

THE NEW TECHNOLOGY:

STRATEGIES FOR ENHANCING JEWISH EDUCATION

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86-BD-16

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SUMMARY

SUMMARY

This Report is a comprehensive assessment of the role of new technology in Jewish education. It concludes that the use of the new technology involves both promise and pitfalls: but the opportunity to improve Jewish education outweighs the risks.

The new technology --audio,video and computers -- does not create an alternative method for Jewish education outside of school and family. While computers in schools are here to stay their role is still peripheral to the main business of classroom and teacher using chalk and blackboard, pen and paper. Media and computers can dramatically change teacher-student relationships and add excitement to learning.

Audio and Video

Video offers an unparalleled opportunity to broaden the Jewish identity of families with pre-school children in their own homes. The post bat- or bar-mitzva teen ager is also a prime candidate for audio and video- based education both for Jewish supplementary schools and secular school settings. In smaller western communities, the small group in a center, synagogue or home provides a framework for self-study that audio and video material could support more effectively than any other approach. Audiocassettes represent a crucial method for spreading Jewish education in Eastern Europe. Audiocassettes in particular also lend themselves to teacher training, because of the ease of self-study in car or home.

Computers

There is no question that the issue of computers in general and Jewish education is "hot". Computers are neither a panacea nor a technocratic menace to human values. Rather they are one important artifact of our culture that it would be foolish to either worship or to ignore.

Children appear to be a more promising target audience than adults for most computer applications. The current generation of children is the first micro-computer generation on Earth. The school setting rather than the home setting in the large to medium size Jewish community seems to offer the most promising target for computer usage in Jewish education. Within such communities, teen -age youth in supplementary school settings are an important group for computer-assisted learning. The best way to reach children and youth in schools is to train their principals and teachers.

RECOMMENDATIONS: THE ROLE OF THE MEMORIAL FOUNDATION

The Memorial Foundation is in a unique position to provide leadership. Culture, education and the continuity of the Jewish people in an international setting are at the core of its mission. The Foundation encompasses diverse ideologies within a unified approach. It is flexible, free to find and support the most effective current approaches.

Investment in technology for Jewish education should incorporate audio as well as video and computers. In the appropriate excitement over computers and video, audio opportunities should not be ignored.

The design, production, and distribution of the new technology to schools must place teachers at the heart of the effort. Attempts to produce "teacher-proof" curricula for Jewish schools in the seventies were a dismal failure. Audiocassettes, videocassettes and computer software must be produced to fit into, not replace school curricula.

Experience with video and computers suggests that achieving high quality is expensive; yet today's "TV generation" expects high-quality as a matter of course. With enormous needs and high unit costs, the resource demands of an effective strategy could be substantial. This suggests three additional principles.

1. The Foundation should leverage its resources by cooperating with others on specific projects. "Others" might be individual philanthropists, existing media or computer-oriented institutions, other Foundations or other communal organizations.

2. A concerted effort should be made to reach out and involve new sources of creative talent described above. Many of the young video-makers are Jews who are not connected to the Jewish community. Involving them in experimental programs, whether through competitions or commissioned works, is a way to reinvolve them in the community as well as attaining lower cost, high quality products.

3. A concerted effort should be made to adapt existing educational software developed for general education to the specific needs of the Jewish school. There is at least 20 times as much general educational software as Jewish software; probably 100 times as much money has been spent on its development.

Project Options:Electronic Media

1. A program of video cassettes for young children and their families: holidays, Jewish values, alphabet.
2. A participatory video and audio (music and language) program for teens in school.
3. Audiocassettes for Eastern Europe. A specific program needs to be designed that responds to the complexity and heterogeneity of Eastern European countries, community types and groups.
4. A program of audiocassettes for teacher and principal training is an obvious candidate for Foundation priority.

Project Options: Computers

1. An international program for teacher and principal training is a top priority for the Foundation.
2. Specific plans for computerization need to be drawn up with targets, timetables, costs and resources. In even the largest Jewish communities, the resources for individual school planning do not exist, and a regional planning model is the only feasible course of action.
3. While a wide variety of software needs exist, the highest priority for Foundation investment are: a) Authoring programs--Computer programs that are designed for adaptation by individual teachers; b) Funds to adapt existing general education software; and c) Funds to develop simulations in the area of Jewish history and culture, including Jewish life in Israel and the rest of the world.
4. One of the ways to meet the needs for planning, training and software is the development of a network of regional computer resource centers.

Video/Computers

The leading edge of the new technology involves interactive video --the combination of computer analytic capacity with the visual capacity of video. Combined with satellite transmission, the most isolated areas can be reached.

In addition to these projects, it is recommended that the Foundation sponsor the production and periodic updating of three catalogues: 1) audio/video for children and youth; 2) audio/video for adults; and 3) computer software for children.

The community is ready; the needs are great. Hopefully this Report will help the Memorial Foundation chart an effective course. The rationale for the recommendations is developed in the full report.

OVERVIEW

In 1984, the Memorial Foundation made an historic commitment to Jewish education and established as a priority the education of those who do not currently receive a Jewish education. A decision was also made to explore the potential of the "information revolution" to improve Jewish education.

As part of an effort to find the best ways to carry out this commitment to Jewish education, the Foundation commissioned Leonard Rosenfeld to explore one aspect of new technology in Jewish education in the 1980's -- the use of audiocassettes. Based on his report, the Foundation made a further commitment to provide leadership in this area.

This Report takes the next step. It includes an exploration of the educational potential of videocassettes and computer programs as well as audiocassettes. It also includes a recommended strategy for the Foundation to move forward in the use of technology for education purposes.

The Memorial Foundation is one of the very few international Jewish organizations with a primary commitment to Jewish culture and education. It is in a unique position to mobilize resources and intelligence to implement an investment strategy oriented to the new communication and information technology and the needs of Jewish education.

Scope of the Jewish Educational Challenge.

There are approximately 1,325,000 Jewish children in the world outside of Israel. Of these, the majority receive little or no Jewish education. The following table includes the best current information as to the state of Jewish education worldwide.

Table 1. Jewish Children by Type of Jewish Education Received
(late 1970's, adjusted)*

Region	children	day school	part-time	no ed
-----	-----	-----	-----	-----
East Europe	155,000	2,000	na	153,000
West Europe	160,000	35,000	45,000	80,000
North America	885,000	140,000	540,000	205,000
Other	125,000	45,000	28,000	52,000
	----	----	----	----
	1,325,000	222,000	613,000	490,000

*Based on information in Jewish Education Statistics: Research Reports #1 & #2 (Hebrew University, 1982 and 1983).

Only about one Jewish child in six receives a full-time Jewish education. Another one out of two receives some education, perhaps as little as a day a week in the years immediately preceding bar mitzva or bat mitzva; the remainder receive none. At a cost of \$3,000 per child to provide full-time Jewish education to almost all those receiving part-time or none, the problem can be restated as a \$3 billion problem (1 million children at \$3000 a head). So cost-effective solutions to increasing Jewish education are highly desirable. Do technological educational strategies offer such a cost-effective opportunity?

The focus in this study is on information and communications media rather than content. Marshall McLuhan caught the world's attention with his statement "the medium is the message," as a way to dramatize the power of new electronic communication media. Yet content is more important than method or medium. No technology, no matter how exotic, can compensate for boring or irrelevant material, poor teaching, and poorly thought-through curricula. The question to be addressed in this study is how technology can be used to enhance the educational process, in which good teaching, interesting and relevant material, and carefully thought out curricula are given at least as much attention as the technology of delivery.

For the purposes of this study, Jewish education includes both the formal and informal. Formal education takes place in a classroom, typically in a school, but also in a community center or synagogue. Informal education takes place outside the classroom in group settings involving self-study or a discussion leader, and in the home. Informal education could also take place in school in informal settings such as clubs or other after-school settings.

This study was carried out in the fall and winter of 1985. Interviews were conducted, previous reports studied, and material assembled, reviewed and analyzed both for general and Jewish education.

The study plan consisted of four steps:

- A. A review of the current state of the art in audio/video and computer-based education in general education.
- B. An assessment of the experience with audio/video and computers in Jewish education.
- C. An analysis of the potential for technology utilization in Jewish education.
- D. An exploration of an appropriate role for the Memorial Foundation in this field and a recommendation to the Foundation as to how it might best realize the potential of audio, video and computers in education.

This report consists of two parts: Part One focusses on the application of communications technology to Jewish education: audio and video. Part Two focusses on the application of information technology to Jewish education: the effective use of computers in Jewish education.

PART ONE

COMMUNICATIONS TECHNOLOGY AND

JEWISH EDUCATION:

AUDIO AND VIDEO

The power of communications technology in shaping our culture in the middle of the twentieth century, especially of television, can scarcely be overestimated. The average high school graduate today has spent nearly 50% more time watching television than sitting in a classroom. Can this power be tapped for educational purposes?

CHAPTER I - AUDIO & VIDEO IN GENERAL EDUCATION

Learning & Communications Technology.

