

Territorial Behavior in the School Library

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A study of the physical conditions of libraries and the behavior of their users was conducted in four high school libraries in Israel. The research questions were: (a) What is the connection between the physical conditions in the library and the concentrations of students in it and the choice of seating location? and (b) What characteristics of territorial behavior are connected to the physical layout of the library? Data collection included observation of 1,222 students, interviews with all the staff of the libraries and with 20 students, and completion of 394 questionnaires by students while they were in the library. Over half of the students who were observed in the libraries chose to sit in the area of the reading tables, and 17% settled in the armchair area. Special attention was paid to the first 15 students who entered each library on each observation day because they had maximum choice in their selection of seating. Of the 170 students who were first to enter a library, close to two thirds chose to sit in a central location exposed to neighbors and passersby, and about one third chose tables in the corners of the library. About two thirds of the students said that they came to the library to study; about one third said that they came to talk with friends. Although conditions of quiet were important for the library's function, adolescents and adults defined quiet differently. Arrangements of subspaces in the library, based on the findings of the study, will attract students to the library and provide for the students' need for a place for both study and free-time activities.

Introduction

The school library is designed to answer needs stemming from the goals of the school. These goals are expressed both in the formal framework of curricula and in the informal framework of educational programs. In addition to academic objectives, the school also has broader educational objectives such as education for values, education for aesthetics, imparting cultural values, instilling reading habits, and encouraging appropriate use of leisure hours. The school library contributes to the achievement of these goals by having varied and suitable collections, as well as by providing the physical conditions that foster the development of sensitivity and awareness.

Today, many countries do not have regulations for the physical design of school libraries; most only have recommendations. Various locations of libraries entail varying considerations for their design, but these usually are not based on an explicit policy derived from research. Often the student is not the focus of the planning, and often there is confusion about what

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constitutes a desirable library. This study focuses on the physical design of the high school library as a factor that influences the behavior of its users.

Literature Review

Territoriality

The library constitutes a separate territorial unit in the school that serves defined purposes such as study, enrichment, and leisure. The planning of this unit involves a division into sub territories in which various activities are conducted that are aimed at achieving these goals.

The process of structural planning requires consideration of three elements: the aesthetic, the functional, and the behavioral (Cohen & Cohen, 1979). The least attention has been paid to the behavioral dimension. Human behavior can be altered by planning spaces differently or by locating furniture differently in the given space (Sommer, 1968a).

Sebba (1981) defines territorial behavior as a pattern of social-spatial behavior that is manifested in how organisms use their living space. The territorial behavior of people is ascribed, on the one hand, to the need for human proximity in order to achieve a common goal (such as security or fulfilling desires) and, on the other, to competition over the physical environment and resources. Conditions of noise, light, or proximity to other people affect feelings of tension and behavioral responses (Proshansky, 1976).

Most researchers in the behavioral sciences agree that the term territory is relevant to describing and explaining human behavior. This term entered the human behavioral sciences from the biological sciences. It particularly pertained to claims of ownership over a geographic space, the marking of the space, and its defense against others when necessary (Broner, 1965). Other researchers define the concept of territory differently. Lyman and Scott (1967) distinguish four types of territories in human societies: (a) public territories such as parks, which give the citizen freedom of access but not necessarily of action; (b) home territories, which are public areas taken over by groups or individuals such as children's clubhouses or coffeehouses that cater to habitués; (c) interactional territories, which are areas where social gatherings may occur; and (d) body territories, that is, personal spaces, which are the most private and inviolate spaces belonging to the individual.

Altman (1975) suggests that personal space and territorial behavior are mechanisms used to achieve one's desired level of privacy. Altman defines privacy as selective control of access to the self or to one's group. Proshansky and Rivlin (1967) assert that this behavior involves man's attempt to gain control over a certain piece of space. The operative significance of territorial behavior refers to ownership and the use of accessories in the territory such as tables, closets, chairs, and so on. The use of these accessories expresses the ownership of the territory and its contents (Altman & Haytorn, 1967).

The anthropologist Hall (1966) researched people's reaction to the space surrounding them, how people utilize the space, and the signals that people broadcast to other people in other spaces. According to Hall, how a person uses space affects his or her ability to relate to other people and to sense whether they are near or distant. He coined the term *proxemics*, which refers to the concept of approaching or drawing near. Ardrey (1966) laid down the basic tenets of *proxemics*. In Ardrey's view, man's territorial nature is genetic and cannot be expunged; each human being, as with other animals, has a need for his or her own space. In all human societies, people have a drive to hold a certain territory that surrounds them, a private territory, and to defend it against invasion; however, the size of the territorial space can vary from culture to culture.

Many researchers have dealt with the connection between territorial borders and privacy. Goffman (1969) noted the importance in public territories of the form of demarcation. The markers need to be clear, especially when the circle of users of the territory widens and the understanding and agreement between them decreases (Broner, 1965). Molcho (1998) explained that an act of setting out equipment on a work table is an act of demarcating a territory and gave examples of human behavior that express control such as when, immediately on entering a hotel room, people disperse objects and thereby demarcate the new territory; or when children scatter toys through the rooms of a house; or when family members disperse articles of clothing throughout the house.

Because the library is by nature a public territory and is divided into areas at various levels of commonality (such as carrels for individual work, tables for group work and workshops, computers, and multimedia equipment), personal demarcations of territory have to be clear and varied at the various levels of commonality. In the school library, the two kinds of "territory holders" relate differently to territory: the library workers regard their workplace as a semiprivate and established territory where they spend many hours of the day, whereas the students see the space (or territory) as being at their disposal as long as they are in it.

Various social situations emerge in the library, such as the activities in the study workshop or in group work, the waiting beside the librarian's table, or companionship in sitting at a table in the reading room. In these situations, the individual or group has different needs.

Choice of Seating Location

In studies that have been done in academic libraries, a marked tendency was found for people to sit alone and choose the farther tables (Sommer, 1967; Fishman & Walitt, 1972). Cohen and Cohen (1979) found that people preferred to sit alone in the library in isolated locations, with their backs and sides shielded, so as to maintain the level of privacy they needed. In a study that was conducted in reading rooms of public libraries, it was found that

65% of the participants chose tables located in comers in the library periphery; only 35% of the users sat at more central, exposed tables (Shoham, 1991).

