This introduction to the library system at the College of Wooster in Ohio provides pertinent advice and information that is designed to enable the student with a specific learning disability to become an effective library user. Following the introductory chapter, which includes descriptions of the audience for whom the manual is written and how it is to be used, the following topics are covered: (1) library environment strategies for specific personality preferences; (2) learning locations in the library; (3) asking for assistance; (4) finding information and taking notes; (5) understanding call number symbols and finding sources; (6) developing an efficient library search strategy; and (7) allowing enough time for library research. Four appendixes include worksheets for students; a discussion of the characteristics of persons with specific learning disabilities; a check list for determining the preferred learning styles of individuals; and a bibliography of recommended readings and other related research sources. (CGD)
A LIBRARY RESEARCH MANUAL
FOR COLLEGE OF WOOSTER STUDENTS
WITH A
SPECIFIC LEARNING DISABILITY

by

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Andrews Library
The College of Wooster
Wooster, O., 44691

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CHAPTER ONE:
INTRODUCTION TO THE MANUAL

LIBRARY DEFINITION
Libraries are not just repositories of books and other materials, but providers of information services. Such services are provided by the library staff.

LIBRARY ATTITUDES
Attitudes, perceptions, and irrational fears often get in the way of an individual's success with library research tasks. Library skills are not something everyone learns well in elementary, junior high, or high school. It is rare, however, that an individual is unable to learn to use a library to his/her best advantage. For students with a specific learning disability, it might take a little extra time to develop library strategies that use those students' strengths and/or learning styles. But, with patience and practice, it can be done.

PRIMARY MANUAL AUDIENCE
Although most of the strategies outlined will be useful to any individual using any library, this manual has been designed specifically for students with a specific learning disability at The College of Wooster.

SECONDARY MANUAL AUDIENCE
Others who may find the manual helpful include tutors and interested professionals, librarians, friends, and families who work closely with college students with a specific learning disability. The secondary audience make up the support group of the primary audience to this manual and can help the students work through the manual.

RESEARCH BEHIND THE MANUAL
The manual utilizes learning and cognitive styles ideas obtained from the Price, Dunn, and Dunn Productivity Environmental Preference Survey.
(PEPS), Bernice McCarthy's The 4-MAT System, and the Myers-Briggs Type Indicator (MBTI). It also draws from compensation strategies suggested in the literature on adults and college students with a specific learning disability; strategies suggested in the library literature; and the specific organization, materials, and services available in Andrews Library on The College of Wooster campus.

MANUAL DESIGN

The manual was designed for easy browsing, enabling the user to locate quickly the specific parts that will be useful at a given time. There is a detailed table of contents in the front and content headings in the left column throughout the manual.

Each chapter begins with an introduction, which is often followed by detailed descriptions of various library and related issues or concepts. Frequently throughout, the manual refers to Solving the Information Puzzle: An Andrews Library Handbook. The manual is meant to supplement the library handbook, not replace it, so make sure you have a copy of the handbook. If you do not, ask for one in the Reference Office in Andrews Library. The last part of each chapter lists possible problems for adults with a specific learning disability along with several alternative approaches to those problems based on different types of learning styles.

Four appendixes in the back provide library worksheets to help you with taking notes, background information describing the characteristics of a specific learning disability, an overview of the three personality/learning styles tests used in the Developmental Learning Center, and a bibliography of recommended readings and other related sources of interest. They can be referred to at any time as sources of additional information, but are not essential to the manual as a whole.

HOW TO USE THE MANUAL

The most effective way to use the manual would be to work your way through it from beginning to end. For each chapter, read the introduction and the descriptions of the various library issues and concepts. Have on hand Solving the Information Puzzle: An Andrews Library Handbook to refer to
when suggested. Then scan the possible problems an adult with a specific learning disability might encounter. If you find a problem that describes your own situation, read the suggested approaches listed after that problem and choose one that is the most appropriate for your learning style or preference. You need not read the approaches listed under problems that do not apply to you. Make a note, either in a notebook of your choosing or in the manual, of the strategies you plan to follow. You may need to refer back to these notes later.