As early as the 1950's, studies demonstrated that students could learn as well from television as from conventional classroom instruction. Initial distribution focussed on closed circuit methods; later it was extended to broadcasting, through pioneering programming efforts such as the Chicago Television College. During the 1950's and 1960's, universities, school boards, and other educational institutions obtained noncommercial broadcast licenses. Some educators used special distribution systems such as Instructional Television Fixed Service (ITFS)- a predecessor to the satellite systems discussed below.

The appearance and success of Sesame Street in 1968 followed by the Electric Company in 1971 was an important milestone in the development of educational TV. These Children's Television Workshop productions remain the most ambitious and successful example using the highest quality commercial visual broadcast standards to attain educational goals. These commercial standards were attained with enormous expenditure; yet these programs have been viewed so widely, that its current per viewer per episode costs are under \$.01. Another major effort at educational broadcasting was the Agency for Instructional Television (AIT), a joint U.S.-Canadian effort which produced a number of quality products in the late seventies. The U.S. Office of Education spent over \$70 million on children's television programming.

Six years ago it was reported that one-third of teachers nationwide use television regularly in their classroom. The typical public television station devotes about 40% of its broadcast schedule to educational programs. The emphasis in education is now shifting back from broadcast to non-broadcast programming, as video technology has improved.

But there is no consensus among experts as to the impact of new communications technology on education. The views range from those who believe that this new technology will revolutionize learning to those who believe that communications technology does not have any direct impact on learning.

Two distinguished professors of media and educational curricula --Richard Clark and William Winn-- have raised doubts about the

direct impact of media on education. Do students who use electronic media learn more or more quickly than those who do not? "Most current summaries of media comparison studies clearly suggest that media do not influence learning under any conditions...The best current evidence is that media are mere vehicles that deliver instruction but do not influence student achievement."* I am not at all convinced that a medium can affect how a person learns something...A medium (television, text, film, lecture) is nothing more than a device for getting information from one point to another"**

These same experts argue that the choice of a medium comes after the selection of the educational (curricular) goal, the message or content, the selection of a teaching method or style, and assessment of the learning skills of the student. Only then can media be selected to fit the educational strategy composed of content, teaching method, student level. Media are cast in supporting rather than central roles.

The Media Experience in Schools

The attempt to increase student interest through audio-visual material is hardly new in education. The older media -- records, filmstrips, and films -- continue to be adapted and expanded. Films are still in wide use, and are often preferred to video for large groups because of screen size and projection capacity. Yet newer projection systems for video are making video feasible for medium size groups (25-50 people). It is now relatively simple to copy films onto videotape making the material available in either format.

Filmstrips are still in wide use. Today they are likely to be packaged with audiotape cassettes and teaching material.

The most popular media seem to be film and video with video gaining rapidly, particularly for individual and small group use. Teachers were surveyed to find out how the private sector could help improve schools. Most teachers responded that business could be most helpful by providing teaching aids that were not available within regular school budgets. Teachers ranked

*Richard Clark, "Review of Educational Research" Education Communications Technology Jnl [ECTJ] (Spring, 1985) volume 32, #4.
**William Winn, Instructional Innovator (February, 1984) volume 29, #2 pp. 32-33.

different teaching aids with respect to effectiveness.* Their overall ranking is reproduced below:

- | | |
|--------------------------------|--------------------------|
| 1. 16mm film | 6. exhibits |
| 2. videocassettes, disks | 7. charts/graphs/posters |
| 3. filmstrips/slides | 8. booklets, pamphlets |
| 4. study and discussion guides | 9. audiotapes, records |
| 5. games, simulations | |

There seems to be a strong preference for visual as opposed to auditory media. Video as a medium seems ideally suited for teaching processes of change (e.g. slow motion to illustrate internal combustion). Visual techniques such as instant replay; close-ups, magnification, and time sequencing make the visual media such as video and film more attractive for many instructional purposes than print, still photos, verbal description, or audiotape.

Experts in the field seem to agree that audiocassettes are useful when the curricular objective, and content are auditory in nature, for example in language instruction. But given the visual orientation of the TV generation, and the experience of Sesame Street and Electric Company, even language instruction would seem to benefit from a visual treatment.

There are three types of tapes available: pre-recorded cassettes; re-tapings of educationally valuable broadcast material and tapes prepared by the individual media person or teacher. An example of the latter category is Me, Myself and I, developed by the Instructional Media Project for Severely Handicapped Students at Vanderbilt College in Tennessee, with a grant from the U.S. Department of Education in 1982.** The original goal was to enable special education teachers to use videotape to meet the individualized needs of handicapped students. The program makes it possible for a teacher to create personalized instructional programs by means of animations and special effects on videotape without special editing equipment and at relatively low cost. In some schools, students themselves have been involved in producing tapes. The use of video equipment can be a powerful motivator.

One of the most interesting applications of the new technology is in reducing isolation and in making quality teaching and even the most esoteric subjects available to the most isolated communities by using a combination of satellite communication, computers and interactive video. This new technology is being applied on an experimental basis in televideo rural schools. Some areas too remote, with populations of children too small to support

*Reported in AV Magazine (May, 1985) Volume 64, no.5.

**Described in Media and Methods (February, 1983) Volume 19, no. 6, pp. 14-17.

a school are being served from a central facility using two-way or interactive video.

The National Institute of Education Program in Alaska uses satellite televideo transmissions to link all schools in the State. A group of students in an arctic outpost can watch a teacher on a video monitor. The teacher in Juneau can point to a blackboard, ask a question: the student, one thousand miles away can answer the question, and have the teacher respond. The Northeast Educational Technology Consortium in Minnesota provides computer-based courses to rural schools with teachers working in Duluth. Varina High School in Henrico County, Virginia broadcasts classes to 35 rural counties. A system called Poly-net links seventeen schools in California.

Eighty-eight Texas school districts started receiving classes by satellite in August, 1985 through TI-IN Network inc., a private firm. TI-IN, which also broadcasts to California and Arkansas, expects to have 300 clients by next year, up from 110 this year. Until the availability of relatively low-cost satellite dishes and two-way video communication, these programs were not feasible. Participants in the TI-IN network can receive up to 13 state-accredited courses for an average first year cost of about \$15,000 for basic hardware and the subscription cost.

Not only can large numbers of courses be communicated at relatively low cost, such systems also can substantially expand the variety of what is made available, particularly to isolated areas. The number of high school students learning German in the state of Oklahoma doubled after Oklahoma State University began offering a televised language course to fifty schools. The TI-IN network also offers advanced teacher training via satellite.

The new technology is not without its drawbacks. Climatic conditions such as heat or rainstorms can interfere with or knock out transmissions. A semester of work can be lost because of a single computer programming error. And most important some students and teachers can't cope with the impersonality of televised learning.

Communications technology not only affects the learning of children, it has major implications for adult education as well.

Informal Education for Adults

The most important home electronics device since television is the videocassette recorder (VCR). Some have called the VCR the most important development in telecommunications since the printing press. By the end of 1984, the VCR population in the United States reached nearly 17 million or one for every five homes with a tv set. It is very widespread in Great Britain, Australia and Israel as well. Home video recorders are rapidly becoming a common home appliance. More than 14,000 general

interest pre-recorded cassettes are currently on the market; another 32,000 business, educational and other specialized tapes are available. Sales of VCRs in 1984 exceeded sales of home computers. (7 million compared with 5.5. million) An estimated 20 million prerecorded tapes were sold in the United States in 1984. Prices of VCR's have dropped sharply since 1975 when Sony introduced the first home system. Over the past ten years prices have dropped from over \$2,000 to under \$300 (for the least expensive models); blank tapes from \$20 to \$5 or \$6.

The VCR has emerged as the strongest home video delivery system of a set of alternatives that seemed promising in the 1970's and early 1980's. VCR's are more flexible and offer broader programming than cable networks that have had difficulty in sustaining audience and advertisers.

The most frequent use of VCR's is for "time-shifting" --the recording of television programs to be viewed at a more convenient hour followed by renting of pre-recorded movies. The fastest growing segment of the video market is music video followed by exercise tapes. Many other kinds of "how to do it" and children's tapes are being made.

Distribution of videocassettes is also more widespread. There are already more than 12,000 video specialty stores around the country; supermarkets and national chain bookstores are also getting into the videocassette business. Cassettes sell for \$50 to \$100; they rent for \$1 to \$6 a night. Rentals have proven to be surprisingly popular. The Sunday New York Times has recently added a special page on Home Video with reviews of new releases.

It has been suggested that the VCR has significantly changed the experience of watching television. With a home-video recorder, the once passive viewer is in control of his set, and not just in regard to scheduling. Watching a movie or TV show on tape becomes more akin to reading a book. One can stop and start at will, fast-forward through the boring parts, repeat and study the more interesting parts. The VCR is a dramatic advance in the adaptation of video to learning because it is precisely this form of "stop and go" control that is required if learning is to take place.