The choice of location when sitting at a table also has a territorial significance. Choice of seating location sometimes manifests a strategic choice in regard to other people and can also be an effective means of cooperating with them. There are differences between modes of sitting at the dining table in the private home, in a restaurant, in an office, in a library, or at the counter in a bar. Pease (1981) specifies four basic sitting positions a person can take:

(a) sitting beside a person on the same side of the table, expressing and enabling full cooperation; (b) sitting beside a person at the comer of a table, enabling eye contact, proximity, and friendliness; (c) sitting straight across the table with the table separating the people, with each having a separate space, and sometimes with objects serving as territorial boundaries; and (d) sitting diagonally across a table, expressing each person's territorial independence.

The shape of the table also influences the relations between the people sitting at it. A round table is less formal and has no explicit place for an authority or power figure. A rectangular table, however, enables one to take a strategic location vis-a-vis others. Pease (1981) notes that sitting at a table with one's back toward the wall or toward a solid piece of furniture lends a person security and strategic control that he or she will not have if sitting with his or her back toward the entrance or toward an open space, which can case a feeling of being cut off from whatever is happening back there.

Methodology

Research Goals and Questions

The goal of the study was to examine the connection between the physical conditions in the high school library and the behaviors of the library users, that is, to clarify how varying physical conditions in the library could lead to varying behaviors by the students. The study was based on the assumption that the physical layout of the library is a factor that influences its users' functioning and behavior. The goals of the study raised certain questions, which were formulated after a survey of the research literature and after the pilot study. The research questions were:

1. What is the connection between the physical conditions in the library and the concentrations of students in it and the choice of seating location?
2. What characteristics of territorial behavior are connected to the physical layout of the library?

Population and Sample

The study was conducted in the libraries of four comprehensive high schools that included both junior high and high schools. These schools constituted, for the most part, the only secondary educational framework for their respec-

tive communities. In Israel, 25 state-run comprehensive-educational schools are the only school in their community and are attended by most of the teenagers who live there. The sampling of schools was done by segmenting the population according to geographic location (one school from the north of the country, two from the central region, and one from the south). The schools are referred to here by the numbers 1 to 4 (see Appendix A for a brief description of the libraries and the schools). In each school, all the students who were in the libraries on the observation days were studied. Similarly, all the librarians and staff in these libraries were studied. Altogether during the study, 1,222 students were observed, and 394 questionnaires were collected (107 from junior high students and 287 from high school students).

Procedures of the Study

Both qualitative and quantitative research methods were used to explore the research questions about the connection between the physical conditions in the library and the behaviors of the students in the learning environment.

The qualitative research phases

Data collection was done in the four school libraries by observing the libraries and those people present in them. The data in the study were collected from field reports, transcripts of interviews, photographs of situations that occurred in the libraries, and descriptions of observations. The qualitative research method was chosen because the data were to be derived from the natural setting, and the researcher was the main research instrument (Sabar, 1990). The qualitative research method also made it possible to draw conclusions in an inductive manner. A cross-check of the findings of the observations, the interviews, and the other testimonies made it possible to construct a theory by a dynamic process (grounded theory).

In each school, four observations were conducted. An initial observation was made in the vacation period without the presence of students (June-July 1999). This enabled us to measure the library and mark the dimensions of the subspaces on a sketch, including the layout of the furniture. Spatial drawings of the libraries facilitated the next three observations (November 1999-April 2000). This phase of the observations involved full integration into the daily reality of the libraries and being present throughout all the hours of activity on the days the observations were conducted. During the observations, records were kept of the movements of the students entering the library, the seating location they chose and their way of sitting, and the students' various activities in the library.

On completion of the observations, interviews were conducted with all the librarians who worked in the libraries studied. In addition, in each school, five students were interviewed who were randomly chosen from among those who spent time in the library. The interviews were open ethnographic interviews, that is, interviews that involved a friendly sort of

conversation, allowing a free flow of information and avoiding any interrogation, which can sometimes put a stop to cooperation (Spradley, 1979). The interviews were tape-recorded and then transcribed in two stages: a stage of writing by hand and a stage of computerized printing that enabled encoding and analysis.

The quantitative research phase

After completion of the qualitative phase of the study, questionnaires were distributed to students who spent time in the libraries in the four schools, with a segmentation into different days and hours. A total of 394 questionnaires were filled out. The questionnaires focused on the students' choice of seating location while filling out the questionnaire, their attitudes toward various physical conditions of the library, whether they came to the library alone or in a group/ and demographic details.

Findings

Dispersal of the Students Among the Areas of the Library

The first research question dealt with the connection between the physical conditions in the library and the concentrations of students in it and the choice of seating location.

In the four libraries, a total of 1,222 students were observed entering the libraries during the three days of the observations in each library. Over half the students (53%) chose to sit at tables in the reading area of the library. Another 17% chose to sit in the area of the armchairs, whereas 11% spent time in the area of the librarians' counter and 7% went straight to the photocopying machine. Another 7% of those observed went to the computer area, and the rest stood or sat among the bookcases (see Table 1). About two thirds of the students reported in the questionnaires that they came to the library to study.

Sitting in the Reading Room

For the purpose of monitoring those who spent time in the reading room in the areas allotted for sitting at tables, three categories of seating locations were defined.

1. *Sitting at a central table.* This refers to a table surrounded on both sides by other tables, a table near the librarians' counter, or a table close to the main aisle.
2. *Sitting in the corners of the room and in the periphery of the reading area.* This includes sitting at a table that is located behind furniture, such as separate bookcases, that creates a partition and divides the main space into subspaces; or sitting at tables that are not surrounded by other tables.
3. *Seating location in carrels.*

Table 1
Breakdown of the Students (According to the Observations) by Choice of Seating/Standing Locations in the Libraries in the Entire Sample and by School (N=1222)(Frequencies and percentages)

School Sample Observation Location	1		2		3		4		Total	
	N	%	N	%	N	%	N	%	N	%
At tables in the reading room	209	49%	232	67%	71	38%	134	50%	646	53%
Armchairs	55	13%	43	12%	43	23%	61	23%	202	17%
Computers	50	12%	7	2%	0	0%	25	9%	82	7%
Librarians' counter	49	12%	28	8%	36	19%	26	10%	139	11%
Photocopying machine	33	8%	19	5%	20	11%	16	6%	88	7%
Standing and sitting among the bookcases	27	6%	17	5%	15	8%	6	2%	64	5%
Total	423	100%	346	100%	185	100%	268	100%	1,222	100%

These seating conditions existed in all four schools, except that Schools 1 and 2 did not have carrels. In the observations, separate attention was paid to the first 15 students at the opening of the library who chose a seating location in the reading area, and to the total of those who entered during all the hours of the observations.

