. But its potential uses includes doing all the teaching (total television teaching), or carrying out the majority of the instruction function, with the cooperation of the classroom teacher (direct television teaching). If television is to be used in either of the latter ways, administrators must initiate re-thinking of curriculum and scheduling practices. If it is to remain useful simply as a supplement to teachers' lessons, then ways to better facilitate this use must be devised and expectations for utilization may need to be lowered. It is important that administrators encourage the creative use of the medium, and create the flexible atmosphere essential for creativity.

Specifically, the following are steps that might be taken in order to improve both the quantity and quality of television utilization:

1. Patterns of equipment distribution should be reconsidered. Since teacher/equipment ratios are shown to correlate with utilization, equipment should be distributed in such a way as to maximize the probability of its use. Teachers who are using the medium already should be encouraged, and perhaps rewarded, by making it even more convenient for them to do so. Their rooms should have receivers, and they should have access to VTR and production facilities. To serve this end, redistribution of facilities may be called for. By facilitating media users,

positive exemplary teachers will provide models for other teachers. This is more constructive than having equipment sit unutilized in classrooms, or schools, for the sake of equal distribution.

2. Having created conditions favourable for the emergence of leading media users among teachers, channels of communication should be established between these teachers and non-users, within and between schools, so that the latter can be encouraged and assisted by the former.
3. Schools equipped with a community cable signal, but not with an internal cabling system should be provided with the means to distribute the benefits of that community signal throughout the school. They should have internal cabling installed wherever possible.
4. Television equipment should be introduced into classrooms, or schools, for the first time, only after a program for introduction and implementation of the new equipment has been arranged.
5. Elementary grade curricula can include a unit of study of the communication media used in the past and in the present. Included in this unit should be a critical examination of the part television plays in our world. In this way television can be incorporated into a

classroom, without concern for scheduling of special broadcasts, or suitability of equipment.

6. Similarly, a study of the art or non-art of television belongs in the secondary school curriculum as much as do studies of newspaper, or film. While study of television as a medium can serve as an end in itself, hopefully once having used the medium in this limited way teachers will begin to recognize its fuller potentials, and feel more comfortable with the medium.
7. Administrators and teachers must assume responsibility for seeing that teacher training colleges include meaningful courses in television education in their programs. To benefit the teachers already in schools, however, in-service training courses must be instituted, and they must be arranged in ways that will least inconvenience the teachers. If it is impossible to arrange training during school hours, teachers should be compensated for their extra time. Then, it is most important that the training is exciting and valuable, as teachers' attitudes towards the medium can be considerably shaped by this training experience. Hunter (1967) makes important suggestions

as to the approach such a course should take, and the content desirable for study. His suggestions are included in the following:

- a. Television should be sold to the teacher, with the hard-sell enthusiasm needed to counteract resistance.
- b. Early in such a course, efforts must be made to assure the teacher that his job, status, or salary is in no way threatened by the educational television. In addition, it should be assured that television is not aimed at replacing familiar and popular teaching aids such as books and films.
- c. Course content should include an examination of teacher attitudes towards television.
- d. The teacher should be given knowledge of television production techniques, and should be helped to establish a television aesthetic.
- e. Theoretical considerations of television, such as learning theory application to T.V. should be made.
- f. Ways of creatively using the television in the classroom should be explored.
- g. The physical aspects of the viewing situation should be considered, and the implications of these physical arrangements

should be appreciated.

- h. Problems of utilization should be considered such as scheduling difficulties, and equipment breakdown.
- i. Consideration should be given to the adjustments in teaching methods called for, when using television.
- j. Finally, teachers should be shown how to operate the equipment which the course has attempted to sell them.

The educational television picture for the Borough of York is promising. If administrators and teachers determine that utilization of the medium is a priority, and if they coordinate their efforts, the possibilities for television to make a significant contribution to education here are many. The teachers and students of one senior public school are already innovative and active in their utilization of the facilities available to them. Strong, enthusiastic support from administrative personnel can encourage other schools to find meaningful ways of incorporating television into their programs.