The presence of a videorecorder in the typical middle class American home, means that it is an easily used, relatively inexpensive communications technology, waiting to be used. The VCR has created a revolutionary new potential resource for adult education at home; videocassette home education may very well be a key development in this field in the second half of the 1980's.

Another major potential resource for adult education is the growing non-profit world of video art and independent video production. Over the past twenty years, programs, projects and entire organizations dedicated to video-making for

non-commercial purposes have developed. When the Sony portable video camera was introduced in the United States around 1965, visual artists began to use it as a new tool for making art. Others saw the portapak as a tool for expanding democracy and community involvement. Starting in 1968, non-profit media centers developed out of the needs and efforts of artists and activists who were inspired to create a new kind of television. In 1970, the New York State Council on the Arts established a media program to support this new activity. By the mid-1970's media centers had begun to actively distribute tapes and develop a market for independent video productions in schools, libraries, museums and on broadcast television. During the 1970's new organizations came into being to support and develop the field. For example, the Association of Independent Video and Filmmakers(AIVF) was established in 1974 as a national trade association to assist independent producers. It publishes a monthly magazine, The Independent (5,000 copies per issue) and currently has 2,000 members .The Media Alliance consists of 35 not-for-profit organizations (including AIVF) providing electronic media services and programs.

By the beginning of the 80's, a generation of videomakers had studied in university courses, were proficient and comfortable with today's sophisticated video equipment, and actively sought public awareness and acceptance for their work. They need access to low-cost equipment (cameras, decks, and editing systems). A substantial market for their work is represented by closed circuit (non-broadcast) distribution to schools, libraries and museums throughout Europe and North America.

This group represents the frontier in the creative and innovative use of video, and it is accustomed to operating with the low budgets characteristic of formal and informal education. Because of the artistic and unconventional aspect of much this work, there is a natural barrier between the educational establishment and the videomakers community that if broken down would immensely benefit the society.

Professional Training

Audio and video tapes seem ideally suited for self-study, and therefore lend themselves to adult education, and particularly for professional training. One of the most ambitious training programs is disseminated by the American Management Associations (AMA) Extension Institute. Their audio-cassette program consists of 40 management courses such as: computer fundamentals for managers; the supervisor's guide to increasing productivity; how to negotiate; how to improve your memory. Each consists of six one-hour audio-cassettes, accompanied by a workbook. Cassettes include management principles and case examples. Workbooks contain charts, graphs, exhibits, review questions and exercises, a pre-test and post-test. The AMA will grade the post-tests and indicate topic weaknesses. In one company, 90% of the

participants completed their course within the recommended three weeks. The audio-cassette program is seen as a flexible alternative to regular training workshops for employees whose personal or professional commitments make it impossible for them to attend workshops. The typical course cost \$155 per person.

The AMA model seems very adaptable for training of teachers and principals.

This review of audio and video in general education for children in schools settings; adult education in informal settings; and professional training, demonstrates that despite some caution, the new communications technology can be seen as a powerful tool for improving education.

CHAPTER II: AUDIO AND VIDEO IN JEWISH EDUCATION

In this chapter the discussion shifts to Jewish education. It includes: a summary of views of the role of electronic media in Jewish learning; a review of media utilization in Jewish schools; a brief description of the major centers of activity involved in producing, disseminating and promoting Jewish media; and a summary description of the kinds of material currently available for children and adults.

Electronic Media and Jewish Learning.

There is no more consensus about communications technology in Jewish education than in any other aspect of Jewish life. At one end of the spectrum there are those who view the use of modern media as an imperative for the improvement of Jewish education. "Probably of greatest significance in the long run is the lack of quality media resources for fostering the Jewish knowledge and identity needed to ensure the spiritual survival of Diaspora Jewry....Visual images in living color have become the language of the day. Unfortunately, however, the majority of Jewish institutions in this country are still in the Dark Ages. While the world at large has moved on to multidimensional modes of transmitting oral tradition, the Jewish world remains bound to the page."*

On the other hand, there are the skeptics: "While technology contributes to an enlightened Jewish education it is not a substitute for the actual transmission of a Jewish heritage and the learning/teaching of Jewish values...Both television and computers have become a new source of what I call 'edutainment'-the attempt to educate utilizing technologies that entertain, excite, and pacify our children. Many of us assume that if children are sufficiently fascinated by a technique or technology we will be able to sneak some teaching in as well."**

Experts on Jewish education do seem to agree with the experts on general education cited in Chapter Three. "Those [media] that work best (or work at all) are those tied to a curriculum and reinforced by human beings both in the classroom and at home....[Research indicates that] those who got the most out of [Sesame Street] were those who watched with family and discussed the program on an interpersonal level."*** Yaakov Reshef, Director of Multimedia and Materials Development for the Board of Jewish Education of Greater New York, similarly stresses the need to integrate media activity within a curriculum design.

*Introduction to the Chapter on Media, Second Jewish Catalogue.

**Moshe L. Botwinick, "Jewish Education in a Technological Age" The Pedagogic Reporter (January, 1984) vol 35, no.1.

***Botwinick, p.7.

Media in Jewish Schools.

A review of the current state of media in Jewish schools indicates that Jewish education is not quite the media desert portrayed in the Jewish Catalogue, nor is it overwhelmed by "edutainment" as suggested by Botwinick. Serious efforts at media utilization are underway, somewhat fragmented and scattered, with problems both of quantity and quality--but the potential is real and important.

Audiovisual aids have been part of Jewish education for many years. The American Association for Jewish Education (JESNA), had an active media department for years which published a journal, the Jewish Audio Visual Review. Yeshiva University in New York City, and Gratz College in Philadelphia had active audiovisual departments in the fifties and sixties--Gratz still does. The emphasis was on filmstrips for classroom use which were inexpensive to produce and easy to use and on 16mm. films.

The strong interest in video in general education is also found among Jewish educators. In a survey of 174 day and supplementary schools in the New York Metropolitan area in 1980, videocassette recorders were at the top of the list of media hardware needed.

Jewish Education Media Centers.

There are at least thirty Jewish education media centers across North America. These centers disseminate material, provide technical assistance, publish newsletters and catalogues and in a few instances actually produce audio and/or videotapes.

One of the largest of these media centers is at the Board of Jewish Education of Greater New York (NYBJE). It has a staff of four professionals. In addition to the traditional support functions of media centers, the Board has produced audio-cassettes, filmstrips with audiocassettes, videocassettes and films. The NYBJE has not only espoused the rhetoric of integrating media into curricular design, they have actually produced some prototypes. In 1983 two ambitious curricula were developed, both involving extensive use of media to support educational objectives: a curriculum for Orthodox junior high schools; and one for Conservative and Reform junior high schools.

The Tartak Learning Center at the Hebrew Union College in Los Angeles probably has the largest collection of Jewish audiovisual materials on the West Coast. The Ratner Center in Cleveland and the Media Department at the Chicago Board of Jewish Education have had very active programs. The Audio-Visual Department at Gratz College is probably the oldest Jewish media center. It has a large, but aging and deteriorating, collection of films in heavy use (they average 75 rentals a month or about 800 a year); some filmstrips, and very few videotapes.

The central Jewish organization responsible for promoting and supporting media has been the Jewish Media Service. Established initially as part of the Institute of Jewish Life sponsored by the Council of Jewish Federations (CJF), it later came under the joint sponsorship of CJF and the Jewish Welfare Board (JWB), and is housed at the JWB. Led by Eric Goldman, the Service has provided the intellectual leadership for the effort to educate Federations and other Jewish organizations about the potential of media to support a variety of communal objectives. The mandate of the Service does not specifically distinguish between Jewish education and other "Jewish" uses of media such as fund-raising, staff training for social service organizations, and general Jewish consciousness-raising.

The Service has published 30 issues of Medium. Each issue is devoted to a topic of Jewish interest (e.g. the aged; Israel; Holocaust; Jewish identity) and includes lists and reviews of relevant films and videotapes. In addition to Medium, the Media Service has published lists of feature films of Jewish interest available on videocassette from commercial distributors; a list of media centers; and a catalogue of Jewish films and video in 1983 and updated with a supplement in 1985.

The Service initially took a lead role in support of broadcast strategies (cable etc). Their orientation is now more in the direction of home videocassettes. Its current program involves the distribution of 29 carefully selected Jewish videocassettes (for purchase at about \$50). In 1986 the Service plans to make available the highly acclaimed 19 part series Pillars of Fire--the definitive visual history of Zionism and the establishment of Israel originally broadcast on Israel Television in 1981. It is available for purchase at \$500 for 19 programs.

Audio and Video Material for Jewish Education.

A review of sources of information about Jewish educational media indicates that there is no comprehensive body of audio and video material for children and adults. There is nothing like a set of videotapes or audiotapes for particular subjects or age groups. However, there is a wide variety of material in Jewish education.

Thirteen types of material are illustrated below. The first five are audio; the second five categories are video and the last three include both audio and video materials. The list includes both material intended for broadcast (radio or TV) or for direct use on audio or video players.