**PACING YOURSELF**

Work your way through the manual and its suggested strategies at your own pace. Take one chapter or part of a chapter at a time. Plan times to follow through on the suggestions in each chapter where appropriate. Ask for assistance from your tutor whenever you need help with the process, and of course ask any librarian for help when needed. Refer back to the manual whenever necessary if you are working on a new library-related project that calls upon skills you have not yet developed or that you have not had a chance to use before.

**YOUR OPINION COUNTS**

The author of this manual is interested in hearing how well this manual works for you. Therefore, after using the manual for a while, please write down any comments or criticisms you might have and send them to: Julia Gustafson, Reference Librarian, Andrews Library, The College of Wooster, Wooster, OH 44691. Individuals on campus, can drop comments off at the Reference Office or send them through campus mail. Thanks.
CHAPTER TWO:
LIBRARY ENVIRONMENT STRATEGIES
FOR SPECIFIC
PERSONALITY PREFERENCES

INTRODUCTION: A library does not always provide a perfect environment for learning. It might be very busy when quiet is needed, or too bright for those who prefer dim lighting, or too formal for those who require informal environments in which to learn. Do not let this inhibit you. The strategies listed in this chapter are designed to accommodate individual preferences of library users and will hopefully make your library trips more constructive.

Before reading the suggestions on the following pages, it will be helpful for you to know when Andrews Library is busy (noisy) and slow (quiet). Although the times listed in the chart below do change somewhat from week to week, they are fairly accurate for when the library is open.

<table>
<thead>
<tr>
<th>DAY</th>
<th>8am-1pm</th>
<th>1pm-4pm</th>
<th>4pm-7pm</th>
<th>7pm-10pm</th>
<th>10pm-midnight</th>
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<tbody>
<tr>
<td>MON</td>
<td>slow</td>
<td>busy</td>
<td>slow</td>
<td>busy</td>
<td>slow</td>
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<tr>
<td>TUE</td>
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<td>busy</td>
<td>slow</td>
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<td>slow</td>
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<tr>
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<td>busy</td>
<td>slow</td>
<td>busy</td>
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<td>busy</td>
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<td>slow</td>
<td>slow</td>
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</tr>
<tr>
<td>SAT</td>
<td>slow</td>
<td>busy</td>
<td>slow</td>
<td>slow</td>
<td>----</td>
</tr>
<tr>
<td>SUN</td>
<td>----</td>
<td>busy</td>
<td>slow</td>
<td>busy</td>
<td>slow</td>
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During high pressure times (i.e., when papers are due and when exam time comes up), the library tends to be busier for more hours during the day than during other weeks. Keep this in mind when planning your own library trips.
HOW TO USE THIS CHAPTER: Follow the guide words in the left column below and on the following pages and choose the one(s) that accurately describe you. Then read the suggested approaches in the right column. Try out the approaches that feel the most comfortable to you.

NEED QUIET

**approach 1:** Try to do most of your work during slow, quiet times.

**approach 2:** Wear ear plugs and/or work in a quiet corner of the library. Scout out several possible spots ahead of time so you know where they are when you need them. You may need to take some Reference sources out of the Reference area at times, which is alright as long as you return them to the Reference area when you are done. It would be a good idea to let a librarian know when you do so.

**approach 3:** Photocopy a lot, check materials out, and take your work to a quiet place outside the library.

**approach 4:** Ask a librarian if there is a quiet place in the library where you can do your work. Occasionally, there is a library classroom that is not in use.

NEED SOUND

**approach 1:** Try to do most of your work during busy times.

**approach 2:** Wear a walk-man turned down low with some easy-listening background music on.

**approach 3:** Photocopy whenever possible, check materials out, and take your most of work to a place outside the library with background sound that will not distract you.
NEED BRIGHT LIGHT

This is not a problem in Andrews Library, since the library is generally brightly lit.

NEED DIM LIGHT

**approach 1:** Find spots in the library that seem to be more dimly lit than most. Sometimes these can be found near a tall book stack, a structural post, a corner, or a spot near a wall.

