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# A Study of the Effectiveness of the Introduction of Background Music in a Traditional Library

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A STUDY OF THE EFFECTIVENESS OF THE INTRODUCTION  
OF BACKGROUND MUSIC IN A TRADITIONAL LIBRARY

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A Thesis  
Presented to  
the Graduate Faculty  
Central Washington State College

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Education

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by  
Dean Ferrero  
July, 1969

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Library  
Central Washington  
State College  
Ellensburg, Washington

APPROVED FOR THE GRADUATE FACULTY

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## CHAPTER I

### THE PROBLEM AND DEFINITIONS OF TERMS USED

Educators generally agree that the library is an integral and indispensable part of the modern school. Elizabeth George Spears, 1959 and 1962 Newbery Medal winner, has stated that "libraries ought not to be something remote and occasional, but an everyday part of life, not to be approached with awe and reluctance, but with familiarity and friendliness" (47:2). National standards for school media programs published in 1969 state:

The media center is functional in design and inviting in appearance. It should have good lighting, acoustical treatment, and temperature and humidity control necessary for the comfort of its users and for the preservation of materials (2:39).

The traditional school library rarely meets these specifications. Often it is a converted classroom, crowded, forbidding, with few special features. Increasing activity poses the difficult problem of noise control.

#### I. THE PROBLEM

##### Statement of the Problem

It was the purpose of this study to determine whether or not the introduction of recorded, background music in a traditional library has a positive effect on

the attitude of students toward the library and toward the use of print materials.

### Importance of the Study

The current trend in school libraries is away from the traditional concept of a library that is primarily book oriented and toward a concept of the library as a Learning Resources Center, a logical extension of the traditional library. This change in concept may be realized by revolution or by evolution. Generally a limited budget dictates the latter. The problem then arises of deciding what to do with limited means.

William James said of education that "in the last analysis it consists in the organizing of RESOURCES in the human being, of powers of conduct which shall fit him to his social and physical world" (28:29). He further stated that "education, in short, cannot be better described than by calling it THE ORGANIZATION OF ACQUIRED HABITS OF CONDUCT AND TENDENCIES TO BEHAVIOR" (28:29). Proper organization of internal resources would seem to presuppose environmental conditions that would maximize the student's ability to organize and behave rationally.

John Dewey observed that "the problem is not to find a motive, but to find material of and conditions for its exercise. Any material that appeals to this

capacity has by that very fact motivating force. The end or object in its vital connection with the person's activities is a motive" (13:62). His concept of interest and effort in education has been explosive. This positive attitude, interest and effort, toward learning is a prerequisite for learning. Active participation in the process is essential. Thorndike said, "Learning is always an active process. It is never a passive absorption--a mere absorption" (49:84).

The traditional library was not designed to embrace such independent study and individual inquiry. A perusal of Lucile F. Fargo's The Library in the School, 6th Edition, the standard text in library administration classes during the 1950's, denotes approximately two and one-half pages to GRAPHIC MATERIALS, ART OBJECTS, ETC. and OTHER VISUAL MATERIALS AND SOUND DEVICES. She noted that "unlike books, most audio-visual aids cannot safely be left in the open but must be placed in proper containers and then stored in locked closets or cabinets especially constructed for the purpose" (17:294). And even more to our point is the philosophy reflected in this statement concerning circulation: "SLIDES AND STERIOPTICON VIEWS may be charged by box, the temporary slip bearing proper identification. RECORDS, FILMS, and

the like may also be entered on temporary slips. As a rule, circulation of pictures, slides, records, and films is limited to teachers, but exceptions may always be made" (17:324). Today the exceptions are the rule. As the library attempts to adjust to its changing role in education, environmental factors loom large as problems. Control of these factors can contribute to an atmosphere fostering improved efficiency and attitude.

Atmosphere is one controlable variable in the library. One component of this variable is sound. Proper control of sound does not mean absolute quiet. Although scientifically possible, this is not psychologically desirable. Silence can be disruptive and disturbing; it may build tensions that find release only in overt behavior or in verbalization. As the center of activity in the school, the library will not be quiet. Finding the noise level most conducive to learning is imperative.

The positive attitude of business toward the use of technology in improving efficiency and attitude is fact. Schools might consider this in relation to study habits. Background music may be introduced to mask disruptive sounds, and may be used as a tool to implement learning. Dr. David LaBerge stated that "music is

directly beneficial to concentration, that it inhibits chatter and prevents one's attention from turning to internal sources of irritation, such as tired muscles or eyes and other physical discomforts" (3:14).

It was the purpose of this study to demonstrate that innovation in the use of technology on a limited basis can lead to redirection by exercising a positive effect on attitude toward the library, the use of library materials, and technology itself.

#### Scope of the Study

This study was limited to the library of Ellensburg High School which had an enrollment of seven hundred fifty students in grades ten, eleven, and twelve. Ellensburg is a small college town situated in a rural county in central Washington. Forty percent of the high school students are bussed in to school.

This was an attitudinal study limited to the effects of the introduction of professionally prepared background music as reflected in the circulation of materials, discipline problems and the students' desire to work in the library.

The study was begun in October of 1968 and extended over a four week period, ending before Thanksgiving.

An assessment of the effects of the experiment on attitude was made by: (1) observation and evaluation of the behavior of the students by the experimenter, who was also full-time librarian during the school year of 1968-69; (2) a study of circulation figures for print materials throughout the year, and (3) a study of students' opinions as reflected in their responses to two questionnaires. The first questionnaire was circulated after music had played one week, the second after music had not played for one week.

## II. DEFINITION OF TERMS USED

### Traditional Library

A traditional library shall be defined as a library that contains and circulates print materials. Few or no audio-visual materials are provided and no special facilities are available for individual or small group study.

### Print Materials

Print materials shall be defined as books, pamphlets and periodicals.