A. Audio Programs

1. Cassettes in support of books and filmstrips

- For teachers. For example, Behrman House distributes a teacher's cassette (\$3.95) as part of the supportive kit for When A Jew Prays by Seymour Rossel. The rest of the kit includes a two volume teaching guide and a student's encounter book.
- For students. Most filmstrips today are produced with audiocassettes serving as the soundtrack.

2. Cassettes for children.

Some cassettes are put out as complete programs. For example, the NYBJE has produced 3 audiotapes: a holocaust cassette, We Who Survive; Adventures with Abraham: A Biblical photo-drama; and My Life or Yours--an audiotape about the contemporary relevance of the Talmud. Between 500 to 1000 of each were sold at \$9 to \$16 per cassette. These cassettes are boxed and accompanied by teacher guides and other supporting materials. Another example of an audiocassette program is the Bible News Broadcast set of five cassettes "recreating" ten news broadcasts from Abraham to Saul.

3. Tapes for adults (nonbroadcast).

The Union of American Hebrew Congregations of America (UAHC) has had a long-standing interest in media for Jewish education. UAHC is one of the few major Jewish organizations that has made a major investment in producing and disseminating audiotapes. Tapes are viewed as resources for adult and teen study groups, for teacher education and individual self-study.

Audiocassettes are also in use for adults in the "right-wing" orthodox community. The Chadish program, for example, includes a full set of Torah cantillations (30 cassettes); the complete Psalms on tape (10 cassettes); 17 cassettes of "Torah discourses"; the Prophets (30 cassettes); and the Tanya--a book of Jewish mysticism by the founder of the Lubavitch Chassidic movement (30 cassettes).

4. Cassettes for adults (broadcast).

The Jewish People's University of the Air, sponsored by Touro College, has produced audiocassettes (\$40) covering Yiddish poetry; the Holocaust; Sephardic Jewry; Jewish values; and American Social Issues. These are intended for group listening and discussion.

5. Cassette music programs (nonbroadcast).

Jewish bookstores now have sections devoted to audiocassettes of Jewish music, ranging from cantorial to rock. Some are explicitly educational in objective: For example, Tara Publications has a series of six holiday cassettes (\$6 each) with accompanying song books(\$3).

B. Video Programs

6. Cassettes for children.

The NYBJE has produced several award-winning videocassettes. Several animated programs of excellent quality were produced under the aegis of Gesher in Israel. One, Lights, was aired on cable and is currently being distributed for home use. Others dealt with the Sabbath. Israel Instructional Television has produced a tape called A Passover Adventure for children and their families.

7. Cassettes for children (broadcast).

The most exciting and ambitious program for children is Rechov Sumsum, an Israeli version of Sesame Street. It aired in Israel in the Fall of 1984 and reached an astonishingly high portion of Israeli youngsters. Production of an American version of Rechov Sumsum is underway. The expectation is that the program will air on PBS.

8. Cassette for teacher training.

The Hebrew Union College-Hebrew Institute of Religion in Los Angeles has produced a videotape on teaching skills in the Jewish classroom (\$100 purchase; \$25 rental).

9. Cassette programs for adults (nonbroadcast).

While some new videocassettes are being produced, films are also being reissued as videocassettes. Images Before my Eyes and As If It Were Yesterday--both full-length feature films on the Holocaust are now being distributed as videocassettes. A videotape on Ethnotherapy with Jews, produced by the American Jewish Committee, is aimed at group showings.

10. Cassette programs for adults (broadcast).

10. Cassette programs for adults (broadcast).

The most ambitious and expensive Jewish television program ever produced was the 9-part series, Heritage: Civilization and the Jews aired on public television in the Fall of 1984. It had one of the largest audiences for any PBS series and probably the largest audience ever to be exposed to a single event dedicated to Jewish history and culture. While the series was criticized for the way it handled the controversy over the Divine vs. human origins of the Bible and for the somewhat ponderous style of some of the units, it represented a scale of ambition in video previously unseen in a Jewish arena.

The program had explicit educational objectives. A viewer's guide was prepared for home study and group discussion and study guides for class enrichment and course development for junior high school and other levels. Copies of the tapes are being made available to schools, community centers, synagogues and organizations. In addition to the material screened, hundreds of additional hours of video footage were filmed and not used. This is a potentially invaluable source of visual material on Jewish history and culture.

C. Audio and Video Programs

11. Cassettes from broadcasts.

The Eternal Light has been part of Jewish life for many years --first on radio and then on TV. Radio scripts and TV Programs on 16mm film have been available. Only recently has the Eternal Light Film division opened a video division with 2 titles: The Precious Legacy and The Odyssey of the Torah Scrolls.

12. Teaching Hebrew.

The Jewish Agency and the World Zionist Organization have made a major commitment to the development and use of audiotape for teaching Hebrew. A new videotape program is now being produced.

13. Video and Audio (broadcast).

The National Jewish Archive of Broadcasting was established in 1984 with support from the Revson Foundation. The Archive, established as a department of the Jewish Museum, has broad educational objectives as well as historical and research objectives. The goal of the Archive is to create a comprehensive audio and visual record of how the Jewish people and events

pertaining to the Jewish community have been presented since the beginning of broadcast history. To date, the Archive has collected over 500 programs including: historical documents; news and public affairs programming; television dramas and entertainment series; religious programs; and arts programs.

The field has been surveyed in the preceding two chapters . There is clearly great interest in the opportunity to use audio and video technology both inside the classroom as well as in less formal settings. It is also clear that a number of roadblocks need to be removed if this new technology is to be effective in helping to deal with the worldwide crisis in Jewish education. In the next Chapter the discussion shifts from what is to what could be.

CHAPTER III: THE POTENTIAL FOR ENHANCING JEWISH EDUCATION THROUGH ELECTRONIC MEDIA

Jewish Educational Media Choices

A variety of educational factors need to be considered in assessing the potential of electronic media. The first factor is clientele: children of various ages and their families; high school youth; young adults; families without children; and the aging--all have different educational needs. Providers (teachers and principals) as well as students are possible clients for media programs. Each group is a possible audience for a media-involved educational strategy. Second, each type of community -- large Jewish communities in the western world; small and isolated communities in the western world; and Eastern Europe -- has different educational needs. Third, the differences in educational setting -- full-time or part-time school; other institutions (e.g. community centers); informal group or family -- also need to be considered in assessing video and audio potential. These different choices -- clientele, type of community, and educational setting -- combine to form 37 possible audiences for a media strategy as outlined in Table 2 below.

Table 2. Potential and Target Audiences: Clientele, Community Type and Educational Setting

CLIENTELE	W E S T E R N W O R L D					EASTERN EUROPE
	LARGE COMMUNITY			SMALL COMMUNITY		
	School	Other Inst	Home	Group	Family	
STUDENTS						
PreSchool	X	X	(1)	/	X	/
5 TO 13 yrs	X	X	X		X	
14 to 17 yrs	(2)	X	X		X	
18 to 21 yrs	X	X	X	(3)	X	(4)
Adults	X	X	X		X	
Seniors	X	X	X	/	X	/
PROVIDERS	(5)					

Each audience is important and each can benefit from the new communications technology. There is every reason to expect that gradual expansion in the quantity and quality of video and audio materials will take place for all audiences. But of the many possible audience shown in the table, five are highlighted.

These five have been identified as target audiences for the Foundation's attention. They represent the greatest potential contribution of electronic media to Jewish education.

The Target Audiences.

These five audiences stand out because of: the Foundation's commitment to reaching the unaffiliated and isolated Jews; current understanding of the conditions under which audio and video are likely to be most effective; the needs in Jewish education; and findings about Jewish identity-formation in relation to the lifecycle.

Three audiences or "submarkets" seem to be particularly appropriate for audio and video strategies in the western world:

- (1) pre-school children at home in large communities
- (2) post-bar mitzva/bat mitzva youth in high school in large communities
- (3) informal study groups of mixed age groups in small communities
- (4) The community in Eastern Europe. This fourth target audience is heterogeneous not only in the age of members and the sizes of its communities, but in the variations in conditions in each country. Hungary is very different from the Soviet Union.
- (5) The providers of education--teachers and principals.

The rationale for the identification of each of these as target groups is discussed for each group in turn.

(1) Families with pre-school age children in a home setting.

Substantial evidence about learning suggests this as a key age group and setting. The decisions to invest in Headstart at the federal level and in Sesame Street were based on these research findings. Studies of Jewish identification indicate that the transition from no children to children in a family is the strongest single factor relating to increasing Jewish consciousness; more important than age or any other factor. Families with young children are more open to Jewish identity -building. Confidential interviews carried out with a representative sample of American Jews with young children indicated that most are very interested in their heritage -- history, culture and tradition -- but are not open to religious institutions or their schools. The home is a logical setting to reach these marginally affiliated Jews at this most open time of their lives.

(2) High school students in a school setting.