**approach 2:** Photocopy whenever possible, check materials out, and take your most of work to a place outside the library with lighting dim enough for you to learn.

**approach 3:** Wear a hat with a brim (e.g., a baseball cap) and/or shaded glasses while doing your library work. With the variety of styles these days, it is highly unlikely such attire will call any attention to yourself.

NEED WARM OR COLD TEMPERATURE

**approach 1:** Find spots in the library that are comfortable in temperature for you. Although the library is temperature controlled, the system is imperfect, a fact which translates into the availability of areas with differing temperatures.

**approach 2:** Wear clothing that will enable you to be comfortable in the library.

NEED INFORMAL ENVIRONMENT

**approach 1:** Find spots in the library that contain stuffed chairs and/or carpeting and do your work there.

**approach 2:** Photocopy whenever possible, check materials out, and take most of your work to a place outside the library that has an environment informal enough for you to learn.
NEED INTAKE

**approach 1:** Since food or drink is not allowed in the library, try chewing gum or bringing some toothpicks to chew on.

**approach 2:** Photocopy whenever possible, check materials out, and take most of your work to a place outside the library where you can eat and/or drink. Be careful at all times to not get any food particles or drops of fluid on any library materials because they cause the materials to deteriorate.

NEED MOBILITY

**approach 1:** Break down your library work into small steps and do only one step during each of several short trips to the library.

**approach 2:** Take frequent breaks while you are doing your library work, walk around or stretch each time, then return to your work.

**approach 3:** Break down your library work into small steps and take frequent breaks between steps, walk around or stretch each time, then return to work on the next step.
CHAPTER THREE:
LEARNING LOCATIONS IN THE LIBRARY

INTRODUCTION: Learning locations in the library involves participating in a library orientation, using library signage, reading library maps, and ultimately finding where different materials, equipment, and services are available in the building.

RELATED LIBRARY SERVICES:

A-V TOURS The library provides two types of general audio-visual library orientation programs. One is a slide-tape orientation program and the other is a self-guided audio-tape tour. Both are available on request at the Audio-Visual Center on Level 2 of Andrews Library.

SLIDE-TAPE/GROUP TOURS The slide-tape program is shown to first year students during orientation week. After the slide-tape program is shown, the students are divided into small groups and given a physical tour of the building as well as some basic instruction as to where materials and services are located. Questions and answers are fielded and encouraged. If unable to attend one of these required sessions or interested in reviewing what was learned in the session, individual students may view the slide-tape orientation on their own, with peers, or with another group.

AUDIO-TAPE TOUR For students who learn best on their own, by auditory means, or by actually doing a task at hand, the audio-tape tour offers a unique opportunity to do so. This tour can be taken individually or with a small group. Each person is provided with a tape recorder, a set of headphones, and a map of Andrews Library. Then the student is instructed on how the tape recorder works.
A copy of *Solving the Information Puzzle: An Andrews Library Handbook* is provided to all new College of Wooster students. The first section in the handbook covers library hours, who the librarians are, an introduction on how to use the handbook, information on the audio-visual programs mentioned above, a library map, and several pages describing the availability and location of the various library programs and services. Some students will be required to read the handbook for their Freshman Seminars, others will not. All are advised to study it fully.

### POSSIBLE LIBRARY-RELATED PROBLEMS

**AN ADULT WITH A SPECIFIC LEARNING DISABILITY MIGHT ENCOUNTER:**

- **Problems with verbal directions** because of difficulty picking out sounds over background noise or difficulty hearing the directions accurately. This could happen during a tour or when asking for help at a public service area in the library.

**Coping Strategies:**

**DURING A GROUP TOUR:**

- **Approach:** Stay close to the librarian/tour guide. Pay close attention to the physical surroundings, materials, and equipment being shown at each point in the tour. Most of what is being shown will be obvious visually without the benefit of the auditory discussion by the librarian.

