
Cassette Exchange: A Comprehensive Audiotape Distribution System

A number of years ago, the language laboratories at Kent State University needed a comprehensive audio materials distribution system. The system sought would have to be such that any Kent State student would have access to a copy of any skills-practice lesson tape, either for use on campus or off campus.

The author describes the evolution, adoption, and operation of Cassette EXCHANGE, an effective and efficient system of audio materials distribution.

Background

Nearly 14 years ago in the language laboratories at Kent State University, employees spent many hours each day duplicating foreign language tapes for student use in the practice laboratories. Literally hundreds of tapes had to be erased and re-recorded each week.

The demands of additional paperwork, quality control, and shelving-reshelving requirements precluded providing a tape lending service. Students could, however, have copies of the lessons duplicated on their own tapes. Students who availed themselves of the duplication service often waited two to three days for their copies.

The Kent State tape listening facilities were all in one building—an area where, in addition to foreign languages, students also practiced shorthand and code. For various reasons, this building was open to students for only a limited number of hours each day.

Under the above-mentioned circumstances, it became obvious that Kent State needed a distribution system which could provide Kent

State students with copies of skills-practice lesson tapes on and off campus. Aware of the need, we began a careful examination of the problems involved in putting a tape distribution system into place.

Tape Distribution System Requirements

Any system capable of satisfying the need for skills-practice audiotapes of over 20,000 learners has to be **flexible**; it has to serve these learners at home, in the dormitory, in class, and in the learning laboratory. Furthermore, the system has to be **accommodating**, namely, it must make a multitude of different lesson tapes available; particularly in the case of language tapes, it must also permit the learner to exercise control over the nature of practice: The system must allow the learner to start, stop, fast forward, rewind, replay, and skip ahead at will whenever the learner wishes to do so.

After considerable deliberation and keeping in mind our particular setting, we concluded that we could meet the requirements by either centralized programming of lessons to all areas (remote access) or by centralized duplication and distribution of cassette tapes.

Centralized Programming of Lessons

A centralized programming system typically uses remote access systems to play programs to listeners at designated stations in other areas of a building or to other buildings. Banks of tape players (or recorders) play a program to any or all listeners who select a given program by means

of a dial or button panel. A switching apparatus (usually computer-controlled at today's larger institutions) makes the proper connections. Listeners receive the programs via direct wire connection.

To provide listeners with complete control of a program (all machine functions including voice recording) users must have at their disposal a separate, remotely controllable tape recorder. If 100 students, for example, wish to work with 100 different language lesson tapes simultaneously, somewhere there would have to be a bank of 100 tape recorders, one for each student to remotely control at will.

Centralized programming equipment is expensive to purchase, maintain, and replace. During power failures and switching system malfunctions, the entire system shuts down. Furthermore, because the overall system is complex, it is necessary to have full-time technical staff in place to service it and keep it functioning properly.

Centralized Duplication of Cassette Tapes

The other system considered involved the centralized duplication of cassette tapes and the method of their distribution to users. The heart of a centralized cassette duplication system is the high-speed duplicator. At Kent State we use the Telex duplicator. However, Sony, Pentagon, Recordex, and other manufacturers also make duplicators.

Although open-reel systems and duplicators exist, high speed duplication of cassettes is faster and cheaper, partly because the hardware and tape materials are less expensive in cassette format, and partly because cassettes and cassette duplicators are easier to handle. Furthermore, the cassette recorders (which many students already own) in homes, dorms, and cars, in effect, become part of the cassette system—at no additional cost to the school. All the school has to do is provide the tapes for use anywhere: Students can bring the tape they use at home and use it in the language laboratories as well, thus eliminating the need for a special set of tapes for the laboratory.

The Cassette Exchange System at Kent State

After a thorough comparison and much deliberation, we concluded that the cassette system offered more advantages at a fraction of the cost of the remote access system. (For a detailed comparison of costs, see the author's article entitled "Mass Distribution: Cassette or Dial Access?" in *Foreign Language Annals*, October, 1973).

The Cassette Exchange System Protocols

System Start-up. Deciding that we wanted to get "our" cassettes back from the students to whom we distributed them, we developed the following procedure: We recorded a large number of cassettes with the first lesson of a particular practice-skills program and sold one copy of the lesson to each student enrolled in its corresponding course. Thereafter, we would require each student to give us a cassette in exchange for any other practice-skills lesson tape. Because of this "we'll-exchange-one-of-our-cassettes-for-one-of-yours," we called the system "EXCHANGE."

Lost Cassettes. A student who lost a cassette would have to purchase another to begin the exchange system procedure again. However, since the student paid for the first cassette, and thereafter always "owned" the cassette he or she received in exchange, it really mattered very little if the student never returned the tape.

Cost of Initial Cassette. Students paid \$1.50 for their initial cassette. This covered the cost of a 90-minute cassette, labels, and cassette case. This price also guaranteed the student an exchange cassette in the event the returned cassette was broken.

Labelling Cassettes for Different Lessons. Having solved the basic problems associated with exchange of tapes, we were faced with the problem of labelling cassettes for all the different lessons. For instance, if we had 500 students

studying German, we need 500 copies of Lesson 1, followed by the availability of 500 copies of Lesson 2, etc. These totals would then have to be multiplied by the number of levels of each of five different languages all being offered simultaneously.