Bat-mitzva and bar-mitzva is not only the key ceremonial event in the lives of Jewish young people. It is also the objective of much part-time Jewish education, after which Jewish education ceases. Yet the reality of adolescence is that this is a key formative period in a person's life. It is precisely at this point that more Jewish education becomes critical in shaping life-long values, skills and knowledge. It is also an age group that is often technologically-oriented; an age group that is easily bored by the "old-fashioned".

Jewish students in non-Jewish private schools --are an important "subgroup" of Jewish teens. Many of them, the children and grandchildren of Jewish leaders, receive little Jewish education. After bar-mitzva or bat-mitzva their Jewish education disappears or becomes unimportant vis-a-vis their demanding and challenging pre- college secular studies. In the effort to strengthen Jewish schools, this group is often overlooked. Video projects and cassettes lend themselves to supervised self-study or extra-curricular activity.

(3) Small groups in small western communities (mixed ages).

While even very small communities have schools, there is substantial opportunity to dramatically broaden the richness and diversity of Jewish learning through audio and video. Even my own experience in small Jewish communities in India suggested that the very smallness of a Jewish community can be an opportunity for community-building. Many of the traditional intra-community divisions disappear when Jews are few in number, and often they seek the warmth of the group. In New Delhi, for example, even when there was not a minyan, Jews would gather to pray and study together on a Friday night in the synagogue building.

(4) The entire Jewish community of Eastern Europe.

Differences of age and educational setting pale into insignificance in relation to the common anti-Jewish external environment. Inter-country differences do need to be factored into any educational strategy in Eastern Europe. In view of the stress of most of that environment, audio rather than video strategies seem the most sensible. The cassette is portable and

replicable and the hardware (cassette player) portable and relatively inexpensive.

(5) The providers of education--teachers and principals.

The difficulty in securing trained teachers and adequately prepared principals is at the top of the list of many who have studied the international need for Jewish education. Neither audio nor video is likely to provide an instant transformation of quality nor increment of quantity to the field. However, audiocassettes in particular lend themselves to teacher and principal training. Portability and low cost are important. The privacy of one's own home or car are good places to admit what one doesn't know even if one is a trained professional. The American Management Associations analogy (see Chapter I) seems to be a powerful one.

Delivery Systems.

The design of a delivery system for each of these target audiences involves a number of choices: audio vs video; over the air broadcast (tv or radio) vs cassette player (audiocassette or videocassette) vs. satellite vs closed circuit. Which system is likely to be more effective for which audience and what will it take to deliver?

It should be obvious from the foregoing discussion that audio and video do not represent an alternative delivery system for Jewish education outside of school and family. Clearly they have to work inside the school or family. Nor do they represent an alternative to a teacher. Education still requires a teacher and a student and a setting. Media can dramatically change the relationships -- spatial and functional: spatial, because the teacher can be a thousand miles away; and functional, because the student may become more of a learner with more participatory effort.

The chart below "matches" the appropriate delivery system with each of the five target audiences.

<u>Target Audience</u>	<u>Delivery System</u>
Pre-school home (major western communities)	-video broadcast -video cassette program
Teenage in school (major western communities)	-participatory video -participatory audio (for language and music)
Study groups (small western communities)	-satellite video
Eastern Europe(family & study groups-all ages)	-audiocassettes
Teacher and principal training	-audiocassettes

The program outlined above requires a substantial investment in hardware (equipment), and even more important, in software (programs).The brief survey of types of available material presented in Chapter II makes it clear that there is substantial adaptable material such as the Heritage Series tape that was not used, but relatively little that has been packaged in curricular form.

The one major exception is in the efforts underway to develop quality video broadcast material for very young children. Given the significant investment already made in the U.S. version of Rechov Sumsum, it does not appear that additional broadcast programs are needed at this point. There does not appear to be any other systematic effort underway to meet the specific needs of other target audiences.

In Part Two of this Report, which follows, the educational potential of the computer is considered. In the final Chapter of this Report the opportunity to convert potential into reality is examined in relation to the role of the Memorial Foundation.

PART TWO

INFORMATION TECHNOLOGY AND

JEWISH EDUCATION:

COMPUTER-ASSISTED LEARNING

In thinking about computers several distinctions are important. The distinction between software and hardware is familiar to most people. The term "hardware" refers to computer equipment: the central processing units, keyboards, screens, and printers. The term "software" refers to the instructions or programs used to make computing take place. While hardware looks more impressive than the innocuous-looking disks or tapes that contain programs, most of the important issues in computing tend to revolve around software. It is important to note that each type of computer requires programs written for that machine. IBM programs cannot run on Apple and vice versa. Since no one type of computer dominates the school environment (Apple is the most popular) there is little direction that the Foundation can offer in this area, except to point out that schools should stay away from exotic and obsolete "bargains" or gifts unless they are absolutely certain that popular types of software can be run on them. Most of this discussion will focus on software rather than on hardware issues.

In this discussion the term "computer" means a "microcomputer" rather than a "minicomputer" or a "mainframe." A microcomputer is a relatively low-cost, compact, free-standing and self-contained computing machine. Except for the very largest schools or school systems, it is the only relevant kind of computer. Larger computers (minicomputers or mainframes) have the advantage of making it possible to store and retrieve immense amounts of material. The Bar-Ilan Responsa project for example, relies on very large computers to provide access to the vast body of Jewish legal thinking found in thousands of responsa. There will be more and more applications of this type, essentially library and archival in nature. This discussion focuses on microcomputers, the computing system available to families and schools. Opportunities to link mainframes and micros may need to be explored in the future.

Another distinction, specifically important in thinking about computers and education, is a distinction of purpose. Computers in schools are used for three purposes: 1) to teach computing and about computers; 2) to support school management and 3) to help students to learn and teachers to teach. This Report focuses on the third purpose -- use of computers in learning.

(1) Computing is becoming a subject in curricula at all levels of education. Computer literacy (learning about computers) and learning programming languages are taking place alongside literature and science. Learning computing per se is not a concern of Jewish education, except in the day school, where the quality of the school's computer program may affect the school's ability to compete for some students. Issues in computer literacy are important in relation to teacher involvement and training and these will be discussed.

(2) Another important use of computers in Jewish schools is their use for management purposes --academic and financial record-keeping and reporting for teachers, students and administration. The issues relating to the use of computers for school management are only marginally different from their use in other management settings. There is no particular need to discuss these issues in this Report.

(3) The third role of the computer in education is the use of the computer as an educational tool. In this mode the computer is used to teach a subject such as mathematics, history or Bible. The focus in this Report is on this third role of the computer -- the use of computers to enhance learning, and in particular learning of Jewish subjects.

PART TWO

INFORMATION TECHNOLOGY AND

JEWISH EDUCATION:

COMPUTER-ASSISTED LEARNING

CHAPTER IV: COMPUTER UTILIZATION IN GENERAL EDUCATION

The advances in information technology in the last forty years can scarcely be overestimated. A newspaper columnist working at home remarks casually that he has more computing power in his barn-office than existed in the world at the time of World War II! The micro-computer revolution has put tremendous computing power literally at the elbow of anyone. Is this power being tapped for educational purposes?

There is no consensus among experts as to the impact of the new information technology on education. The views range from those who believe that we are on the brink of a revolution in education because of the new technology to those who believe that information technology does not have any direct impact on learning.

While no definitive position is possible, there is some evidence that computers are beginning to make a mark on education. This discussion of the current state of the art is subdivided into a consideration of computers in schools and a brief look at some of the computer resources available to general education.

Computers in Schools

One of the most important sources of information about computers in schools is the National Survey of School Uses of Microcomputers. This survey was carried out by the Center for Social Organization of Schools at The Johns Hopkins University in 1983 and in 1985. Much of the following profile of computer utilization is based on various reports from the 1983 survey. Results from the 1985 study are only now becoming available.

What are computers used for & how extensive is computer utilization in education today? The reported uses of computers are shown in Table 3. Computer literacy -- introduction to computers and programming -- is more frequently reported than any type of computer use for instruction. Among instructional uses it is useful to distinguish between drill, practice and tutoring on the one hand and problem-solving, simulation and "games" on the other hand. Drill and Practice and tutoring are oriented to teaching and/or reviewing relatively straightforward facts or simple skills. Typically such programs involve a sequence of questions and answers, in which a correct answer to one question triggers the next question and an incorrect answer triggers a remedial sequence of information or simpler questions. After computer literacy, "drill and practice" and tutoring for special students appear to be next in importance.

The more glamorous uses of computer instruction -- problem-solving, simulation, and lab demonstrations -- involve an

attempt to simulate or recreate a real-world situation and usually involve complex graphics, color and sound. The learning objectives similarly are more complex involving more thinking and creativity on the part of the student. These more advanced applications were reported only by 20 to 25% of the teachers surveyed. Perhaps this balance will shift in the future. Those who believe that technology will transform the educational process expect more use of computer simulations for laboratories and other classes.