THE BOARD OF EDUCATION FOR THE BOROUGH OF YORK

TELEVISION SURVEY

for the month of

FEBRUARY, 1973

Please complete every section of the survey. Figures are to be given for the month of February only.

- A.
1. SCHOOL
 2. NUMBER OF TEACHERS
 3. NUMBER OF TELEVISION SETS (a) OPERATIVE
(b) INOPERATIVE
 4. NUMBER OF VIDEO-TAPE RECORDERS
 5. NUMBER OF VIDEO-TAPE PLAYBACK-ONLY UNITS
 6. NUMBER OF VIDEO CAMERAS
 7. DOES SCHOOL RECEIVE COMMUNITY CABLE SIGNAL? YES NO
 8. DOES SCHOOL HAVE (a) INTERNAL CABLE SYSTEM YES NO
(b) MASTER ROOF ANTENNA YES NO
 9. TELEVISION SIGNAL RECEPTION IN THIS SCHOOL IS:
EXCELLENT VERY GOOD ADEQUATE POOR VERY POOR
- B.
1. TOTAL NUMBER OF TEACHERS USING LIVE BROADCASTS
 2. TOTAL NUMBER OF LIVE BROADCASTS USED
 3. TOTAL NUMBER OF TEACHERS USING VIDEO-TAPED BROADCASTS
 4. TOTAL NUMBER OF VIDEO-TAPED BROADCASTS USED
 5. TOTAL NUMBER OF TEACHERS USING VIDEO CAMERAS, PORTABLE VTR'S, ETC.
.....
 6. TOTAL NUMBER OF TIMES VIDEO CAMERAS, PORTABLE VTR'S, ETC. USED
.....

PRINCIPAL'S SIGNATURE

Questions 1 - 10: Circle one answer only, for each question.

1. I teach in a:
 - (a) junior public school
 - (b) senior public school
 - (c) secondary school

2. Most or all of my teaching is in the:
 - (a) primary division (Gr. 1-3)
 - (b) junior division (Gr. 4-6)
 - (c) intermediate and/or senior division (Gr. 7-13)

3. I have been teaching for:
 - (a) less than one year
 - (b) one to five years
 - (c) more than five years

4. The main situation in which I use T.V. programs is:
 - (a) to present new information
 - (b) to supplement a lesson
 - (c) at student's request
 - (d) I mostly don't use T.V.

5. The main reason I use T.V. programs is:
 - (a) because students can remember visual presentations better than aural ones
 - (b) because students like it
 - (c) because there is information available in T.V. programs which I haven't found in books or films
 - (d) I mostly don't use T.V.

6. When planning a program unit (of a week, or several weeks or months), do you usually check the ETV program guide?
 - (a) yes
 - (b) no

7. If all T.V. (including video-tapes) were removed from your school, would your program be affected:
 - (a) not at all
 - (b) a little
 - (c) moderately
 - (d) a lot
 - (e) drastically

8. I make more use of:
 - (a) live broadcasts
 - (b) video-taped programs
 - (c) I use neither

9. My students are involved in "hands-on" use of T.V. They have made or are learning to make T.V. programs.
 - (a) true
 - (b) false

10. I have used video-tapes to examine my own teaching and my own classes. (a) true
(b) false

Questions 11 and 12: Circle as many answers as apply, for each question.

11. Which of the following are reasons why you don't use T.V. more often:
- (a) lack of cabling to my classroom
 - (b) shortage of sets and/or video-tape recorders; user scheduling difficulties
 - (c) poor reception and/or difficulty tuning in
 - (d) complexity of equipment to be operated
 - (e) poor operating condition of equipment
 - (f) insufficient time for previewing material
 - (g) insufficient time for setting up equipment
 - (h) scheduling of programs at inconvenient times of day
 - (i) none of the above

12. Which of the following are reasons why you don't use T.V. more often:
- (a) can't find suitable material
 - (b) prefer colour films to black and white T.V.
 - (c) programs come on wrong days, in wrong time of year
 - (d) I don't have enough information on program content
 - (e) it's hard to make all the arrangements to see a program
 - (f) other: please specify below

- (g) none of the above

13. If you have any other comments on the uses for or usefulness of T.V. facilities in your school, please note them below.

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