We decided that it would be too time-consuming to erase and re-label that many tapes each week, even though we could produce many copies with ease. We also felt that we could not afford to keep on hand the total number of pre-labelled tapes required for the entire semester.

One Label Fits All. Our solution to the labelling of cassettes was to use identical labels. The label merely identifies the cassette as one of our exchange system cassettes.

When a given lesson is duplicated onto a batch of blank cassettes, we place all the duplicates of that lesson into a box properly labelled with the name/number of the lesson. Thus, only the box identifies what lesson is on the tapes. When a student requests a lesson tape, he or she gives us a cassette and in turn receives the lesson requested: We simply go to the box which contains the lesson.

Now that all tapes have identical yet distinctive labels, they are labelled only once as they enter the EXCHANGE System. Since students have only one lesson tape at a time, and the recording announces the name and number of the lesson, there is no need to identify the lesson on the label.

Interchangeable Cassettes. All student tapes received in exchange are put into a common carton. We bulk erase these tapes and duplicate them again with other lessons. This week's Spanish tape might become next week's shorthand; this week's German tape might become next week's music tape.

Although there could be thousands of tapes "out there" in possession of students, students do not come in all at once to exchange their tapes. We are able to make the majority of our duplicates from the pool of exchange cassettes, however, occasionally new cassettes are added to the system when there are not enough cassettes

on hand to re-use. For students "running" ahead or behind, a few copies of both the previous and the next lessons are available.

Master Tapes. Only our master tapes (from which we make our copies) are labelled with individualized labels.

Storage. At the time we developed the EXCHANGE System, we designed our own cardboard drawers for storing cassettes on shelves. A local box manufacturer produced the drawers for us at a fraction of the cost of commercially available cassette storage systems (e.g., systems like the ones available from Luxor). Now, cardboard drawers suitable for cassette storage are readily available.

Quality Control. As previously mentioned, the EXCHANGE System does away with re-labelling and re-shelving of cassettes. Equally important, the system provides automatic quality control.

When we bulk erase and then re-record a returned cassette, we are certain that our whole program, and only our program, is on the tape. We also know that the cassette is not broken and functions properly. In short, the quality of the cassettes in this EXCHANGE System is as good as we make it.

Copyright Permission. The AV Tape Service obtains permission from all copyright owners to copy lesson tapes for the EXCHANGE System: Copies are provided for Kent State students only.

System Hardware. We chose a Telex cassette duplicator because, at the time, it was the most flexible and economically priced. We purchased two master units, one reel-to-cassette, and one cassette-to-cassette, together with three slave units—each of which makes three copies. This configuration allowed us to make nine copies of a one hour cassette in four minutes. The Tape Service currently uses other duplicators as well for stereo applications or single copy recordings.

Theoretically, the EXCHANGE System is effective with any size enrollment. Its efficiency becomes greater, however, as the student or user population increases. For example, our duplicator

often sits idle because it can duplicate nearly 1000 copies in just eight hours. This means that our student workers could handle the audio skills-practice needs of The Ohio State University almost as easily as our own. Nevertheless, the duplicator's large capacity is needed to handle sudden surges in demand for cassette copies. This happens occasionally.

In addition to the cassette duplicator, the EXCHANGE System requires a **bulk eraser, cassette rewinder, storage cabinets for masters, baskets for erased tapes, and drawers for the different lesson tapes.**

EXCHANGE System Advantages

The EXCHANGE System has advantages over both a centralized programming system and a cassette lending service.

Benefits to Users. Benefits to users include the following: quick service, personal lesson copy, use of cassette anywhere, no time limits on use, unlimited programs, no cassette "sign-out," and user control.

Benefits to Tape Service. Benefits to the tape service organization include the following: automatic quality control, quick transaction, minimal paperwork, suitable for any size enrollment, no re-labelling of tapes, no sorting or re-shelving of tapes, no fines, unlimited programming, and no additional lab tapes required.

EXCHANGE System Statistics

The following statistics for the six year period from 1977 to 1982 provide some telling insights about the EXCHANGE System at Kent State.

Of the 7,343 audio cassettes put into the system, 369 (5%) were broken (case or tape); 568 (8%) were on hand at the end of the period; 6,606

(87%) were not returned. On the actual 7,343 cassettes (which went through many recyclings) a total of 42,218 lessons were copied.

Although the purpose of the EXCHANGE System was to facilitate the distribution of audio materials rather than make a profit, there was a gross profit of \$4,778 (roughly the cost of the Telex duplicator) from the sale of cassettes during the six-year period.

The audio cassette EXCHANGE System is still in operation at Kent State University, currently operating out of our Audio-Visual Services Department. New subject areas are being added; even though several lessons are now duplicated on each tape, the annual number of duplications is over 13,000 and growing.

COMPUTER COROLLARY

An exchange system such as the one discussed in this article is also ideally suited to the distribution of skills-practice software on diskette for use with microcomputers. The advantages of diskette distribution over other currently used methods of distributing software (terminal to mainframe, downloading from mainframe, or networking micros with a hard disk) closely parallel the advantages of the EXCHANGE System.

Conclusion

The audio cassette EXCHANGE System developed at Kent State University has fulfilled all of its promises. It continues to serve the needs of the University community in an efficient and effective way.

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