Table 3. Reported "Regular" or "Extensive" Educational Uses of Microcomputers
(percent of teachers reporting such usage at their school)

	SCHOOL LEVEL Elementary	Secondary
Introduction to computers	64%	85%
Programming instruction	47	76
Drill and practice	59	31
Tutoring for special students	41	20
Programming to solve problems	27	29
Recreational games	24	19
Demonstrations, labs, simulations	20	22
Business ed./vocational	—	29

Source: School Uses of Microcomputers (Center for Social Organization of Schools, Johns Hopkins University), Newsletter Issue no. 1, April 1983, page 4.

The Survey, carried out in the spring of 1983, found a different pattern of utilization in elementary schools and in secondary schools (junior high and high schools). Of course there were also great differences among various schools of each type.

By January, 1983 over 40% of the elementary schools in the United States had one or more microcomputers -- up from under 5% in 1980. Parochial schools are much less likely than public schools to have computers. 46% of the public elementary schools and only 25% of the elementary parochial schools had computers; of course this is the sector that Jewish day schools are part of (see

Chapter VI below). The "typical" microcomputer-owning elementary school in 1983 had two microcomputers, each used for about 11 hours per week. Each week about 15% of the student body (62 students out of 400 in the typical school) each receive about 20 minutes of computer time.

The most important use of the microcomputer in elementary education (40%) is for practicing math and language facts, spelling drills, and various other memorization tasks. The second most important use (30%) is for copying, writing and testing computer programs. The third most important use (20%) is playing games under supervision including learning games that may include disguised drill and practice. The relatively brief amount of time spent by the typical student on a computer seems consistent with the view that despite the "drill and practice" label, there is not enough time for any significant skill-building to take place (even assuming excellent computer programs). Thus even drill and practice may be a kind of computer literacy.

Secondary schools, on the other hand, have more computers, more computer use, and use them differently. Over 75% of the nation's secondary schools had computers by early 1983 (up from 20% in 1980). The typical microcomputer-owning secondary school had 5 microcomputers in 1983, each in use for 13 hours per week. Each week over 11% of the students (80 out of a typical school of 700) each use the computer about 45 minutes. Programming and computer literacy are by far the most important type of computer use (66% of the time). Drill and practice account for 18% of the time, and the remaining 16% is spread among many different uses.

If all students in all grades of elementary and secondary schools owning computers were to be involved in computer-related study, utilization would average three to five minutes per student per week! Thus, computers have hardly moved into a central position in American schools. The talk about a computer revolution seems highly overstated. On the other hand, the astronomical growth rates in the spread of computers, and the excitement about computers in the educational literature may mean a very different and much more important role in the future.

What are the most effective strategies for introducing computers into schools? The Survey examined the different ways that computers were introduced into schools: by a particular teacher, a group of teachers, by the principal or by other administrators. Each method of introduction was measured in relation to depth and breadth of computer utilization. In elementary schools in which a group of teachers leads the effort, microcomputers appear to be used with the greatest "success."

The study also analyzed different sources of funding for acquiring computers. About half of the acquisitions to date were made with outside funding sources including federal governmental

resources. The type of funds for acquisition did not seem to be related to the degree of "success" in using micros, with one exception. Schools where the parent groups were involved in fund-raising for the purchase of micros reported higher student enthusiasm and independent student learning than other schools.

Do computers make an educational difference? While the survey did not measure educational results of computer use directly, there are some relevant views in the Survey. 28% of the public high school respondents report "much more" learning as a result of having micros for above-average students and 20% reported many more students doing independent work. Only 5% percent of the respondents reported much improved learning by average or below average students.

Computer Resources in General Education

Millions of children in thousands of schools represent a very substantial market for educational products, and there are literally thousands of educational programs being marketed. The January/February 1986 Buyers Guide and Reference Directory in Media and Methods lists over 70 companies producing and/or distributing educational software. Companies range from giants like Intellectual Software (QUEUE), or Grolier to "mom and pop" operations selling a single program. It has been estimated that the market for educational software will top \$2 billion by the end of the decade. The Control Data Corporation developed a sophisticated computer system called PLATO in the 1970's for large computers. In the early 1980's PLATO was adapted for microcomputer use. PLATO includes 12,000 hours of instruction including basic mathematics, reading and grammar skills; high school English, mathematics, social studies, sciences, and foreign languages.

The Bank Street College of Education has been one of the pioneers in the development of educational software. The emphasis has been on adapting products that work for adults and making them work for children. The Bank Street Writer is one of the most popular word processing packages -- it is one of the simplest to use. The Bank Street spelling program is aimed at making children learn how to spell, not simply spoonfeeding the right answer. Since the College operates a 450 seat school, every program is carefully pre-tested with live teachers and students before marketing.

Are computers in schools here to stay or will they go the way of the teaching machines of the seventies? It would appear that they are here to stay. Yet clearly their role is still peripheral to the main business of classroom and teacher using chalk and blackboard, pen and paper. While it is difficult to envision the computer replacing the teacher in the central educational role, it does appear that increasingly sophisticated programming and increasing computer literacy among teachers will broaden and deepen the computer experience in schools. The role of the

teacher is likely to be gradually transformed. More students will control more of their own flow of information and the teacher who used to dispense information can become more of a guide.

CHAPTER V: COMPUTERS IN JEWISH EDUCATION

In this chapter the discussion shifts to Jewish education. It includes a summary of views of the computer in Jewish learning; a summary of what is known about computer utilization in Jewish schools; a description of the major centers of activity involved in producing, disseminating and promoting Jewish software; and a summary description of the kinds of material currently available and being produced.

Computers and Jewish Learning.

There is no question that the issue of computers in Jewish education is "hot". Both the Coalition for Alternatives in Jewish Education (CAJE) and The Jewish Agency are exploring the role of computers in Jewish Education. Of course there is no more consensus about information technology in Jewish education than about the use of computers in general education. At one end of the spectrum, there are those who are enthusiasts about computers as a vehicle for the improvement of Jewish education: "The computer is and can be an effective educational tool to transmit the Jewish heritage...In a sense then the computer becomes somewhat akin to the legendary Golem of Prague, a brainless, emotionless mass that comes alive when the word of God -- the Torah and its traditions -- are implanted within it."* On the other hand, there are the skeptics.

"The computer has the potential to plant in our minds a mechanistic, reductionist model of the human being...Jewish education is not the place to institute technologies that may be anathema to the human factor of a religion, culture, and heritage."**

As in the case of audio and video the "golden mean" seems appropriate. Computers are neither a panacea nor a technocratic menace to human values. Rather they are one important artifact of our culture that it would be foolish to either worship or to ignore.

*Alan Rosenbaum "The Jewish Computer" The Pedagogic Reporter (January 1984) vol 35, no. 1, pp.8-9.

**Moshe L. Botwinick "Jewish Education in a Technological Age" The Pedagogic Reporter (January 1984) vol 35, no.1, pp 6-7.

Computers in Jewish Schools.

Unfortunately, there is no parallel in Jewish education to the Johns Hopkins study cited in Chapter I. In that study, it was reported that only 25% of the parochial schools in the United States had computers. Assuming that Jewish schools might be somewhat more likely to have computers than catholic parochial schools, the proportion might be as high as 40% or 50 %. A very small study of Jewish schools based on about 100 responses, reported that 95% of the respondents have computers with 8 or 9 computers per school. With over 2,500 Jewish schools in North America one cannot be confident that such a high rate of computer utilization is typical. Whatever the precise rate, it is obvious that the utilization of computers in Jewish schools is significant and is increasing. It also appears that the primary uses of computers in Jewish day schools is in secular or general studies rather than in Jewish studies. Some schools are using Jewish software. For example, Davka has sold software to over 200 schools all over the world.

Jewish Resource Centers

At the present time there are three major resource centers supporting computer utilization in Jewish education in North America. Two are in Chicago: the Institute for Computers in Jewish Life (The Institute) and the Goldman Computer Department for Jewish Studies of the Associated Talmud Torahs of Chicago (Goldman). The Institute has concentrated on the development of software -- over 50 packages have been marketed under the name DAVKA. It also has worked with Bar-Ilan University on its responsa program. The Institute publishes a newsletter, provides training, and has recently established a new on-line computer bulletin board for Jewish information called GOLEM. Goldman has developed a comprehensive program of computer support: teacher training; software development; hardware acquisition for the ATT system; a software and hardware library; and a research program.

The third important center for supporting computer use in Jewish education is the Center for Computers in Jewish Education at the Bramson ORT Technical Institute in New York City (Bramson). It has one of the largest collections of Jewish software, and is organized to encourage Jewish educators to preview software. The Center also offers computer courses for Jewish educators.

Software for Jewish Education.

A review of sources of information about Jewish educational media indicates that there is no comprehensive body of computer-assisted curricula for children and adults. There is nothing like a set of computer programs for particular subjects or age groups. However, there is a wide variety of material in Jewish education.

There is also no comprehensive descriptive catalogue of existing software available, but there is at least one reasonably complete listing of Jewish educational software in the public domain.* As teachers and students begin to create and adapt their own software, the information flow about software will be increasingly informal. Jaskoll identified 156 educational programs produced by sources in Israel and the United States as of the spring of 1985. The number has undoubtedly increased since then. The largest single producer is DAVKA with fifty programs, followed by Tekoa with 25 and Tomer with 18. The remaining sixty three are produced by 26 different sources.