### Learning Resources Center

A learning resources center shall be defined as the area housing print, auditory and visual materials,

equipment, texts and supplementary materials. An LRC had a reading room, electronic room and production studio, plus facilities for individual and small group study.

### Library

A library shall be understood to refer to the repository for carriers of knowledge. The word "library" has time honored meaning and is generally understood to be the traditional place where the carriers of knowledge are kept and used, regardless of how knowledge may be stored, or transmitted.

### Background Music

Background music shall be defined as music used to mask unavoidable noise.

CHAPTER II  
REVIEW OF THE LITERATURE

Things happen or do not happen in a school as a result of the school's philosophy of education. Today educators plan new schools and school libraries to accommodate a revolution in instruction. The school library program has been integrated with the instructional program which has been altered from a formally structured teaching situation to one more conducive to learning.

The following discussion will set a philosophical framework for the library as a setting for independent research and inquiry.

I. PHILOSOPHY OF EDUCATION AS IT RELATES TO THE  
LIBRARY AS A CENTER FOR INDEPENDENT  
RESEARCH AND INQUIRY

General philosophy coordinates the findings of the different sciences and educational philosophy interprets these findings as they relate to education. These interpretations demand value judgments in the selection of goals and policies. Kneller stated that:

The philosophy of education guides educational theory and practice in three ways: (1) it orders the findings of the disciplines relevant to education, including the findings of education itself, within a comprehensive view of man and the education that befits him; (2) it examines and recommends the ends and general means of the educational process; and (3) it clarifies and coordinates basic educational concepts . . . Like general philosophy, it is speculative, prescriptive, and critical or analytic (33:72).

American philosophy of education has been guided by a dedication to educate all citizens. Despite shifts in emphasis, this dedication has grown ever stronger.

Kilpatrick observed that

The philosophy of education as a matter of serious study is the determined effort to find out what education should CONSISTENTLY do in the face of CONTRADICTIONARY DEMANDS coming to it from the diverse, deeply rooted interests of life (32:451).

The consistency of educational practice in early America was a result of Puritan resolve. "There was to be no double standard. Schools were established to insure the good of the state, and in turn, the good of God" (33:9). Morality was the prime subject matter of the school, and a stern morality it was. Arduous labor and a painful existence on earth gave promise of eternal rewards in the Great Beyond. Lord Macaulay noted that "the Puritan hated bear-baiting, not because it gave pain to the bear, but because it gave pleasure to the spectators" (36:80). The impertinence of what was good for the

student was not considered, much less entertained. The Good Book was good and book enough.

Early in the nineteenth century, "school policy was tied to the aspirations and experiences of people dedicated to acquiring and managing free, small farms and the independent businesses that served the farm communities" (33:26). Our schools were still in private hands, the natural aristocracy. Jeffersonianism held that the liberal arts tradition was a screening process eliminating those without talents and virtue. The classics served this purpose. Strength of character was considered the inevitable result of hard mental labor.

By establishing the common schools Andrew Jackson gave the "unschooled, the non-religious and the uncultured a place in the sun" (33:19). The heavenly rewards for which the Puritan elect suffered a lifetime had been lowered to within the reach of many and translated into the American dream: material rewards. The Great Beyond of the Puritan era has become the American frontier. Horatio Alger guided ambitious, American pioneer boys through the wilderness. "The primitive environment of the frontier created no social philosophy other than the anarchic individualism of the jungle" (29:78).

After the Civil War the forces of technology and industrialization became stronger resulting not in a change of values, but resulting rather in a growing resentment against the inroads made on established values. Our economic system exploited many and much before a gradual shift in values developed. Horace Mann observed in 1848 that "education, then, beyond all other devices of human origin, is the great equalizer of the conditions of man--the balance wheel of the social machinery--it gives each man the independence and the means by which he can resist the selfishness of other men. It does better than to disarm the poor of their hostility toward the rich: it prevents being poor" (39:668-69). Although trends in education were toward more education for more people, it was not until the 1920's that Mann's proposals for compulsory education were enacted into law. Ralph Waldo Emerson described the general tone of the nineteenth century: "Things are in the saddle/And ride mankind" (50:339).

Changes were not reflected dramatically in education. Ralph Ellsworth has observed that "although there probably has never been a time since 1800 when all the public schools of the country followed one philosophy of education or one method of teaching, it would be safe to say that in the nineteenth century--or even in the

first quarter of the twentieth century, the public schools assumed that it was their major responsibility to teach the mastery of the principal cultural tools: reading, writing, and arithmetic--the three R's, as they were called" (16:5). Methods of teaching tied closely to the textbook did not require large libraries. Such methods resulted in students acquiring, not inquiring. "The school library was not a problem that commanded the attention of professors of education during the nineteenth century or the first third of the twentieth" (16:7).

Around the turn of the century, as America shifted from an economy based on agriculture to one based on industry, there arose questions and disputes about what to teach in American schools. Some educators believed that equality of education did not mean teaching all students the same things. But after much deliberation the National Education Association (NEA), led by William Torrey Harris, endorsed an emphasis on the academic role of the schools. This was a re-affirmation of a program dating back to the immediate post-Revolutionary War Period. The classics were basic. This program rejected the introduction of commercial and vocational courses into the high school, catering still to a limited group of young people presumed and prepared to be college

bound. And although high school enrollment grew at an ever accelerating rate during the first half of the twentieth century, colleges showed no sharp rise in enrollment until after World War II.

A break away from the NEA position was led by John Dewey. Influenced by the psychology of William James, Dewey followed the lead of Francis W. Parker who held that "education should not consist of efforts to discipline the mind within prescribed sets of learnings; the school should lead the child to use intelligence in solving problems that arise out of the difficulties met in moving from one set of social circumstances to another" (33:33). In this pragmatic approach, purpose preceded and followed learning. Dewey believed that education in a democracy should lead to the good life. He said that "children in school must be allowed freedom . . . to develop active qualities of initiative, independence, and resourcefulness" (14:304). To teach democracy meant to practice it. Dewey envisioned a utopian community established by people who have the courage to think independently and yet relate themselves to a group (33:89). Man, who previously was considered an instrument of God and the state, would exercise the power and intelligence to shape his own world. Society progressed only if it

reflected an ever-increasing proportion of creative, intelligent individuals. Dewey posed this still unanswered question: "Can a material, industrial civilization be converted into a distinctive agency for liberating the minds and refining the emotions of all who take part in it" (15:124)?