Take note on paper or in your mind, of items you do not understand. Return to examine them after
the tour. If you have questions at that point, ask someone to explain or demonstrate to you how each item works. That person could be a librarian, a peer, a professor, or a tutor, whichever you prefer as long as the individual knows the answer to the question.

ON YOUR OWN:

- **approach 1**: Ask a library staff member a directional question at a time when there is little to distract you in the immediate area.

- **approach 2**: Ask a library staff member to go with you to an area where there is less noise or distraction before asking your question.

- **approach 3**: Ask a library staff member to physically show you where the item in question is located.

problems learning the layout of the building, the locations of various services, and the locations of the branch libraries because of either short term memory or directional problems.

Coping Strategies:

**DURING A GROUP TOUR:**

- **approach**: Take notes during the tour and/or pay close attention to the physical surroundings, materials, and equipment being shown at each point in the tour. Return to the library soon after the tour, walk around, and try to find everything that you were introduced to on the tour. Ask questions about those materials, equipment, and services you can not find. This process can be done alone or with a peer. Repeat the process several times until you become familiar with the library building.

ON YOUR OWN:

- **approach 1**: Take the audio-tape tour, view the slide-tape program again, and/or read the first section of Solving the Information Puzzle: An Andrews Library Handbook. Do this alone, with a peer, with a tutor, or a combination of the three.
Then return to the library, walk around, and try to find everything that was introduced in the above materials. Make sure you wander around all five floors. Repeat the process several times until you become familiar with the library building.

- approach 2: If you learn best by doing, wander all over the library until you become familiar with the building. Ask questions about anything you do not know or understand. Ask for demonstrations on anything you want to learn how to use (i.e., microfilm and microfiche machines and the Serial Record). Do this alone or with a peer.

- problems either reading or seeing library signs or reading a library map because of a visual perceptual problem that causes difficulty in distinguishing a specific item within its surrounding background.

Coping Strategies:

DURING A GROUP TOUR:

- approach 1: Listen closely and pay close attention to the physical surroundings, materials, and equipment being shown at each point in the tour. The signs are not all that important if you are already familiar with locations in the library. Return to the library soon after the tour, walk around, and try to find everything that you were introduced to on the tour. Ask questions about those materials, equipment, and services you can not find. This process can be done alone or with a peer. Repeat as many parts of the process as necessary, until you become familiar with the library building.

- approach 2: Stay close to the librarian/tour guide so you can hear all that is said or see any demonstrations that are given. Ask questions during the tour to clarify items you miss.
ON YOUR OWN:

- **approach 1:** Whenever you need to know where something is, ask a library staff member or a peer for directions.

- **approach 2:** If you learn best by doing, wander all over the library until you become familiar with the building. Ask questions about anything you do not know or understand. Ask for demonstrations on anything you want to learn how to use (i.e., microfilm and microfiche machines and the Serial Record). Do this alone or with a peer.

- **approach 3:** Take the audio-tape tour or view the slide-tape program alone or with a peer to reinforce what you learn on your own. This can be done as many times as necessary.

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problems reading the library handbook because of visual perceptual problems.

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**Coping Strategies:**

**DEPENDING ON THE SEVERITY OF THE VISUAL PERCEPTUAL PROBLEM:**

- **approach 1:** Read it with the assistance of your tutor or a peer.

- **approach 2:** Ask someone to read it to you. It could be either a paid reader, a peer, or a tutor.

- **approach 3:** Ask someone to tape record the parts you want to read so you can listen to it on your own time.
CHAPTER FOUR:  
ASKING FOR ASSISTANCE  

INTRODUCTION:  Asking for assistance involves requesting help using reference sources, finding books in the library, finding articles in periodicals, deciding which are the appropriate materials to use, using the card catalog, using microform equipment, doing interlibrary loan, and simply finding where specific services are located.

RELATED LIBRARY SERVICES:

There are several places in Andrews Library to go to for assistance or directions. Where you go and who you talk to depends on what your needs are. All of these public service areas are described in the first few pages of Solving the Information Puzzle: An Andrews Library Handbook, as well as outlined briefly below.