In Table 4 the available software is distributed into 9 categories for the three major producers and all others. By far the largest number of programs (40) are in the area of Hebrew Language and literature, followed by Holidays (27) and Bible (27). Considering the substantial amount of software produced in Israel, there is surprisingly little material on Jewish history and modern Israel.

The field has been surveyed in the preceding two chapters. There is clearly great interest in the opportunity to use computers, particularly in the classroom. It is also clear that a number of roadblocks need to be removed if this new technology is to be effective in helping to deal with the worldwide crisis in Jewish education. In the next Chapter, the discussion shifts from what is to what could be.

*Ira L. Jaskoll "Existing Computer Materials" Compass (Spring 1985) Vol. 8, no. 2, pp. 7-8;18-22.

Table 4.. Jewish Educational Software, by subject area

PRODUCER/ DISTRIBUTOR	S JEWISH HISTORY							U JUDAISM LANGUAGE (IDEAS & RITUALS)		B HOLIDAY BIBLE		E TALMUD ISRAEL		T HEBREW WORD PROCSNG & OTHER		GENERAL KNOWLDGE	
	HEBREW LANGUAGE (IDEAS & RITUALS)							J BIBLE		T HEBREW WORD PROCSNG & OTHER		I ISRAEL		K KNOWLDGE		O OTHER	
DAVKA (50)	(1)	(11)	(6)	(14)	(7)	(1)	(4)	(1)	(5)								
TEKOA (25)	(1)	(3)	(2)	(8)	(1)	(3)	(6)										
TOMER (18)	(1)	(7)	(1)	(6)													
Other Providers (63)	(3)	(19)	(3)	(11)	(6)	(2)	(1)	(6)	(12)								
TOTAL (156)	(6)	(40)	(10)	(27)	(27)	(4)	(8)	(15)	(19)								

*Based on data in Jaskoll(1985)

CHAPTER VI: THE POTENTIAL FOR USING COMPUTERS TO ENHANCE JEWISH EDUCATION

In order to intelligently assess the potential contribution of computers to Jewish education it is helpful to briefly summarize what appear to be the pluses or areas of strength and minuses or areas of weakness.

PLUSES

- enhances motivation (for at least some students)
- Use seems to be correlated with improved performance (probably for higher-achievement students)
- Opportunity to narrow "sophistication gap" between general and Jewish education

MINUSES

- high unit cost (high-quality is expensive and market is small)
- teachers have not been trained in the use of computers
- limited application to complex subject matter and values

Of these points, the last positive point is not necessarily self-evident. One of the great challenges to the future of Jewish education, particularly as it affects supplementary or part-time schools is the "sophistication gap". Jewish education must compete with general education for the attention of Jewish students. If a student is exposed to sophisticated ideas and methods in their public or private school, and then goes to an afternoon school that is perceived as limited and old-fashioned, the student is lost. This problem affects not only the presence or absence of computers, but the programs in use. If a student is exposed to an exciting simulation of Napoleon's wars in Europe in the morning and is given a fact drill computer program to study Judah Maccabee's wars in the afternoon school, again Jewish education loses.

The appropriate response to the listing of the pros and cons of computer utilization is to accept that the computer, no more than the videorecorder, is not a "universal solvent" --it cannot solve all problems all places. It can make a significant contribution for some target groups in some settings.

The Target Audiences for Computer-assisted Education.

The different factors -- clientele, type of community, and educational setting -- discussed in Chapter III in relation to electronic media, also help to define different potential audiences for a computer strategy. In identifying the most

promising audiences for computer-assisted learning, several criteria emerge from the preceding two chapters:

- Children appear to be a more promising target audience than adults for most computer applications. The current generation of children is the first micro-computer generation on Earth. Their parents are learning from them. Thus, even though home computers are becoming very widespread in the western world (projected as 1 in 3 homes by the end of the 1980's in North America), the comfort level most adults have attained with VCR's does not seem to have been paralleled with computers.
- While there has been experimentation with computers for pre-schoolers, experience seems to indicate that the primary and secondary school age is the more appropriate target for the drill and practise and analytic uses of the computer. This may change over time with more sophisticated programming.
- Given the primacy of school-age children, and the excitement that the computer seems to be generating in some advanced Jewish schools and school systems, the school setting rather than the home setting in the large to medium size Jewish community seems to offer the most promising target for computer usage in Jewish education.
- Teen -age youth in supplementary school settings are an important group for computer-assisted learning. As was noted in the discussion of audio/video opportunities, the post bat-mitzva or bar-mitzva period is a critical point at which supplementary education frequently ceases. Yet the onset of adolescence is a key formative period in a person's life. It is precisely at this point that more Jewish education becomes critical in shaping life-long Jewish values, skills and knowledge. This is an age group that is often technologically-oriented; an age group that is easily bored by the "old-fashioned." Like video, computers may be a useful motivating device for encouraging such students to continue their education.

Jewish students in non-Jewish private schools are an important "subgroup" of Jewish teens. Many of them are the children and grandchildren of Jewish leaders. Often, they receive little Jewish education. In the effort to strengthen Jewish schools, this group is often overlooked. Computer projects lend themselves to supervised self-study, part of most private school curricular and extra-curricular programs.

- The teaching profession is the most important target audience for computer-assisted education. Many of the most perceptive students of the subject, suggest that the

key roadblock to the effective use of computers is suspicion, hostility and underpreparation of teachers. Computers were found to be most effective in schools where their introduction was spearheaded by a group of teachers. Many more science and math teachers are technologically oriented than teachers of Bible or Jewish history. Thus a natural leadership group that is present in secular schools may not be present in Jewish studies, and special effort is needed to find or create such leadership.

- For the small community, the family is a more promising locale for computer-assisted learning than the small group model proposed for video/audio learning. Unlike viewing or listening, computing is an individual not a group process, except for some two-person games. Fundamentally, one person sits at the keyboard and interacts with the program. It is hard to envision assembling a group to "view" a computer program in a synagogue or center in a small Jewish community the way a videotape might be viewed.
- Unlike the video/audio strategy proposed in the first Report, all of the target audiences or "submarkets" particularly appropriate for computer-assisted learning strategies are in the western world. There is no computer analogue to the critical role of the audiocassette recorder for Eastern Europe.

This analysis of current understanding of the conditions under which computers are likely to be most effective and for whom; focuses attention on the six target groups highlighted in the Table 5 below.

Table 5. Potential and Target Audiences: Clientele, Community Type and Educational Setting

CLIENTELE	W E S T E R N W O R L D						EASTERN EUROPE
	LARGE COMMUNITY			Home	SMALL COMMUNITY		
	FullTm School	PartTm School	Other Inst		Group	Family	
STUDENTS							
PreSchool	X	X	X	X	X	/	X
13 yrs. or less	(5)	(3)	X	X	X		X
14 to 17 yrs.	(4)	(2)	X	X	X		X
18 to 21 yrs.	X	X	X	X	X	(6)	X
adults	X	X	X	X	X		X
seniors	X	X	X	X	X	/	X
PROVIDERS	---(1)---						

The identification of these six target groups does not suggest that other audiences aren't important or that others cannot benefit from the new information technology. There is every reason to expect that gradual expansion in the quantity and quality of computer software will take place for all audiences. The purpose of this discussion has been merely to identify the most promising audiences.

A second important "targeting" issue involves the identification of the most promising areas for investing in reaching these audiences.

Delivery Needs

It should be obvious from the foregoing discussion that computers do not represent an alternative delivery system for Jewish education outside of school and family; clearly they have to work inside the school; nor do they represent an alternative to a teacher. Education still requires a teacher and a student and a setting. The computer can dramatically increase educational options for a given teacher, student and setting.

All of the available evidence seems to suggest that the active cooperation and involvement of teachers is critical. One of the ways to involve teachers is to equip them to adapt existing programs to their own needs using "authoring programs". While there are some who argue that a teacher should teach and leave the programming to the programmer, the benefits of teacher involvement, and the scarcity of programmers in the educational environment, probably means that teachers will be writing or adapting programs for their own use, and programs that are designed to be amended will be useful and popular.

One of the most common pitfalls in any environment into which computers are introduced is the failure to plan. Sometimes hardware becomes available, then people begin to scramble to decide what to do with it. Software is purchased, then an effort is made to fit the software into the existing curriculum, and to persuade teachers and students that a computer, like bad-tasting medicine, is good for you. Actually, the reverse is the appropriate sequence. A planning group needs to review the curriculum and learning environment of the school for areas which need strengthening. Introducing computers should be viewed as one option for making the needed improvements in the curriculum and learning environment of the school. The strengths and weaknesses of available software need to be evaluated, and hardware selected that best matches the software that seems to meet the educational needs of the particular school.