Change in American life in the twentieth century has been so rapid and persistent that it is cliché to cite change as the only constant, uncertainty as the only certainty.

In 1930 John Burdon Sanderson Haldane, the noted scientist, wrote on this subject: "Today the externals of life in civilized communities differ more than those of 1830 than did the conditions of 1830 from those at the time of Noah's flood" (23:474).

Earlier Henry Adams said in discussing the changes he had seen since his boyhood: "In essentials like religions, ethics, philosophy; in history, literature, art; in the concepts of all science, except perhaps mathematics, the American boy of 1854 stood nearer to the year one than to the year 1900" (31:60).

From a comparison of the statements of Haldane and Adams, one may deduce that change itself seems to be changing, growing ever faster. It is a pervading factor

in modern life. The thread of consistency in American educational philosophy throughout these changes has been woven of two strands: (1) a growing concern with the needs of the individual student and (2) a growing emphasis on the concept of education as a pleasant, not painful process.

## II. ENVIRONMENTAL FACTORS THAT CONTRIBUTE TO AN ATMOSPHERE CONDUCTIVE TO INDEPENDENT RESEARCH AND INQUIRY

America has changed from a nation of producers to a nation of services and consumers, from a Protestant Ethic to a Social Ethic.

While on the technological level these changes seem to represent a richer, better world, on the social level the effect on the individual is of disintegration of the traditional structures and strictures that in the past have served to support and guide him in his thinking, feeling, and behavior--the central forces at work in contemporary American society--industrialization, urbanization, and bureaucratization--all tend toward standardization and depersonalization of our lives. The agents of these forces--mass production, mass marketing, mass communication, mass education, and so on--all lead us rapidly toward the evolving mass society. As the nation as a whole becomes less diverse, each individual's experience is of a greater varieties of worlds and ways, confronting him with more choices but many fewer reasons, codes, and norms to guide him to any particular choice. Against the tendencies toward standardization stand such forces of discrimination as religion, race, and class--all aspects of a social order that is in the process of disintegration (25:17).

How does our massive educational system attempt to meet the needs of today's alienated individuals? "Important characteristics of current teaching methods are . . . individual work with children and extensive use of a wide variety of materials" (10:98). Both have implemented drastic change in the school libraries. From a minor role early in this century, the library has been elevated to center stage. A major shift occurred when the 1960 American Association of School Librarians' standards were published, Educational Facilities Laboratories, Inc., (funded by the Ford Foundation) entered the field of school library planning, and world events forced schools to take a global approach to education.

J. Lloyd Trump advised in 1962 that the libraries should move in the mainstream of education. He said: "Today's libraries and librarians are too much on the fringes of education" (38:6). That many educators have agreed with Trump was supported by Richard Darling's statement in 1965: "School library programs are changing rapidly to support these new methods in teaching and learning, and to accommodate newer educational media . . . what has happened is that the school library program has been integrated with the instructional program, and at best, has become indistinguishable from it" (10:98).

More recently Marie Grieco said that "during the last few years of ferment . . . developments converge in a conceptual hub and hubbub which places the library media program at the center of the educational complex . . . as a total environment" (21:53).

Today school buildings and programs are being built around the library. An instructional program that uses the textbook as merely a point of departure, that has shifted emphasis from instruction to inquiry, depends largely for its success upon having available for individual use adequate materials and a controlled environment for independent research.

Early in this century a school library with one or two thousand books could meet the demands of most school programs. The student who listened in class and studied his text could meet his academic responsibilities, if not his individual learning needs. These needs are now of primary concern to educators.

In 1932 Hilda Taba wrote that "it is falacious to expect that materials of learning are really uniform for all learners; every educant has a unique course of past experience, and to every one of them the materials must vary accordingly" (48:160). Today's high school student faces problems of ever increasing number and complexity;

he is working at the college level of the past. The scope of libraries has had to be extended to house materials by and about all the peoples of the world and also information needed to meet changes in American society that have resulted from the advances of technology. Ralph Ellsworth, in The School Library, has stated that a secondary school library needs a minimum of thirty thousand volumes in cities where other good libraries are available to students, and fifty thousand in cities where other good libraries do not exist (16:92).

However, "Merely stocking schools with materials is not enough. There must also be arrangements that make these materials easily accessible to students and teachers and that assure their optimum use" (1:4). Optimum student use of materials can only be realized by the joint efforts of student, teacher, and librarian. Taba has described environment as a unity of meaningful objects, events, and relations (48:160). The atmosphere and environment of the library should be so arranged as to encourage optimum use of materials.

Jerome Bruner noted that "as William James put it decades ago, even our instinctive behavior occurs only once, thereafter being modified by experience" (7:113). He further observed that "with a half century's perspective

on the discoveries of Pavlov, we know that man not only is conditioned by his environment, but may be so conditioned even against his will" (7:113). Dr. Bruner declared that "the will to learn becomes a 'problem' only when under specialized circumstances like those of a school where a curriculum is set, students confined, and a path fixed. The problem exists not so much in learning itself, but in the fact that what the school imposes often fails to enlist the natural energies that sustain spontaneous learning" (7:127). Robert Mager suggested that "under the appropriate conditions students will work longer and harder" (37:99). He advised: "Don't confuse work with unpleasantness" (37:43). Marshall McLuhan has agreed with this attitude; he said, "It's misleading to suppose there's any basic difference between education and entertainment. This distinction merely relieves people of the responsibility of looking into the matter . . . however, it's always been true that whatever pleases teaches more effectively" (41). Albert Einstein stated that "it is a very grave mistake to think that enjoyment of seeing and searching can be promoted by means of coercion and a sense of duty" (34:233).