Attention was paid to the first 15 "settlers" as a separate unit because they chose a seating location when the library was empty and all the possibilities were open to them. The choices these students made were not influenced by the fact that the seating locations that they sought had already been taken by students who had come to the library earlier. Figure 1 presents the breakdown of the seating locations among the 170 students who first entered the library (the first 15 students in each library and in each of the observations, except for Library 3, in which only 35 students were observed instead of 45, as it is a smaller school).

Of the 170 students who were first to enter the four libraries, close to two thirds (62%) chose to sit in a central location exposed to neighbors and passersby, and about one third (35%) chose tables in the corners of the library. Because there were carrels in only two of the libraries (in Schools 3 and 4), only in those libraries could thought be given to sitting in this location. The carrels were open, with a 70 cm. partition that divided the work table. Of the 90 who were the first to enter the libraries in School 3 and School 4, 6% chose to sit in carrels.

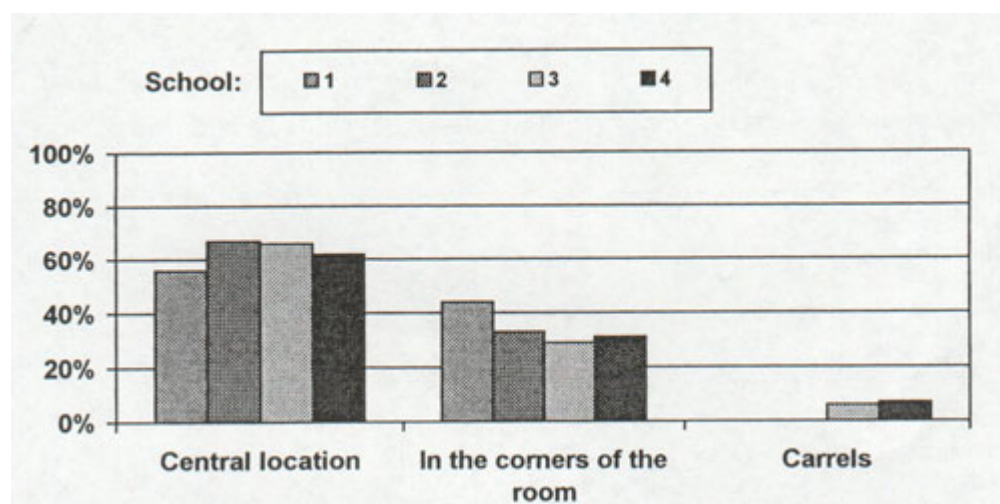


Figure 1. Breakdown of the first students who entered the library (according to the observations) by choice of locations at the reading tables in the entire sample ($N=170$, percentages).

These findings are similar to the findings regarding all the students who were observed during the entire day in the three days of the observations: 61% of the 671 students who were observed spending time in the reading area sat in central locations of the room, and 38% sat in corners of the room.

Significant changes in the number of those sitting in the central locations occurred when a teacher or a librarian sat for a number of hours at a table in a central aisle. The students avoided sitting in the area close to a teacher or librarian.

Figure 2 presents the breakdown of the seating locations among all 671 of the students who were observed spending time in the reading area in the library.

Figure 3 depicts the choice of seating locations in each school according to the observations. Here too it appears that only a low percentage sat in carrels in the schools where carrels existed. There is a disparity between School 3, in which 11% of the students who entered the library sat in carrels, and School 4, where only 2% of those who entered did so.

About one third (32%) of all the students who chose to sit in central locations sat particularly beside main aisles, in locations that constitute main arteries of movement in the library, or near the librarians' counter.

Reasons for Preferring Seating Location

Figure 4 presents a breakdown of the students' responses on the questionnaires regarding their reasons for preferring the seating locations.

Figure 4 indicates that the most common explanations for choice of seating location were quiet location (42%), convenience (38%), and sitting beside friends (33%).

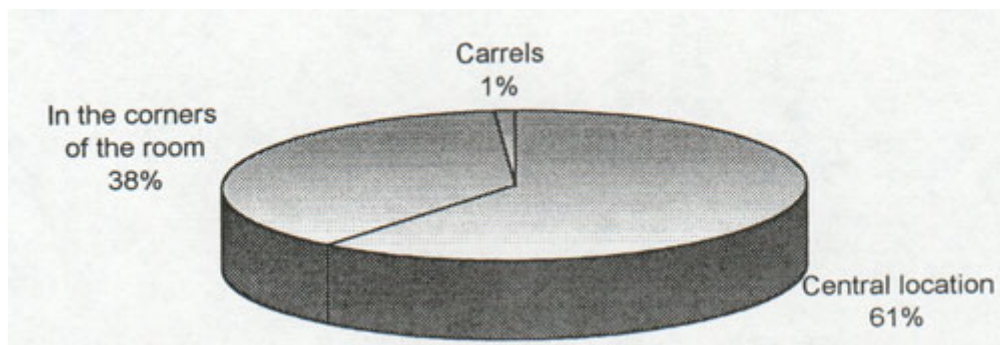


Figure 2. Breakdown of all those entering the libraries who were studied (via the observations) by choice of locations at the reading tables in the entire sample (N=671, percentages).

Quiet Comers

When asked "Why did you choose to sit in the place where you are now sitting in the library?" 42% of the students answered, "A quiet place." However, the quiet comers of the library were not the most popular with the students. When these responses were compared with their observed behavior, a contradiction was revealed: 61% of the students were observed choosing their seating locations in central locations of the library, especially near main aisles and arteries of movement.