CIRCULATION SERVICES

The Circulation Desk is the place to ask about policies on checking out books, periodicals, and government publications. It is where closed reserve materials and reserve lists are kept, materials needed through Interlibrary Loan are requested, and general directional questions may be asked. Since it is the most prominent of all the public services areas in the library, staff members at the Circulation Desk are trained to direct you to the best place to get answers to your questions.

REFERENCE SERVICES

Reference services include a regularly staffed Reference Desk and a Reference Office with an open door policy. Both places are where an individual can go to ask for help or assistance with finding information. Individualized appointments called Reference Consultations, as well as computer literature searches, are requested there. Instruction on how to use the OCLC Public Terminal, how Interlibrary Loan works, and how to find information in the library is given by the
Reference staff, either individually or in class groups.

GOVERNMENT PUBLICATIONS SERVICES

The Government Publications area has a separate Government Publications Reference Desk and Government Publications Office where it is appropriate to ask questions on how to find U.S. Government Publications. At the times when no one is available in the Government Publications area, questions can be answered by the staff member(s) at the Reference Desk or Reference Office.

AUDIO-VISUAL SERVICES

The Audio-Visual Center is has multiple functions. It is where publications (primarily periodicals and newspapers) on microfilm and microfiche are kept as well as where readers and printers with which to view them and copy from them are located. Assistance with these machines is available at the desk in the A-V Center. Other materials and equipment include music and language listening areas, video and film viewing areas, a selective collection of curriculum materials for teacher education students, and a great deal of audio and visual equipment available for course-related use. The services and equipment are described in the library handbook as well as on flyers available at the A-V Center desk.

LIBRARY FEARS/MYTHS

Whether or not you have learned the basics about your local library back home, you will need to learn what is unique about Andrews Library along with all your classmates. The librarians at Andrews Library understand this are there to help you "solve the information puzzle" as the title of the library handbook so clearly states. Therefore, it is senseless to expect to use the library efficiently without accepting some assistance and instruction from the librarians. That is why they are there.
POSSIBLE LIBRARY-RELATED PROBLEMS

AN ADULT WITH A SPECIFIC LEARNING DISABILITY MIGHT ENCOUNTER:

- problems gaining the courage to ask for help because of low self-confidence or self-esteem that the individual has developed related to frustrations and failures experienced in the past.

Coping Strategies:

- **approach 1:** When you are assigned a project that requires you to use the library, sign up for a Reference Consultation with a librarian and keep the appointment. Sometimes making a special appointment helps motivate people to do things they are afraid of. If you are uncomfortable going alone, bring a peer or tutor along.

- **approach 2:** If you are unreasonably afraid of asking a librarian for help, tell your tutor or a peer about this fear. Perhaps the first time you go for help you could ask your tutor or a peer to go with you for moral support. Once you get to know a librarian, your fears are likely to be lessened and you will be able to return alone or make your own appointments the next time.

- **approach 3:** Go up to a librarian at a time when you do not need help and introduce yourself. You would be surprised at how well received such an introduction will be. Once you have established this acquaintance, it will be easier for you to ask for help from someone you know rather than from a stranger.
problems asking for the appropriate information because of an inability to recall the words necessary to express what is needed.

Coping Strategies:

- approach 1: Before going to the library, think over what type of information you need for your project and write or type out your thoughts. Ask a peer or a tutor to help you think this through if you are having trouble on your own. Perhaps just brainstorming with someone will help clarify your thoughts.

Bring your notes, or even a thesis statement, along with you when you go to the library. If you are at a loss for words, get out your notes and show them to the librarian. This will give you a solid basis from which to start your discussion. Do not be embarrassed or hesitant to show your notes to the librarian. Such advanced preparation shows a lot of forethought and will be appreciated by the librarian.

- approach 2: If your project is clearly stated in an assignment sheet passed out by your professor, show that assignment sheet to the librarian when you ask for help. Students do this frequently when they are given assignments. Perhaps the librarian might even be able to help you understand better what the assignment entails.

problems with verbal directions because of difficulty picking out sounds over background noise or difficulty hearing the directions accurately.