Jack J. Delaney has cited one survey of what students considered important in a school library which

found that they valued most a friendly, pleasant, informal atmosphere (11:87). The establishment of such an environment should be given special attention if we wish to encourage students to spend an ever increasing amount of time there in independent inquiry.

### III. ACOUSTICAL CONTROL AS A FACTOR IN LEARNING

The establishment in a library of physical facilities that keep at a minimum those environmental factors that place handicaps on the student has become practical. The purpose has been to permit the student to stay in the library over a sustained period without reducing his efficiency or productivity. Along with temperature control and proper lighting, acoustical control has been a factor.

The rising noise level of much modern environment has resulted in an increasing concern with noise control problems. Few places in America have been kept impervious to sound. In some schools small, isolated and insulated areas have been treated for silence, but in most schools most areas are noisy.

"When one becomes realistic about the business which is conducted in a modern library and then plots a course which takes these factors into account, we can

then begin to teach children to function in a 'real' situation which has implications for transfer" (24:33). In the library the noise level should be neither that of a bus depot nor that of a funeral home, but of an active scientific laboratory where important problems are being solved. Zoning of areas and layout of equipment can help keep noise to an acceptable level, and special floor treatment has been highly recommended. These controls, however, are generally implemented by the architect and are "built-in" to the building.

When one inherits a traditional library in which none of these controls exists, modification can often be made only upon the students' attitude toward certain and inevitable noises that cannot be substantially reduced. In a library alive with activity, a healthy attitude toward noise would go far toward minimizing the negative effects of distracting and disrupting noises. Helfrich has stated that "students can be taught to study even with distractions" (24:33). In the library at Ellensburg High School the supply of distractions was unlimited; constructive means of minimizing their effects was severely limited. The introduction of music there was an attempt not only to mask unavoidable noise, but also to develop a more positive attitude toward the use of the facilities and materials.

Margaret Hayes Grazier has observed that "there is some evidence to suggest that experimentation involving only a fraction of the student body influences greater use of materials throughout the entire school. One suburban high school library found, for example, that in the first year of an experimental program with less than a tenth of the student body that circulation of books and non-print media to students and faculty not in the program increased some eleven and one third percent. Even a little innovation seems to stir up things in the entire school" (20:4).

Since students at EHS generally come to the library of their own volition, one might assume that this lack of compulsion helped to set the stage for a successful library experience, and that conditions within the library could make or break this success. George Leonard has said that we are rapidly becoming capable of controlling all environment we can perceive (34:51). Establishment of environment encouraging learning rather than resistance to learning is of prime importance to educators.

#### IV. CHAPTER SUMMARY

A review of developments in American education from Colonial times to the present has revealed changes

both in quantity of students and quality of methods and programs. Ever increasing numbers of students have been educated and better educated. Traditional methods of instruction have been altered; newer methods have involved the student more actively in learning to meet his individual needs and interests. In the learning process, the initiative has shifted from the teacher to the student. This shift has tended to accentuate the positive, pleasant aspects of learning.

The school library has evolved and changed from a repository of books only to an active learning laboratory housing multi-media employed by the student. To encourage maximum use of materials the library must provide an atmosphere conducive to prolonged inquiry. One component of a pleasant congenial atmosphere is acoustics. Specially programmed background music has demonstrated ability to relax tension without impairing efficiency. Employment of such modern technology to serve the dignity of man has become a challenge to educators.

CHAPTER III  
REPORT ON THE PROCEDURES USED TO INTRODUCE  
MUSIC IN THE LIBRARY

I. RATIONALE FOR INTRODUCTION OF MUSIC

Music, thought of traditionally as an art form, has been assigned many roles in modern life and has performed them all well. Although the effects that have been achieved with music appear unlimited, limits may be imposed. Hundreds of years ago the Greek surgeon Hippocrates used music as a therapeutic help in his clinic (51:148). An earlier reference to music therapy is in the Bible I Samuel 16:23: "And it came to pass, when the EVIL spirit from God was upon Saul, that David took a harp and played with his hand: so Saul was refreshed, and was well and the evil spirit departed from him" (27:339). In 1960 the American Medical Association acknowledged music as a bona fide tranquilizer (8:63). Recently new methods of stopping pain in hi-fidelity music sounds, called audio-analgesia, have been used by surgeons and dentists (22:30). Music therapy has been widely applied and the positive effects accepted.

Music has also been employed in industry as a positive force. The science of ergonomics, defined by the International Labour Review as "using engineered

methods to humanize work areas" has been concerned with air conditioning, lighting, and functional furniture, but none has manipulated people as readily as music (35:41).

Musical ergonomics were successfully employed at least as far back as Ivan Petrovich Pavlov's experiments on the conditioned reflex. Industry with Muzak calling the tune has applied this knowledge. Twenty-two years ago, a review of all research led William Robb to conclude that music was an efficient industrial tool. He said, "It seems likely that soon music will be considered as essential to the efficient operation of a factory as proper lighting, ventilation, or temperature control" (45:82). More recent investigations confirmed Robb's predictions. In 1966 Dr. Edward Podolsky stated that "the ability of properly prepared and programmed music to relax people and reduce boredom, monotony and fatigue, while keeping efficiency high, has been demonstrated in nearly every type of industrial and office work" (44:41). He cited surveys made to evaluate the benefits of music on people at work from which "it was learned that the great majority of workers felt that music was very useful in relieving boredom, monotony and easing nervous tension" (44:41).