The students' statements in the interviews, when they were asked about their study habits and the necessary conditions for them, indicated that adolescents viewed conditions of quiet differently from how adults view them. The concept quiet is relative and individual. This may explain the librarians' and students' varied notions of conditions of quiet in the library. Even when the librarians felt the library was extremely noisy, the students

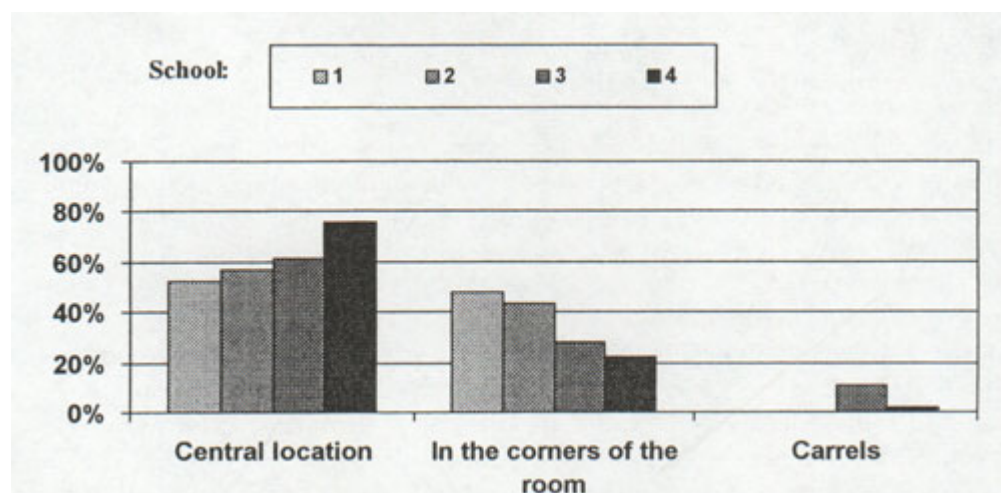


Figure 3. Breakdown of all those who entered the library (according to the observations) by choice of locations at the reading tables by school (percentages).

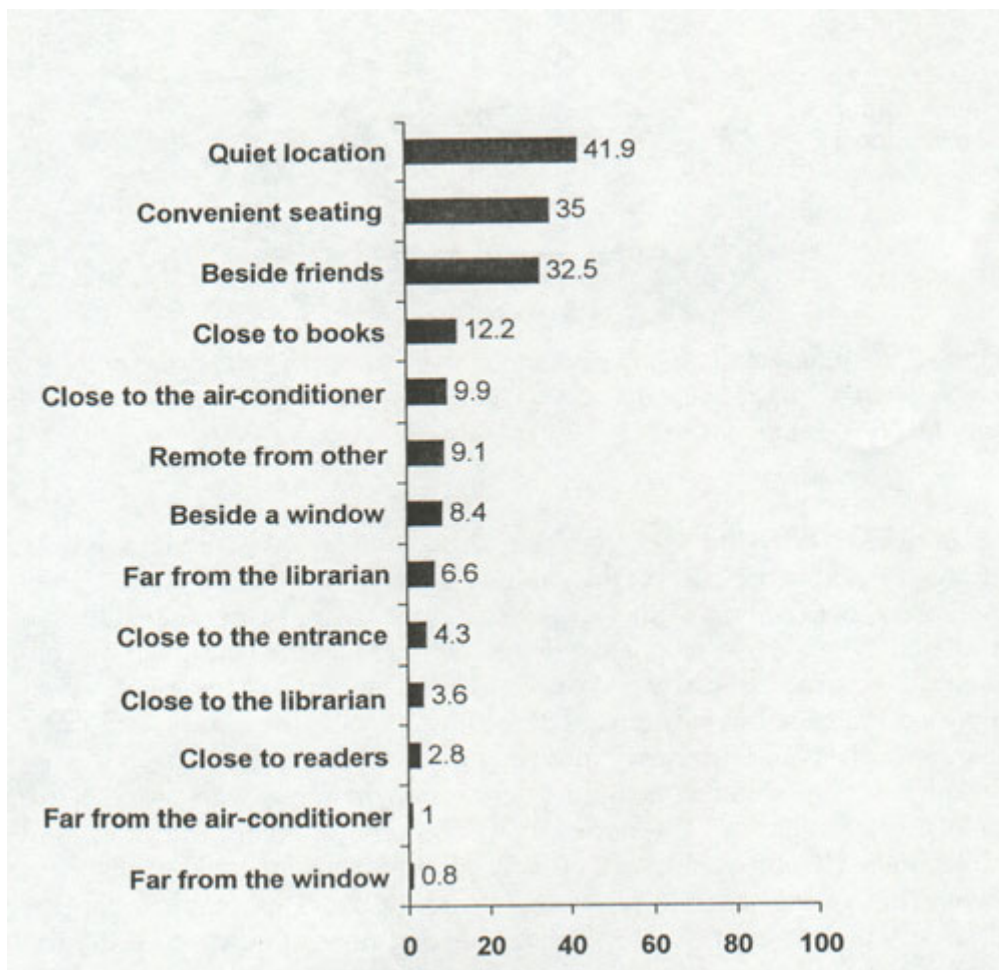


Figure 4. Breakdown of the explanations for choosing a seating location in the library among the entire sample (N=394, percentages).

did not take notice and deliberately chose central seating locations. This finding is reinforced by the fact that only a few of all the students who were observed chose to sit in the carrels, which enable the maximal detachment and distance from others and provide conditions of quiet.

Sitting Beside Friends

Of the 394 students who responded to the questionnaire, 93 (25%) reported that they came to the library alone, and all the others—75% of the sample— came in the company of a friend or friends: 137 (35%) arrived with one friend; 158 (40%) came in the company of a group of students; and 61 (15%) came to the library with a teacher or a parent. These data were similar to those from the observations that were conducted in the libraries: 928 students out of the 1,222 who were observed in this study (76%) came to the library in the company of a friend or friends.

Of the students who came alone to the library, 52% said they chose to sit in a quiet place, whereas, among the students who came to the library with a friend, only 28% stated that they preferred a quiet place. A significant statistical correlation was found between being alone or in a group in the library and choice of seating location. For example, there were students who sat in the central areas and particularly chose to sit together. The librarian from school 2 described it this way: "They go where everyone is, they love to be together. They come because of the 'together.' They're concentrated in one place and work together, basically a large group. They sit in groups and love to work together." She emphasized that the most popular tables were, in fact, those that were across from the librarians' counter, a location where there was much movement of passersby, of students who entered the library to study or only went to the counter to borrow and return books. She noted that tables were joined together to create concentrations of eight students because, she said, "They love to sit that way."