These delivery targets are summarized below:

Target Audience

In Large Jewish Communities:

1. Teachers in part-time and full-time, primary and secondary schools
2. Youth in part-time secondary schools (14 to 17yr olds)
3. Children in part-time primary schools (13 years or younger)
4. Youth in full-time secondary schools (14 to 17 year olds)
5. Children in full-time primary schools (13 years or younger)

Families in Small community

Delivery Needs

- Training programs and authoring programs
- New and modified curricula and software; computer planning & resource centers
- "
- "
- "
- Video/computer (satellite) systems

In the final chapter of this Report, the opportunity to convert potential into reality is examined in relation to the role of the Memorial Foundation for audio/video strategies, computer strategies, and combined video-computer approaches.

RECOMMENDATIONS :

ROLE OF THE MEMORIAL FOUNDATION

RECOMMENDATIONS: THE ROLE OF THE MEMORIAL FOUNDATION

The Memorial Foundation is in a unique position to provide leadership in the application of modern information and communication technology to the field of Jewish Education. It is an international organization: the problem is international. Culture, education and the continuity of the Jewish people are at the core of its mission. The Foundation encompasses diverse ideologies within a unified approach. The nature of its program is such that it is flexible, free to find and support the most effective current approaches. It is not locked into the tools of the past.

Leadership is badly needed. Existing organizations investing energy and resources in Jewish media are not necessarily focussed on education. Media-oriented Jewish education organizations such as Jewish education media centers are too localized to make an international or even a national impact. Existing expertise in computers is not necessarily effectively connecting with expertise in Jewish education. While there are groups in Israel and North America developing software, they tend to be localized and under-capitalized for effective development and distribution. Overall, the effort, both in electronic media and in computers is too diffuse.

The crucial need is to create a systematic agenda for action. In the concluding pages of this Report some basic principles are suggested and some options are presented for high-priority, high-impact projects that might be priorities for Foundation investment in communications and information technology for Jewish education.

Basic Principles.

1. Investment in technology for Jewish education should incorporate audio as well as video and computers. In the appropriate excitement over computers and video, audio opportunities should not be ignored.
2. The agenda for action should include elements targeted both at children and adults, at school and at home. There is no obvious preference for one group or setting over the others.
3. The design, production, and distribution of the new technology to schools must place teachers at the heart of the effort. Attempts to produce "teacher-proof" curricula for Jewish schools in the seventies were a dismal failure. The computer and audio/video machine can only be seen as a tool for teachers not as a replacement for teachers.

4. Audiocassettes, videocassettes and computer software must be produced to fit into, not replace school curricula. Of course the new technology can extend, deepen and enrich existing curricula; but software created in a vacuum is not likely to be used or usable. Only where curricular goals, content and teaching style have been thought through and an applicant can show how the media piece fits in and enhances, should the Foundation consider funding.

Experience with video and computers suggests that achieving high quality is expensive; yet today's "TV generation" expects high-quality as a matter of course. With enormous needs and high unit costs, the resource demands of an effective strategy could be substantial. This suggests three additional principles.

5. The Foundation should leverage its resources by cooperating with others on specific projects. Others might be individual philanthropists, existing media or computer-oriented institutions, other Foundations or other communal organizations.

6. A concerted effort should be made to reach out and involve new sources of creative talent, particularly the kind of talent involved in the non-profit world of independent video described in Chapter One. Many of the young video-makers are Jews who are not connected to the Jewish community. Involving them in experimental programs, whether through competitions or commissioned works, is a way to reinvolve them in the community as well as attaining lower cost, high quality products.

7. A concerted effort should be made to adapt existing educational software developed for general education to the specific needs of the Jewish school. There is at least 20 times as much general educational software as Jewish software; probably 100 times as much money has been spent on its development; and with all the criticism of the quality of general educational software, it is likely to be of far higher quality than what can be produced for the far more limited Jewish market. It may be possible to find software producers operating in the general market who would permit adaptation on a non-profit basis.

The following suggestions for high-impact projects flow out of the analysis in the previous chapters and are recommended with these seven principles in mind.

In addition to the projects discussed below it is recommended that the Foundation sponsor the production and periodic updating of three catalogues: one on audio and video for children and youth; one on audio and video for adults; and one on computer software for children. There is very little general interest Jewish software aimed at adults.

The following nine project proposals represent a "shopping list" of possible Foundation-sponsored efforts. A more detailed analysis of cost and feasibility would be needed after the basic

choice of project area and scope were decided. Three types of proposals are included: Electronic media (video and audio) proposals; computer proposals; and an interactive video /computer proposal.

High-Impact Project Proposals: Options for Memorial Foundation Investment

Electronic Media

1. A program of video cassettes for young children and their families: holidays, Jewish values, alphabet. The Homestart program distributed by Behrman House is an impressive print version of what is needed. It is possible that this material could be adapted to videocassettes. The Rechov Sumsum broadcast programs might also be marketed as cassettes for home use.
2. A participatory video and audio (music and language) program for teens in school. The emphasis is on participation. Teachers and students should be involved both in creating as well as in viewing and listening. Both supplementary and day schools should be considered. The supplementary school is the more important in view of the Foundation's priorities. Building on curricular design work such as the new junior high school curricula of the NYBJE or curricular work at the Jerusalem Melton Center, new materials need to be developed, existing materials need to be reviewed and adapted and a distribution system implemented.
3. Audiocassettes for Eastern Europe. A specific program needs to be designed that responds to the complexity and heterogeneity of Eastern European countries, community types and groups. It would be highly likely that a pilot program would focus on one country, and a selection of age group and community type within that country.
4. A program of audiocassettes for teacher and principal training is an obvious candidate for Foundation priority. Very little currently exists. Clearly, such a strategy needs to be designed in concert with existing teacher training institutions. Supervised self-study, either on an inservice training or refresher course basis, would appear to be the priority rather than the training of new teachers, but there are probably opportunities to do the latter as well.

Computers

1. An international program for teacher and principal training is a top priority for the Foundation. Such a program, though primarily aimed at teachers and principals currently in the field, should be coordinated with existing teacher training institutions so that it can easily be extended to new teachers

coming into the field. Training should involve not only computer literacy in general ,but an exposure to the best of existing Jewish software.

2. In order not to waste scarce resources it is urgent that specific plans for computerization be drawn up with targets, timetables, costs and resources. The plan includes resources for training as well as for purchase of equipment and programs and for operation. This seemingly common sense need to plan is ignored more than it is met in almost every setting -- corporate, governmental, or nonprofit. Schools are certainly not exempt from this tendency. In even the largest Jewish communities, the resources for individual school planning do not exist, and a regional planning model is the only feasible course of action.

3. Some of the most complex investment choices relate to support for software development. While a wide variety of software needs exist, the following seem to be the highest priority for Foundation investment:

a) Authoring programs--Computer programs that are designed for adaptation by individual teachers are important for two reasons: the shortage of programming resources in most schools and the opportunity to involve teachers in the computer effort.

b) Funds to adapt existing general education software. Very often, the costly portion of software design has less to do with content than with graphics, sound and color. Such techniques can be adapted for Jewish content.

c) Funds to develop simulations in the area of Jewish history and culture, including Jewish life in various parts of the world and in Israel. There is relatively little software in this area compared with holidays, Hebrew language or Bible. Here too adaptation is preferred. For example, the new integrated World-Jewish History day school curricula could form the basis for adding a Jewish component to world history software designed for general education.

4. One of the ways to meet the needs for planning, training and software is the development of a network of regional computer resource centers. The Goldman program in Chicago could serve as a prototype or model for such centers. Substantial issues would have to be resolved regarding the number, location and support for such centers.

Video/Computers

The leading edge of the new technology involves interactive video --the combination of computer analytic capacity with the visual capacity of video. Combined with satellite transmission, the most isolated areas can be reached. In light of

the visual capacity of video. Combined with satellite transmission, the most isolated areas can be reached. In light of the Memorial Foundation's commitment to Jewish communities on the edge of survival, the development of a satellite-based Jewish learning system is the most exciting communication/information technology project. It is also likely to be the costliest. Not only does material have to be designed, but a hardware strategy needs to be developed. A new organization will probably be needed to carry out such a project. The opportunity to connect hundreds of thousands of relatively isolated Jews is literally unprecedented. Potential material is available but substantial work would need to be done to utilize the interactive advantage of systems like the rural video schools described in Chapter I. Jewish Media Service core program (29 tapes) and the Israeli Pillar of Fire, could provide a start. Heritage "outtakes" (footage not needed for the series itself), could be used to design new material, as could the Jewish Archive of Broadcasting.

* * * * *

The time for a concerted effort is now. While the pace of technological change will not slow, some key developments have settled. For example, the predominance of VCR's for home video delivery was not obvious even a very few years ago. The microcomputer has become firmly established as the computer system of choice in education. The field is still new enough to be shaped, but established enough so that the initial "fear of technology" has worn off.

The community is ready; the needs are great. Hopefully this Report will help the Memorial Foundation chart an effective course in this area. The promise of this new technology is enormous. A clear and focussed strategy can realize this promise to create a better educated Jewish people.