Coping Strategies:

- approach 1: Ask the librarian if you could move away from the area where distractions are the worst. This sometimes means just a few feet or around the corner of a bookshelf.

- approach 2: Ask questions like "Could you talk a little slower?" or "Could you show me rather than just tell me?"
approach 3: Ask the librarian if s/he would watch you while you try to do the task until you are sure you understand how it is done.

approach 4: Ask the librarian to write down some of the steps for you. If there is just too much to write down, ask the librarian if you could sign up for a Reference Consultation. Then set a time for the meeting that will be quieter and less distracting for you. With this special appointment, you will receive a list of sources written out by the librarian which will give you something to look at the next time you meet.

problems remembering or sequencing accurately the instructions that are given due to short term memory or cognitive perceptual problems.

Coping Strategies:

approach 1: Take careful notes while the librarian is showing you the sources for your project. Ask the librarian to go slower if you are finding it difficult to write down fast enough what you need to know. Go over the notes with the librarian at the end of the session to make sure you have everything down correctly. You might want to rewrite or type out your notes later so they will be easier to follow when you do your library work.

approach 2: Come with a friend who will take notes for you while the two of you listen to what the librarian has to say. The librarian will probably assume that the two of you are working together on the project.

approach 3: If you prefer to work on one thing at a time, ask the librarian to show you what you need to get started. Then return when that step is completed and ask for help on the next step. Keep returning for each step of the project or until you have enough information for your project.
CHAPTER FIVE:
FINDING INFORMATION AND TAKING NOTES

INTRODUCTION: Finding information and taking notes entails using encyclopedias, handbooks, dictionaries, or factbooks to find background information on a topic; using the card catalog, periodical indexes, or other types of indexes and bibliographies to find additional sources; and deciding which sources to use once you have either found them listed or found the actual sources themselves. It also involves taking and knowing how to take careful notes. All of these skills need to be learned by most students in order to be successful in college.

RELATED LIBRARY SKILLS:

PARTS OF BOOKS

Before spending a lot of time doing library research, make sure you know how to identify each part of a book or set of books. Following is a list of book parts along with explanations of their use. Most books have one or more such parts and many have several.

<table>
<thead>
<tr>
<th>PARTS OF BOOKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>title page:</strong></td>
</tr>
<tr>
<td>Includes the author's name, publisher, place of publication, and the publication date. Frequently, the publication date is on the flip side of the title page.</td>
</tr>
<tr>
<td><strong>preface, forward, introduction:</strong></td>
</tr>
<tr>
<td>All three are used to introduce the book in some fashion. They often include a statement of the book's focus, intended audience, format, and instructions on how the book is meant to be used.</td>
</tr>
<tr>
<td><strong>table of contents:</strong></td>
</tr>
<tr>
<td>Used for identifying quickly</td>
</tr>
</tbody>
</table>
what is in the book and on which pages. It includes either brief or detailed listings of the book's contents.

**chapter headings and other headings:** Used for identifying quickly where particular information can be found within a book or chapter of a book. When a reader scans a book, headings often stand out visually.

**guide words:** Used for identifying quickly what is on a particular page. They are located at the tops of pages. Dictionaries and encyclopedias make extensive use of guide words.

**glossary:** Used as an aid in understanding the concepts discussed in the book. It normally includes a list of terms, along with definitions, of a vocabulary specific to the topic or discipline of the book.

**index:** Used as a subject guide to the book, usually including exact page numbers of where specific information is located in the book. Usually arranged alphabetically.

**bibliography:** Used as either a guide to further reading or a list of references used in researching the book.

**appendix:** Includes information important to the reader on the topic of the book, but not central to the text of the book itself. Sometimes it will include charts, graphs, or statistics.

**list of contributors:** Includes names, titles, and often short biographical notes about the authors (contributors) of the different parts of the book. Some sources do not have a separate list, but include such information with each article in the source.
Knowing how to use books effectively is half the battle when it comes to library research. Before entering a library, you can practice analyzing any book, such as a textbook or a dictionary. Check if the book has a title page, table of contents, index, and/or a glossary. This will enable you to quickly find information within the entire book, as well as look up definitions for words you do not understand.