Sitting Beside a Relevant Collection of Books

This factor accounted for 12% of the considerations for the students' choice of seating location in the library. Some of the librarians noted the students' desire to sit near a book collection that they needed for studying. In School 1, the librarian said the junior high students "love to sit near the reference books and especially the encyclopedias." In School 3, many students were observed standing with encyclopedia volumes next to the librarian's counter and studying them, or reading while standing up or sitting on the floor among the bookcases because there were no study tables near these bookcases. Omer, a student in School 2, said, "We also choose a seating location next to the books so we won't need to walk around a lot to find books and bring them to the table."

Another librarian from the same school had an opposite view: "It's not the collection that causes the choice of seating location, but actually the conditions of quiet, or a group the student wants to sit next to." Matan, a student from School 2, said about himself that he did not sit near the collection he needed: "I don't mind getting up and walking to the books."

Close to the Librarians

About 7% of the students declared that they chose to sit far from the librarians, and another 4% said they chose to sit close to the librarians. An explanation for choosing a seating location close to the librarians was given by a librarian from School 1: "Basically students sit here [near the counter] who are studying and need our advice. So they sit near us as they work and we give them guidance and counseling as well as books."

Itai, a student from School 4, explained why he chose to sit in a central location in the library:

It's very inconvenient to sit in a part that's separate from the library. Noise doesn't bother me and I have no reason to sit in a separate carrel. I like to some-times look and see who's coming in, to see a friend come in who can help me or study with me, and if suddenly I need the librarian for some book, then at least I can see her even if she's not sitting in her regular place.

Geula, a student in School 1, in response to the question "Where will you choose to sit when the library is empty?" answered:

Across from the librarians, because you see who comes in and who goes out and maybe someone will come in who I know. Also, the librarians are close by and I love that they're always ready to help; even though they're busy, they see me and ask if I need help and bring a book immediately.

Carrels for Studying by Oneself

As mentioned above, only Schools 3 and 4 had carrels. Among the questionnaire respondents who were from those schools, some students marked on the charts that they sat at the carrels. A librarian from School 4 said, "I don't see that they have any special appeal. If there's a lot of room in the library, that's not where students will sit. It's not an attractive place."

Another reason for not choosing the carrels was cited by a student named Efrat from School 4.

Once I tried and wasn't able to work there, because it was too closed off, it wasn't very comfortable for me. It gave me an unpleasant feeling because I need space. Something that's closed off makes me nervous. People don't like those places, the carrels. Maybe if you want to write something very personal, you can seal yourself off there. It's a good place to think, if you really want to focus on the material that you're studying. In the other places, it's also possible to concentrate, but it's more open and you see other people. You're not sealed off in-side a small partition.

It should also be emphasized that sitting in carrels separated the students from their friends, who constituted their peer group and whom they needed as companions in their various activities.

Territorial Behavior

The second research question was: What characteristics of territorial behavior are connected to the physical layout of the library?

In the framework of the study, various kinds of behavior were observed. An analysis of the observations revealed that most of the forms of territorial behavior occurred in all the schools. The territorial behaviors that were observed in the libraries were manifested in choice of seating location and in the use of library furniture.

Students usually chose a seating location in the library that afforded them territorial control. The search for personal, intimate, or social space was reflected in the choice of various seating locations in the library. Students who entered the library alone chose to sit where they could guarantee them-

selves territorial control. Some wished to have a commanding view of a large space and sat facing the entrance so that they could see those entering and leaving the library. Sometimes students sat in the far periphery of the library; here too they faced the entrance and preferred locations that enabled them to see the entire space of the library. Some students entered the library in a group and chose a seating location that allowed much proximity between them; they would put chairs together by moving them to the side of the table and sit next to each other. Sometimes a student would join a friend and, with body language, express the notion that he or she had seized the new territory. Students who were the first to settle in the armchair area sat facing the entrance in chairs along the wall; in this way they could better see and be seen. Because those who went to this area did not come to the library for purposes of study, but to seek the company of others, this control over the viewing space was important to them in terms of widening their "social circle."

In all four libraries, over a third of the students were observed choosing to sit at a distance, at a separate table, so as to preserve their private space. Yonatan of School 1 explained the choice of his isolated seating location: "I need to concentrate, and it's easier in an isolated spot. Less people go by, it's an out-of-the-way place. If I'm with some friends, I'll go to a central location and if I'm alone, I go to sit here."

Students who came to the library to study also chose a seating location that enabled them to control and observe a wide area. Often this control enabled these students to signal to friends who had entered the library at a later point to join them. Students who were interviewed said that they sat like this because they expected to be joined by friends with whom they would study, and that another seating location would have prevented their friends from seeing them immediately on entering. Thus responded Efrat, a student from School 4, when asked why she chose to sit facing the main entrance of the library:

Maybe because I have more viewing space. I have no idea. Maybe because it's always important to me to see everybody. Even while I'm studying and even while I'm concentrating I can't be cut off. I always look to see if there are people I want to talk with or who maybe can help me. I choose a place where I'll have control.

Students who sat with their backs to the entrance wanted detachment from the environment and protection against invasion of their personal space. They cut themselves off from what was happening behind them and made it so that those entering could not identify them and disturb them in their activity. They also made body motions that expressed the desire to be separate. They put their hands on their ears and bent their bodies inward as if they had closed themselves off. These students wanted to ensure their privacy. Natalia, a student from School 1, explained her choice of the remotest location in the library by saying she wanted to be alone: "It's best

when no one looks at me ... so that it's more private." Chaim of School 3, when asked what created a feeling of privacy, emphasized, "I'm alone at the desk ... I have a room to myself." Yonatan of School 1 felt that there were conditions of privacy in the library even when working in a group. He arrived with three friends who chose to study together and said, "In the library the whole class isn't there. It's only four of us ... there aren't other students to bother us."

Students emphasized with their body language and with the help of their personal items the desire to guarantee themselves a territorial space. This territorial behavior was especially conspicuous in the armchair area. Students put their feet on adjacent armchairs or sat leaning on a number of chairs, sometimes even lying or leaning with the upper part of their bodies on an additional chair, thereby preventing other students from sitting next to them. These students sat in a way that allowed them a "large" personal space and created it with their bodies or with the help of objects and reading material such as magazines or books; however, sometimes we saw a phenomenon of very crowded seating on the armchairs, sometimes with three students on two chairs.

At the tables in the reading room, students were observed who had placed their bags on a chair next to the seating location and thus created a boundary for other students who could not sit at their tables. Others dispersed their books and equipment over a large area of the table as a demarcated territory. The penetration of a "territorial" area prompted reactions. In one of the observations, a girl was seen sitting down at a table where another girl was sitting. On the table were a book and writing papers scattered over a large area. To set down her items, the girl who had just arrived moved the other items a little and thereby prompted an angry reaction from the other girl, who changed her sitting position by turning her back and laying her arm along the length of the table to mark a boundary between the two of them.