Psychological studies employing more strict controls have generally agreed with these surveys. The

studies have revealed that in work situations where background music was introduced efficiency increased in simple, repetitive jobs, remained the same in more complex situations, and every study showed that employees' attitudes were improved (43:496). Kirkpatrick in a study reported "that music hindered work demanding mental concentration" (35:42). This dissident opinion has not affected industry's consumption of music. Muzak, begun in 1934, reported an income in 1963 of seventeen million dollars. By 1950 it had become the world's largest user of telephone line network. "Musak has been heard--if not listened to--by some sixty million people in twenty countries and countless cities ranging alphabetically from Aarhus (Denmark) to Zurich" (35:39).

While mental concentration might not be considered a prime factor in the factory, it has been so considered in the school. That not everyone in education has agreed with Kirkpatrick's findings was reflected in this statement from Dr. David LaBerge, psychology professor at the University of Minnesota, who said that "there is relatively high agreement among investigators that a changing sensory environment seems essential for productive human work and even for normal brain functioning in the case of highly restricted sensory environments" (3:14). More

to our point, and more easily understood, he stated that "music is directly beneficial to concentration, that it inhibits chatter and prevents one's attention from turning to internal sources of irritation, such as tired muscles or eyes and other physical discomforts" (3:14). Marshall McLuhan has expressed the opinion that radio will serve as background-sound or as noise-level control, as when the teenager employs it as a means of privacy. He stated, "The mystic screen of sound with which they are invested by their radios provides the privacy for their homework, and immunity from parental behest" (41:303).

Since attitude toward the library and materials was what we wished to improve, and since silence was an impossibility, helpful or not, the introduction of background music was considered.

The library at Ellensburg High School had traditionally maintained only a print collection for students' use. The small record collection had been for teacher use only, and no slides, filmstrips or films were housed in the library.

During the summer of 1968 a small audio-visual center was built inside the library. Equipment installed consisted of two of each of the following: record players, tape decks, film strip projectors and sound film

strip projectors. Materials for use with this equipment were severely limited and teacher-directed use was small, virtually non-existent.

James W. Brown has marveled that educators have been so slow to follow the lead of business in employing technology, noting that output per man-hour in manufacturing has been doubled since 1930, and probably doubled between 1890 and 1930. He stated that it would be extraordinarily difficult to prove that there has been any very great increases in output per man-hour in the schools since 1890. One explanation for this, according to Brown, could be that in 1890 business invested seventy-five percent of their budget on buildings, twenty-five percent on machinery. In 1960 these percentages had been reversed. Schools in 1890 invested ninety percent of their budget on buildings and ten percent on equipment. In 1960 the figures seemed to be roughly the same (4:157,158).

Edgar Dale has expressed regret concerning this reluctant attitude of educators to use technology; he stated that "some persons discuss instructional technology as though there were a real choice whether we should introduce it in the schools. There is no such choice. Our only choice is whether we use educational technology wisely and planfully, or whether we use it grudgingly, ineptly, planlessly" (9:1).

A positive approach to use might be reached by remembering that "the question is not what the machine can do for you, but what you can do with the machine" (18:71). Jerome Bruner has lamented that "what is so shockingly clear is that the distance that stretches between what it is that we presently DO and what pilot projects have shown we COULD DO is vast" (5:13).

The experiment was begun at Ellensburg High School in October of 1968 with the hope that background music might serve the double purpose of exercising a desired effect on attitude toward the library and materials and also of exercising a positive effect on attitude toward experimentation with technology.

## II. PROCEDURES IN SECURING AND INSTALLING EQUIPMENT

The initial step was to ask the principal's permission to introduce music in the library. This was granted along with a hardy endorsement of the project. Next, the Background Music Systems of the Minnesota Mining and Manufacturing Company (3-M) was contacted and arrangements were made for a free loan of their equipment. This was an important consideration since there were no funds available to finance experimental projects. Borrowed

equipment included tapes, sound system and speakers, plus the free services of one of the company's technicians who delivered and installed the machinery. The tapes contained music selections specially designed to function as background music, and those tapes used in the experiment were designed as dampening music as contrasted with motivating music that might be employed in a typing laboratory to encourage speed and activity. Tapes used were specially designed to mask disruptive noises; if heard, the music had not functioned properly. Each tape played 700 different selections before repeating.

Controls were placed at the check-out counter in the front of the room. The on, off, tone and volume controls were operated manually, although the machine could be set to play automatically at certain intervals of time. One speaker was placed in the middle of the room and one at the back. In a permanent installation speakers would be arranged to insure uniform distribution of sound throughout the room, but dead spots were kept at a minimum with equipment available. The small size of the room presented no problems with uneven sound that could exercise a serious, adverse effect on the outcome. Volume was occasionally adjusted when the amount of activity in the room varied greatly.

### III. TIME SCHEDULE OF EXPERIMENT

Since this was the librarian's first year in the school, the experiment was begun several weeks after the beginning of the school year. The assumption was made that students would then be somewhat accustomed to new faces and routines of the new year. The week of October 15th was selected as the first week; this allowed the four-week experiment to be concluded before the Thanksgiving holidays.

Beginning on October 14, music was played for two weeks and at the beginning of the second week students' reactions were solicited by the first of two questionnaires. (See Appendix A) The third week, no music was played and at the beginning of the fourth week, questionnaire number two was circulated. (See Appendix B)

An attempt was made to elicit only one response per student on each of the two questionnaires because many students were regular library users and the same response every time might be expected from them if they were allowed several responses; this could easily prejudice the findings. This accounts for the response being largest on Monday, decreasing daily. By Wednesday few students were in the library for the first time during the current week.

TABLE I  
CALENDAR OF EVENTS

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Music played on dates below. Questionnaire circulated on dates in parentheses.

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<u>October</u>				
Monday	Tuesday	Wednesday	Thursday	Friday
14	15	16	17	no school
(21)	(22)	(23)	24	25

---

Number of Questionnaires answered daily

121                      26                      31

Total Responses to Questionnaire No. 1 = 178

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Music not played on dates below. Questionnaire No. 2 run on dates with parentheses.