Next, scan headings throughout the book, especially those in chapters or sections of interest to you to discover what is included in the book. Check to see if there are guide words at the tops of the pages and use them to find information. Once the skill of using guide words is mastered, it can be used with a wide variety of sources in a library.

Once you have a sense of the content of the book, it is a good idea to discover the actual scope intended by the authors. Read the preface, forward, for this information.

Use the bibliography -- footnotes, notes, or references -- to find other sources on the topic. Many books will include bibliographies either at the end of the book, or at the end of each chapter or section. Some books list "notes" at the bottom of each page. Sources like encyclopedias list references at the end of each article.

Knowledge about the authors of works can be helpful in determining whether or not there is any bias to their works. Check the list of contributors for some background information on the authors of a work. If, however, no biographical information is provided in the source, there are other ways to find biographical information. Ask a librarian for suggestions.

It is essential to take careful notes when doing library research. There are many different methods of note-taking, and in library research, different types of notes to take. Notes taken to understand textbooks, encyclopedia articles, periodical articles, books, etc. are textual notes. Notes taken when looking for more references are lists of references.
TEXTUAL NOTES When taking textual notes, it is essential to note where your information is derived. Direct quotes should be labeled as such, along with the page numbers of the sources from which they are taken. Taking notes on index cards will enable you to sort the notes by subject. Taking notes in a notebook in outline form is also effective. If it is easier for you to take notes on a typewriter or microcomputer, do so. How you take notes should depend on your own preference and organizational skills. If assistance with textual note-taking skills is needed, the Developmental Learning Center and/or the Reading/Writing Center both have useful suggestions to offer students.

TAKING NOTES OF REFERENCES When copying down lists of references, it is essential to make a note of the source (title, volume, page, subject heading) from which the information is derived. Copy down enough information on references of interest that will enable you to find them. It is very easy to copy down information incorrectly, so accurate notes will save time if you need to look something up again. Complete information on both the source and the reference is required by the library when borrowing something on interlibrary loan. Complete information on a reference is needed when compiling a project bibliography as well.

DECIDING ON A TOPIC It is best to avoid wasting a lot of time deciding on a topic. Decide as early as possible so you will have enough time to do the research. Do not waste a lot of time changing your mind.

If your professor gives you a choice of topics, your decision is simplified: just choose one of the topics and begin your research. Perhaps scanning articles in an encyclopedia on a couple different topics will help you choose one that interests you.

If you are given considerable leeway in your choice of topic, scan your textbook(s) for ideas on a topic. If you are still undecided, ask your professor for suggestions or brainstorm with your professor, a tutor, or a peer for ideas.
BEGINNING YOUR RESEARCH

Once you have established your topic, it is a good idea to obtain some background information or an overview of the topic or aspects of the topic. It is possible that your class textbook might have such an overview. If not, an encyclopedia article or a review article in a periodical might provide this background. Study the article, take notes, and use the information to help clarify what additional information you will need.

Write down a list of subject terms that you come across in the article. This list will come in useful when looking information up in other sources. Add to the list of subject terms as you go along.

INDEXING LANGUAGE

In both the card catalog and other types of indexes, the language used for the subject headings is usually a logically structured indexing language. Often, the language uses terms not used in everyday speech. Some sources, but not all, will give cross references from popular terms to the terms used in the index. There are times, however, when the cross references are not sufficient for your needs. This is why making a list of subject terms from your background reading is helpful.

SUBJECT THESAURUS

Some indexes, including the card catalog, are accompanied by a thesaurus of subject terms to help identify which subject heading(s) to use. A thesaurus usually gives cross references from popular terms to appropriate terms, as well as listing appropriate subject headings.