Students were also observed sitting at a table where there was already another student, and added their items to the array of books and papers on the table. Reactions included hand motions and restoring items that had been moved and sometimes exclamations of anger. As Molcho (1998) argued, moving and arranging another person's items is an invasion of territory. He emphasized that expressions of anger are characteristic of adolescents who, by dispersing many objects throughout their private space, mark their private territory, and when this act of arrangement and organization is undermined they fight to restore it.

Another reaction observed was leaving the table and going to another, empty location that again promised an independent and defined territory. Students who regularly sat separately at a table in the reading area, when upright and leaning with both arms on the table, changed how they sat when other students sat down at the table. They extended their near arm toward

the neighbors and thus turned their back on them, creating a partition with their body.

At times when the library was crowded with many students, tables were observed with six to eight students sitting around them. Their way of sitting indicated that they were limiting their territorial claims. The students concentrated their study material and even placed it on their knees to read it. Sometimes they laid their nonwriting arm straight along the table and also leaned on it with the top part of their body (in an almost supine position), thus demarcating their personal space and separating it from their neighbors'.

Other students were observed sitting with their backs to the entrance so as to limit the invasion of their field of vision and prevent distraction. With their body language, they created a boundary and prevented penetration of their territorial space. Some chose a certain place and made it their regular location. Sometimes the place was chosen in a search for conditions of quiet or for an appropriate book collection, but the student would subsequently return to it even if the library was not noisy or if he was dealing with a different subject matter.

Choosing a seating location in a central area of the library, especially if it was close to the librarians' station as was particularly characteristic of the junior high students (particularly in Schools 1 and 2), also manifests the need to guarantee important conditions in one's territory. The sense of security provided by the nearness of the librarians, together with the centrality, is reminiscent of the behavior of children in their homes when they choose to sit near their mother (e.g., in the kitchen).

Sometimes two students entered the library together, but when they sat at the table they chose to sit diagonally across from each other at a distance. They thereby guaranteed themselves defined personal spaces without any overlap between them. On the other hand, there were students who, in order to sit and study, moved a chair from another place and came to a table where one or more students were already sitting. In this way they entered the territorial space that those seated at the table had chosen and created tangential territorial spheres. They would place the additional chair at the table even when there were empty chairs across from the seated student that did, not, however, afford the needed intimate space.

When two students were observed studying together, their way of sitting at the table was connected to the level of intimacy they needed. Most of the students who were observed sitting in pairs sat next to each other or in a corner position, with one at the head of the table and the other beside him or her. This way of sitting also required a physical act of moving a chair. That is, to create conditions of territorial proximity, students dragged chairs from one location to another in order to match the physical conditions to their needs, and sometimes they went to remote locations to protect those needs.

Other students studied together, but sat across from each other and thus created more distant and tangential spaces. Efrat, a student from School 4, explained why this was a comfortable way of sitting for her:

It's more comfortable to talk about the material face-to-face, and it's not comfortable if you're sitting next to each other. When you sit across from each other, you can talk about the material and see each other's faces and hear better.

In School 3, students moving chairs from one place to another was a common phenomenon, because the tables were designed in the shape of trapezoids and the students were supposed to sit diagonally from each other, in a position that Knapp (1972) called the "independent position." Students who came to the library together and wanted to be close to each other changed the arrangement of the chairs at the table. Also conspicuous in this school was the phenomenon of increasing the territorial space by adjoining the adjacent table and placing items, mainly bags, on it. The phenomenon was observed when one or two students were sitting at the table.

This was especially pronounced in School 4, where the armchair corner had a large number of armchairs and did not afford privacy unless those sitting there defined larger areas for themselves and prevented others from becoming part of them. In these cases, students brought chairs in order to sit beside the student who was stretched over the armchairs.

In addition, accessories and objects were used for territorial marking without any connection to the actual functions of these items. In one of the observations, two students who sat at a remote table laid newspapers out on it beyond the area that they needed for sitting; they did not read them, but instead were conversing.

Although in most of the observations, students were seen concentrated together, sometimes more intimate conditions were also needed. A librarian from School 1 said:

Sometimes a student needs separateness ... he wants to be alone without eyes looking at him. In other words, there's a need for work corners that are more intimate. Sometimes they feel our eyes all the time and sometimes they check to see if we're nearby.

She noted that there was a difference between the junior high and high school students. "Sitting together and group endeavors are more typical of the younger ones."

At the librarians' stations, territorial behaviors both of librarians and of students were observed. In all four libraries it was found that the students did not pay heed to the territorial needs of the librarians. When they came to the counter to receive service, the students would lean with their arms on the counter, bending over so that their upper bodies were leaning on table or even reclining on it (especially in School 3). In School 2, this was prevented by the elevated counter at the librarians' station, but students would invade the librarians' territory by extending their hands over the elevation for

various purposes, such as seeking equipment, books, or lists that were stored there. Items were taken from the internal part of the counter by leaning on it, bending over it, and drawing the item from the inner shelf. Students were also observed in this library coming to the raised counter to lay pages out on it while standing and using the office equipment that was stored in the hidden part of the counter, including in the drawers. Some students also used the librarians' territorial space as their own private space and kept their private items on the librarians' counter, putting them there for availability and returning for them when needed. The librarians' counter also served the students as a place to set down their bags when they were in the library only for a short time, and they needed the surface for taking items out of the bag or organizing it before leaving the library. This was common in Schools 1 and 4 where the librarians' station was located next to the entrance.

In School 3, students entered the librarian's office to register borrowing books, search the collection of reserved books, and receive reference service. This activity was done inside the office because the librarian had abandoned the counter that was at the front of her office and chose to sit in her room. The counter served the students for perusing the books that they took out of the reference bookcase across from the counter, for sitting, and sometimes even for stretching out. The counter became part of the general property, like any other table in the library.

In School 1, students were observed sitting or lying on the counter at the librarians' station while waiting to receive service. In all four schools, students were observed reaching out for the items that were on the desk at the librarians' station. The reference service was given either at the librarians' station when the students went to it or when a student called out a question and the librarian left her place and approached him or her. Thus the librarians' territory was extended beyond the defined station.