---

<u>October and November</u>				
Monday	Tuesday	Wednesday	Thursday	Friday
28	29	30	31	1
(4)	(5)	(6)		

---

Number of Questionnaires answered daily

87                      30                      5

Total Responses to Questionnaire No. 2 = 122

TOTAL RESPONSES:    300

## IV. CIRCULATION OF QUESTIONNAIRES

The procedures used in soliciting student responses were: (1) to ask each student at the beginning of each period when large numbers of students usually came into the library if he had already responded to the questionnaire; (2) to give a questionnaire only to the student who said that he had not previously responded to it; (3) to ask the student to fill out the questionnaire and either bring it to the desk or leave it in a box on the check-out counter when he left the library; (4) to check throughout the period for new arrivals in the library and to solicit their responses in the manner indicated above.

After the music had played in the library for one week, questionnaire number one was circulated on October 21, 22, and 23. The student was asked if he had come to the library of his own volition or been sent, if he liked the music in the library and why. He was not asked to indicate age, sex, name or class on either of the two questionnaires.

Circulation of questionnaire number two was begun on November 4th, after the music had been turned off for one week. This asked the student if he had come to the library of his own volition or been sent, if he wished the music returned to the library and why. Early on

Wednesday, November 6th, the circulation of questionnaires was terminated. There was a noticeable resentment building up against the interruption or inconvenience caused by the experiment or possibly against the withdrawal of the music. It was returned that day. This concluded the experiment.

CHAPTER IV  
RESULTS OF THE EXPERIMENT

I. NUMERICAL RESULTS OF THE QUESTIONNAIRES

A tabulation of the numerical results of questionnaire number one revealed that one hundred and seventy eight students responded. (See Table II) Seventy-four percent of these liked the music, twenty-three percent disliked the music and three percent were undecided. All of the students answering chose to come to the library except for eight and one half percent.

TABLE II  
RESULTS OF QUESTIONNAIRE NO. 1

Number of Students Who:							
	Came to Library by Choice	Were Sent to Library	Total	Liked Music	Disliked Music	Were Undecided	Total
Monday Oct. 21	110	11	121	93	24	4	121
Tuesday Oct. 22	23	3	26	18	7	1	26
Wednesday Oct. 23	30	1	31	21	9	1	31
TOTALS	163	15	178	132	40	6	178

A tabulation of the numerical results of questionnaire number two revealed that one hundred and twenty-two students responded. (See Table III) Eighty percent of these wanted the music returned to the library, eighteen percent did not want the music returned and two percent were undecided. All of the students chose to come to the library except for nine percent.

TABLE III  
RESULTS OF QUESTIONNAIRE NO. 2

Number of Students Who:							
	Came to Library by Choice	Were Sent to Library	Total	Liked Music	Disliked Music	Were Undecided	Total
Monday Nov. 4	80	7	87	76	10	1	87
Tuesday Nov. 5	28	2	30	18	11	1	30
Wednesday Nov. 6	4	1	5	4	1	0	5
TOTALS	112	10	122	98	22	2	122

Seventy-seven percent of all responses were in favor of background music in the library, twenty percent were opposed and almost three percent were undecided. (See Table IV)

TABLE IV

## TOTALS OF QUESTIONNAIRE NO. 1 AND QUESTIONNAIRE NO. 2

Number of Students Who:							
	Came to Library by Choice	Were Sent to Library	Total	Liked Music	Disliked Music	Were Undecided	Total
Totals of No. 1	163	15	178	132	40	6	178
Totals of No. 2	112	10	122	98	22	2	122
GRAND TOTALS	275	25	300	230	62	8	300

## II. DESCRIPTIVE RESULTS OF QUESTIONNAIRES

Eight students were undecided about whether or not they liked music in the library and four of these did not explain why. Of the remaining two hundred and ninety-two respondents, ninety-nine and four tenth percent gave explanations for their answers. The general tone of the explanations was one of thoughtful and serious consideration. Few remarks were curt or rude.

The descriptive word used most often in praise of the music was "relaxing." Thirty-seven percent of the positive responses included this factor in the explanation of these reactions. (See Table V) Typical examples of these are given:

"The music helps me to relax and be comfortable. When I get my mind off outside pressures I can study better."

"It helps create a relaxed atmosphere and it also covers the din in the library."

"It's relaxing or pacifying. The music just sounds good."

Other adjectives used repeatedly in praise of the music in descending order of number of times used were: pleasant, soothing, comforting, cool, calm, and friendly. (See Table V)

TABLE V  
REASONS GIVEN MOST OFTEN FOR LIKING MUSIC

Description	Number of Times Used
Relaxing	85
Easier to study	24
I like it	17
Covers up noise	15
Pleasant	12
Soothing	6
Comforting	3
Cool	3
Calm	3
Friendly	2

Ten and one half percent of the students explained that the music made it easier for them to study. Seven percent simply said, "I like it" and six percent thought that the music was a pleasant mask of other sounds.

Some interesting positive responses not easily categorized are included.

"Brings something down around your shoulders, a sort of security."

"If a place is too quiet, the quiet itself is distraction. The music is calming and often so helpful. Once you begin to concentrate, you don't hear it anyway."

"I usually have some kind of music when I study and its easier to study that way."

"I liked it. It helped you study. Most kids I talked to liked it. Only teachers opposed it."

"Music sooths the soul and calms the jittery nerves. America wants music!"

"I like this music any time of day. Anybody who doesn't is a crack-pot!"

The reason given most often by students who did not like the music concerned the quality of the music itself. Thirty-eight percent explained that it was too old-fashioned or the wrong type. Nineteen percent of the negative responses found the music distracting. Six percent thought the music was too loud and six percent felt that it hindered concentration. (See Table VI)

Typical of the negative responses were these:

"Doesn't appeal."

"Because it's dopie music."

"It is not modern music."

"It's too cultural for me."