The librarians' reactions to the students' territorial behaviors varied at the four schools. In the libraries of Schools 1 and 4, the librarians would provide most of the services while standing so as to cope with the students' takeover of the counter area, and thus with their body language give a message that defined their status (when a librarian sat down, the students who were standing would tower over him or her). In School 3, the librarian "abandoned" the counter and sat most of the time inside her office. In School 4, the librarians used additional tables to increase their personal space and create greater distance between themselves and the students. They used signs to indicate that there was no entry past the tables. The librarians in School 2, in addition to the elevation of their counter, added weight to it by affixing carts for returning books to the bays of the counter. In Schools 1 and 3, the office created a clear definition of territorial space. In School 4, the librarians created a defined and widened space by adding a row of tables at one part of their station and affixing a cart for returning books at another part.

In summary, in the libraries, territorial behaviors were observed that manifested the students' need for privacy and control. Individuals defined their territorial space by the choice of seating location and by the use of body language, personal items, or study material. Such territorial expressions were observed in the reading rooms, in the armchair areas, at the librarians' stations, and at the cubby holes for bags.

Discussion

This study dealt with the physical design of the secondary school library as a factor that influences the behavior of the students who use it. The influence of the library's physical design on the students' activity was checked according to the following parameters.

- Concentrations of the students in the library and their choice of seating locations;
- Characteristics of territorial behavior.

The Connection Between the Physical Conditions of the Library and the Concentrations of Students and Choice of Seating Location

Over half the students who were observed in the four libraries chose to sit in the area of the reading tables. The armchair area was the second most preferred place for sitting in the libraries. About two thirds of the students reported in the questionnaire that they came to the library for purposes of studying, and about one third reported that they came to the library to talk with friends. Despite the fact that most studies that discuss the role of the school library emphasize the academic work that is done there as a complement to the academic system that exists in the classrooms (Davis, 1979; Luskey, 1983; Shoham, 1993), the library also serves as a place for socializing and for leisure activities. Only a small percentage of students came to work on the computers (7%); this can be explained by the small number of available computers, but also some students found that sitting next to the computers did not allow for group work.

Among the students who chose to sit in central locations, 32% sat by the aisles, especially in places that constituted central traffic arteries of the library, and in proximity to the librarians' station. The choice of these locations was sometimes based on conscious considerations of convenience and access to the books or the librarians, meeting a friend more easily, seeing and being seen, or on unconscious reasons such as the need for proximity to other people and the desire not to be alone. Sitting in a remote location of the library was done from choice, intention, and awareness. The interview findings reinforced the findings of the observations, and the librarians also noted that the central locations of the library were more crowded. These findings accord with the adolescent need for the peer group (Erikson, 1968; Muuss, 1982).

The most popular tables in the reading room were, in fact, those located across from the librarians' station. In this location there was much traffic of passersby and of students entering the library for studies or to go to the librarians' station to borrow and return books. These locations were an area marked by environmental noise. Despite these findings from the observations, according to the questionnaires, 42% of the students chose to sit in a certain place because it was quiet. Possibly the term quiet is relative and personal; the term was not used in a consistent way between the students on the one hand and the librarians on the other. The students converse among themselves and think they are not producing "noise" and are not disturbed by their neighbors' conversations, whereas for the librarians such conversations are a major disturbance in the library. There also exists a situation in which the seating locations in the library are designed to allow the librarians access and control over most of those sitting in it, with tables concentrated in the vicinity of the librarians' station to facilitate study and reading. It should also be noted that the conditions of quiet that are necessary for secondary- school students (adolescents) are different from the conditions needed for other ages, and that the "young" junior high students need more help and hence prefer to sit near the librarians more than the older students do.

Also, a high percentage of those entering the library arrived in the company of a friend or friends (about 75%). The high percentage of those who come to the library with others explains the preferred choice of seating locations in central areas of the library. A student who is interested in conditions of quiet and concentration distances himself from the company of others and settles in an isolated spot, whereas for those who come in a group, the noise and motion in a central location are not bothersome.

Territorial Behavior

The observations revealed a phenomenon of simultaneously defending territorial space and personal space; the students' need for proximity to the other (friends and librarians) creates overlapping and, at the same time, tangential personal spheres that enable distancing and detachment. These findings are in accordance with the findings of Goffman (1969), Molcho (1998), and Sommer (1968b).

The need for territorial control and privacy, detachment from the surroundings, and protection against invasion of personal space was different in the reading room from that in the armchair area. In the latter area, more use was observed of body language (form of sitting, body position, use of hands and feet) for demarcating the territorial space, whereas in the reading area the student's personal space was demarcated by placing books and other items on the table or on an adjacent chair and sometimes also by the form of sitting.

A difference in territorial behavior was observed between students who came to the library alone and those who came with one friend or a group.

The surrounding physical conditions were important for ensuring that the library users' territorial needs were met. This was evident from choice of seating location in the reading room. Thus although carrels allowed for greater privacy and a clear definition of territorial space, most of the students did not choose to sit in them. They sat in other locations that ensured their territorial needs would be met; with the help of furniture and personal items, the students defined their territorial space for themselves in the library. Sometimes at the librarians' station, the students penetrated the librarians' personal space.

Various students appeared to require varied physical conditions to provide them with territorial comfort. It is possible to meet these needs via physical planning of the library. A clearly demarcated distinction between the more public spaces and the more private spaces can enable students with different needs to "find their place" in the library.

Conclusions

There is a need to ensure suitable physical conditions in the school library that will attract students to study there and also to spend their free time there. The main conclusion that arises from the analysis of the findings of this study is that the physical conditions of the library do influence the behavior of the students in it.

A further conclusion is that conditions of quiet are important for the library's functioning, even though adolescents and adults define quiet differently. It may be possible to achieve this by dividing the library into subspaces. In addition, the location of the library's furniture and equipment affects the concentrations of the students in the library and, consequently, the degree of noise. Places characterized by noisy activity (such as a photocopying machine, computer stations, armchairs, and informal sitting comers) should be situated so as not to constitute a source of disturbance for others needing a quiet space.

Studying in a group is common to, even characteristic of, adolescents; their need for the company of peers is manifested in the students' learning style, particularly in junior high school. Dividing the library into subspaces that will enable group study at remote tables in comers of the library will suit the needs of many students. The library could also be divided into subspaces according to the various activities and to create conditions that meet the needs of the users; for example, we would recommend the following for the schools we studied: tables for group work (40%) that are separate from more quiet and individual work locations (30%), tables for single students (10%), and places for leisure activity (20%). Clear separation between the spaces is sometimes needed; this can be accomplished with the help of acoustic partitions and furniture to separate various types of spaces. Using modular furniture can enable the library to be redesigned according to changing needs. Attention should be paid to creating acoustic conditions that enable

academic activity on the one hand, and informal social activity on the other. It would also be worthwhile to plan carrels with spaces that do not cause a sense of being closed in. In addition, seating locations should also be provided for students beside the librarians' station, as some students wish to sit close to the librarians so that they can turn to them for help when necessary.

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Appendix A The Libraries

Library 1

The area of the library was 414 square meters; in the library there were 60 seating locations at tables, 9 armchairs, and 6 computer stations for students (see Figure 5). The size of the print collection was 15,000 volumes. An audio- video room located in the library could accommodate 60 students; there were 120 videotapes. In the school there 1,200 students in 54 classes in junior high and high school.

Library 2

The area of the library was 152 square meters; in the library there were 60 seating locations at tables, 6 armchairs, and 3 computer stations. The size of the print collection was 10,000 volumes. The audio-video collection was separated from the main collection of the library. In the school were 1,700 students in 51 classes in junior high and high school.

Library 3

The area of the library was 168 square meters; in the library there were 29 seating locations at tables, 6 armchairs, 11 carrels, and 1 computer station for students. The size of the print collection was 6,000 volumes. The audio-video collection was separated from the main collection of the library. In the school were 602 students in 22 classes in junior high and high school.

Library 4

The area of the library was 340 square meters; in the library there were 76 seating locations at tables, 8 armchairs, 6 carrels, and 12 computer stations for students. The size of the collection was 10,000 volumes. An audio-video room located in the library could accommodate 80 students; there were 100 videotapes. The slide collection is scattered among the different subject teachers. In the school were 1,480 students in 41 classes in junior high and high school.

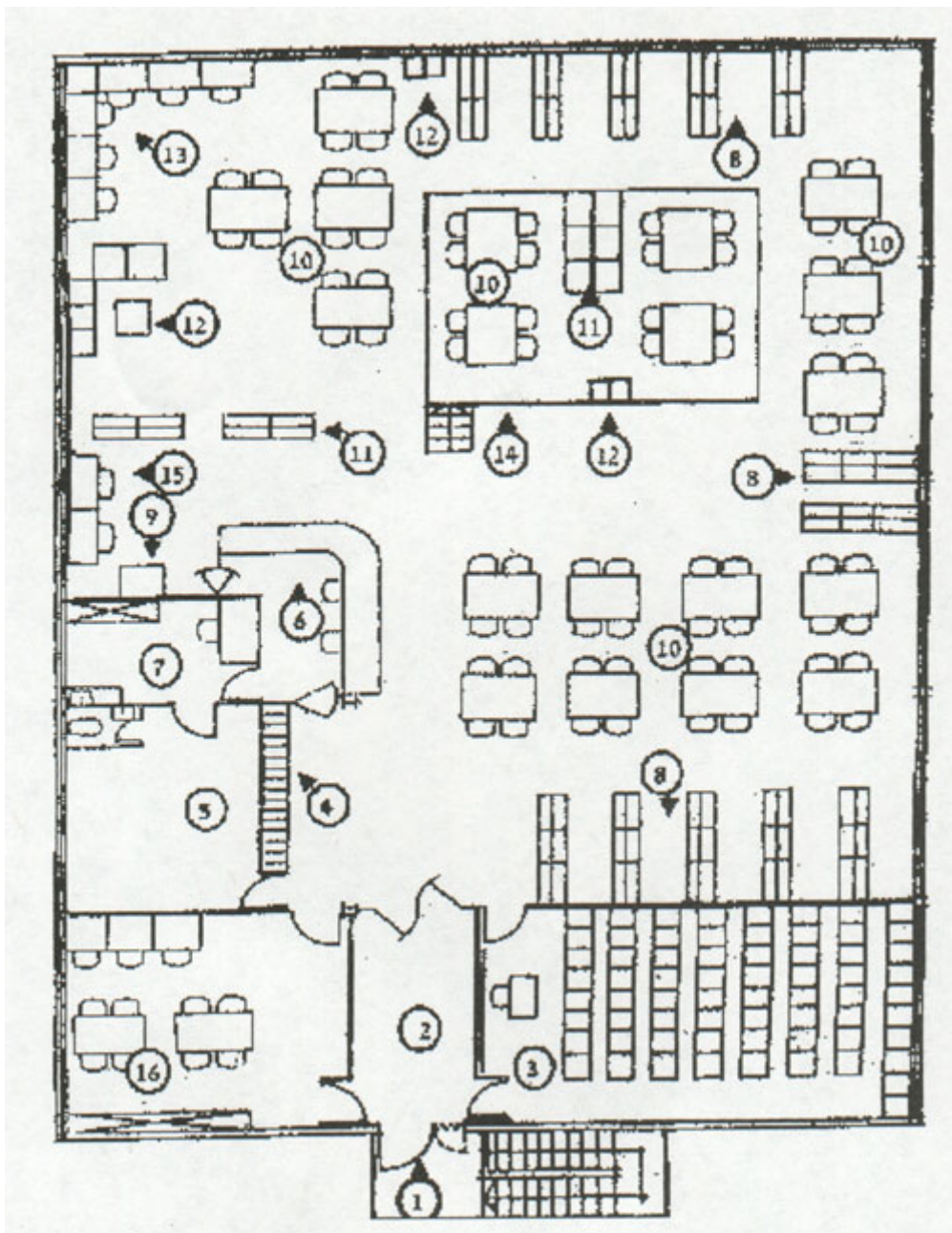


Figure 5. Floor plan of library in school # 1.

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|---------------------------|-----------------------|----------------------------|
| 1. Entrance | 7. Librarian's Office | 13. Computer Stations |
| 2. Foyer | 8. Book Cases | 14. Raised Platform |
| 3. Audio-Video Room | 9. Photostat Station | 15. Table (for Photostats) |
| 4. File Case | 10. Reading Area | 16. Pedagogic Center |
| 5. Storage Room for Books | 11. Low Bookcases | |
| 6. Librarian's Station | 12. Lounge Chairs | |