"Wrong kind, play some hill billy music."

TABLE VI  
REASONS GIVEN MOST OFTEN FOR DISLIKING MUSIC

Description	Number of Times Given
Old-fashioned music	17
Distracting	12
Poor quality music	7
Music too loud	4
Hinders concentration	4

Some of the negative responses were carefully considered. An example is this response: "It causes too loose an atmosphere in the library. Kids talk softly, then it snowballs into a dull roar--very hard to concentrate. It's kids talking I don't like--not music."

In general the negative responses were more passionate than the positive ones. The emotions ran the gamut from contempt: "What music?" to complete disgust: "Too damn loud. Too rotten music. I hate music. Go to hell music lovers."

While only half of the undecided students decided why they were undecided, many gave careful thought to it. To illustrate: "I can't really say yes or not. It keeps the library from being tensely quiet, but it is

more likely to make people talk because talking won't be noticed so much. If it is played, I like it quiet and not well known, because a well known tune can be quite distracting."

### III. CIRCULATION RESULTS

A comparison of monthly totals of circulation figures of print materials for 1968-69 revealed that the month of October, during which most of the experiment was conducted, had the highest total of the year. (See Table VII)

TABLE VII  
MONTHLY CIRCULATION TOTALS FOR 1968-69

Month	Circulation
September	708
October	799
November	704
December	444
January	497
February	533
March	547
April	437
May	265

No attempt is made to show the correlation between these two factors; too many uncontrollable variables are involved in circulation figures. Students may come to the library and check out materials because they decide they want to, because they are told to do so by teachers or parents, because they want an excuse to leave the classroom, or because they want to stay in the library and must convey the impression that they are conducting legitimate school business there. These are just a few of the many reasons that might impel students to check out materials. Also to be considered is the inability of the circulation figures to indicate how efficiently the materials were used, or if, in fact, they were used at all.

A scrutiny of daily circulation figures for the weeks of the experiment revealed no pattern indicating an influence exercised either by the presence of the music or by the lack of it. (See Table VIII)

TABLE VIII  
DAILY CIRCULATION FIGURES OF PRINT  
MATERIALS DURING EXPERIMENT

Date		Circulation	Environment
Oct. 14th	Monday	41	Music played
Oct. 15th	Tuesday	24	Music played
Oct. 16th	Wednesday	49	Music played
Oct. 17th	Thursday	29	Music played
Oct. 18th	Friday	holiday	
Oct. 21st	Monday	34	Music played
Oct. 22nd.	Tuesday	33	Music played
Oct. 23rd.	Wednesday	29	Music played
Oct. 24th.	Thursday	39	Music played
Oct. 25th.	Friday	39	Music played
Oct. 28th.	Monday	30	Music not played
Oct. 29th.	Tuesday	34	Music not played
Oct. 30th.	Wednesday	36	Music not played
Oct. 31st.	Thursday	48	Music not played
Nov. 1st.	Friday	46	Music not played
Nov. 4th.	Monday	33	Music not played
Nov. 5th.	Tuesday	25	Music not played
Nov. 6th.	Wednesday	25	Music played in the afternoon
Nov. 7th.	Thursday	30	Music played
Nov. 8th.	Friday	56	Music played

#### IV. RELATED RESULTS

No attempt was made to tabulate or record the number of discipline problems in the library, their increase or decrease, as a result of the experiment. Some conclusions, however, have been drawn from constant observation of occurrences by the experimenter, who was also full-time librarian.

The most obvious result was the feeling that the atmosphere was more friendly, relaxed and tranquil. This positive result, although subjective in nature, is note-worthy. Rapport with the students seemed to be easier to establish and maintain. Any problems with discipline could be dealt with in an expeditious and unemotional manner. One student explained why he liked the music by saying that "Music seuthes the savage beasts." Perhaps it did, and included the librarian.

Compared to other changes in the library, the introduction of the music tended to impress the students with the idea that learning need not be a painful process. The presence of music was indication that care had been taken to make the room pleasant and inviting to them. Also, when a congenial atmosphere had been established before students entered, maintenance could then be squarely placed in their hands. The responsibility for the continuation of pleasant surroundings in which to work rested with the students.

No attempt was ever made by the experimenter to "sell" the music to the students. After the questionnaires revealed that many library users liked the music and wanted it played in the library, this information was reported to the principal. He said that he felt funds would be

found to purchase the equipment. During the experiment, both the principal and the superintendent had expressed their pleasure with the music in the library.

The equipment had been in use in the library for almost three months when a salesman from the 3-M Company came in January to discuss results of the experiment and the possibility of the school purchasing the equipment. After a brief discussion in the library regarding the results, the salesman went to the principal's office to discuss the sale. The experimenter took no part in any further discussions or negotiations. Knowledge of all later events has come from discussions with the Vice-Principal, Mr. Kent Matheson, from a reading of the Associated Student Body (ASB) minutes of their meetings, and from conversations with students and staff.

In the principal's office the decision was made to present the question of whether or not to make the purchase with student body funds to the ASB officers. The minutes of their January 8, 1969 meeting read in part:

"Item 3. Mr. Matheson talked about the sound system in the library and whether we want it or not. It would cost \$537.50. Three ways to pay for it. (1) lump sum (2) 90 day term (3) three year term. Different tapes can be purchased if wanted. The idea should be taken to Roll Rooms. A slight suggestion was made to have this as Senior gift. No further discussion was made" (46).

Minutes of the subsequent meeting on January 15, 1969 read in part:

"Item 4: We discussed the Sound System for the library. Voting took place in home rooms. Eight rooms voted negatively. Nineteen positive. No further discussion follows" (46).

No further mention is made of the matter in the minutes for the year.

The indication in the minutes is that the matter was decided and that the equipment was to be purchased. Such, however, was not to be the case. Voting had not taken place in home rooms as minutes would indicate, only representatives had voted. The Executive Council of ASB subsequently decided that, because of the large amount of money involved, representatives should take the matter to home rooms, it would be re-explained and a vote taken. After this was done, the majority vote was negative. This vote may have been against the music, it may have been against the manner in which the problem had been handled, and it may have been the result of poor communication. Some students stated later that since they didn't know what the vote was for, they voted against it. Others stated that they understood approval for purchase of the equipment for the library had already been made and this was a vote for something else. That considerable misunderstanding existed was apparent.

Whatever the cause may have been, the negative vote decided that the equipment was to be taken back by the company. To the experimenter's knowledge no other means of purchase were explored. Many students expressed surprise and disappointment when both the equipment and the music disappeared.

When informed that the student body had voted against the purchase, the thought that occurred first to the experimenter was that the large percentage of students who had answered the questionnaires affirmatively, in fact, represented but a small percentage of the entire student body. Consequently, the negative vote against purchase represented the larger voice of the many non-users of the library. When investigation of events revealed that two votes had been taken, nothing was clarified. Some light, however, was shed on the fact that student government at the high school level has some problems. Possibly decisions of this nature are not always best resolved by the student vote.

When the music was no longer being played throughout the library, many students brought records from home and listened to them with head-sets while studying. Others used the few music tapes available. Some music was still played in the library.

In a recent conversation with Mr. Matheson, newly appointed principal, he stated that he felt a vote on the issue in the fall of the 1969-70 school year would result in an affirmative decision to purchase the equipment. This possibility will be pursued.

That the experiment may have had a positive effect on the students' attitude toward the library and toward the use of library materials was most dramatically spotlighted by two events that occurred long after the music was removed. First, the entire student body voted an annual amount of \$500.00 from their ASB fund put at the disposal of the librarian for purchase of print materials of immediate need throughout the year. Second, the Senior Class of 1968-69 gave the library the balance in their account, about \$350.00, to be used for the purchase of comfortable chairs for the reading section of the library. These two spontaneous actions may have had their well-spring in the earlier experiment, and may have been a result of it.

CHAPTER V  
SUMMARY AND RECOMMENDATIONS

I. SUMMARY

The experiment at Ellensburg High School yielded much valuable information about the library users in particular and about the student body in general. Most definitely related to the introduction of background music in the library was the fact, arrived at through the circulation of two questionnaires, that seventy-seven percent of the three hundred respondents liked and wanted music in the library and that twenty percent did not. Three percent were undecided.

Less significant was the fact that circulation figures for print materials during the month of the experiment were the highest for the school year. This fact reveals little about the relationship between the figures and the music. But despite evidence which indicates that it is not precisely evident what circulation figures tell, they do reveal something and should not be ignored. They reveal that they might have been the result of the efficacy of music in the library or they might have been the result of many other extraneous factors that could not be measured or controlled in this experiment.

Most subjective was the formulated opinion that discipline problems in the library could be more easily dealt with as a result of the introduction of background music. The pleasant and relaxing effect of the music appeared to result in an easing of tensions and tempers. The establishment of rapport between the librarian and the students seemed easier.

The most disappointing result of the experiment was the student body vote which resulted in the removal of the equipment. Disappointment is expressed not simply because of its negative nature, but also because of the fact that extenuating circumstances surrounding the vote rendered its meaning ambiguous. From this ambiguity, assumptions could not be made solely in regard to the experiment.

The most interesting result to the experimenter was the information gathered from the questionnaires in the explanations students gave of their preferences. In general, their sincerity and seriousness was striking and heart-warming. The only possible conclusion from a close study of these communications was that students are definitely interested in what goes on in their library. They furnished valuable information regarding what they do want: (1) they want talking kept to a minimum, (2) they want modern music played, and (3) they do NOT want to be

bothered for their opinion on the same subject a second time. These, and many others, seemed reasonable and intelligent requests.

A significant point revealed by the questionnaires was that ninety-two percent of the respondents chose to come to the library. This may account for the quality of concern evident in the explanations. These students had a vested interest in environmental conditions in the library. Another possible explanation of the surprising interest of the students is that the experimenter may have been expecting a flippancy that most students did not bring to the situation. The completed questionnaires are evidence that students want to be consulted and that the resultant information from such consultation provides valuable guidelines for cooperative planning. To ignore such assistance would seem ill-advised and improper.

## II. RECOMMENDATIONS

Some suggestions for further study implied by the results of this experiment are:

1. A survey of why students come to the library, of how they actually spend their time while in the library, and if they accomplish wholly, or in part, what they set out to do.

2. An analysis of circulation figures that might determine:
  - a. whether the material checked out was what the student wanted, or whether a substitution was made.
  - b. why material was checked out and if for a particular class, which one.
  - c. whether the material was used, useful or useless.
3. A study of the results of introducing music in certain areas of the library that had been zoned for different activities.
4. An analysis of a more detailed questionnaire to determine whether grade, age and/or sex played a significant part in student attitude toward background music in the library.
5. A study to see whether or not the type of work the student was involved in might have influenced whether or not he liked background music.
6. A study to determine as scientifically as possible whether or not attitude toward the library did change as a result of the music.
7. A study of the effectiveness of having background music in the classroom when desired.
8. A study of the introduction of popular music in the library and of its effect on the use of the library.
9. A study of companies, such as Muzak and 3-M, to determine the extent of their willingness to work with educators in the establishment of pilot projects to test the efficiency of some technology in the school.
10. A study of procedure effectively used in business for increased efficiency and recommendations of how they might be applied in the field of education.

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APPENDIX A



APPENDIX B

## QUESTIONNAIRE NO. 2

1. Were you sent to the library by a teacher or did you choose to come?

Please check one:

Sent by teacher \_\_\_\_\_

Chose to come \_\_\_\_\_

2. Do you want the music returned to the library?

Yes \_\_\_\_\_

No \_\_\_\_\_

3. Why: Please use space below to answer.

Thank you.