LIBRARY OF CONGRESS SUBJECT HEADINGS

Subject headings in the card catalog are taken from a thesaurus called the Library of Congress Subject Headings books. There are copies of this set of two big, red books on the long tables on either side of the card catalog. Instructions on how these books work are in the section on the card catalog in Solving the Information Puzzle: An Andrews Library Handbook. It is essential to learn how to use this thesaurus because the card catalog itself has very few cross references in it. The cross references are in the thesaurus.
PROPER NAMES

One exception to the rule is that proper names, which are not listed in the thesaurus, are used as subject headings in the card catalog. There are too many proper names in existence to fit them all into a two-volume thesaurus.

USING THE CARD CATALOG

The card catalog in Andrews Library combines authors, titles, and subjects in one alphabetical sequence. It lists references to books, phonorecords, tapes, some curriculum materials for teacher education students, annuals, some publications in microform, state documents, international documents, and a very small number of U.S. government publications. It does not include references to essays in books, articles in periodicals, titles of periodicals, or the majority of the U.S. government publications owned by the library. Other indexes need to be used to find these additional sources.

An explanation as to how to read a catalog card, card catalog filing rules, and parts of a catalog card are explained clearly in Solving the Information Puzzle: An Andrews Library Handbook in the section on the card catalog.

CARD CATALOG SEARCH STRATEGY

A useful search strategy hint is the fact that subject headings for a book are listed at the bottom of most catalog cards, particularly the author cards. If you find a book listed in an encyclopedia article for example, look that book up in the card catalog. If you find it, copy down the subject headings at the bottom of the author card. Then look under those subject headings in the catalog for more books on your topic.

PERIODICALS

Magazines, journals, serials, and periodicals are terms that are often used interchangeably. At other times, the terms are given specific meanings:

- **magazine** — a popular publication such as Ms., Psychology Today, and Sports Illustrated, that is published in sequence at regular intervals;
- **journal** — a scholarly publication with a
specialized focus that is published in sequence at regular intervals;

serial -- any publication that is published in sequence at either regular or irregular intervals. This includes both magazines and journals as well as annuals, biennials, newspapers, and other serials of varied frequencies;

periodical -- a publication, such as a magazine or journal, that is published in sequence at regular intervals.

ARTICLES IN PERIODICALS

Articles in periodicals are an important supplement, or at times substitute, to information found in books. They are usually shorter and more condensed than books, and therefore will take less time to read if time is scarce. Recent issues may contain information that is too current to yet be published in books, providing the reader with some of the most up-to-date information available. In general, periodicals contain some of the quickest, most efficient information available to the reader.

FINDING PERIODICAL ARTICLES

Since thousands of periodicals are published each year, an efficient method for finding appropriate articles in periodicals is provided through the use of periodical indexes. Periodical indexes list articles in several periodicals at once by subject and sometimes by author. The complete references to articles are given. Instructions on how periodical indexes work and what the references they provide look like is given in the section on "Finding Articles in Periodicals" in Solving the Information Puzzle: An Andrews Library Handbook.

Indexes are published regularly in the same fashion as periodicals, in order to provide up-to-date listings of articles in the thousands of available periodicals. Periodical indexes each have a special focus, such as a specific discipline (e.g., Art Index), a group of disciplines (e.g., Humanities Index), or a type of periodical such as popular magazines (e.g., Readers' Guide to Periodical Literature). Some
index only specific parts of magazines, such as books reviews (e.g., Book Review Index) and biographies (e.g., Biography Index). The topic of your project will help you decide which index or indexes to use.

If you would like to know about the available indexes, ask a librarian which index or indexes would help the most. If a librarian is not available, check the Index & Abstract Locator. Copies of this printout are located at the Reference Desk, the Circulation Desk, and on an index table in the Government Publications area on Level 3 of Andrews Library.

When taking notes from periodical indexes, you might find it helpful to use the "PERIODICAL INDEXES WORKSHEET" or "PERIODICAL INDEXES FLOW CHART / WORK SHEET." They are located in the "APPENDIX: WORKSHEETS" at the back of this manual.

FINDING PERIODICALS ON THE SHELVES

Once you have a list of periodical articles, you will need to determine whether or not Andrews Library owns the periodicals you want. The Andrews Library Serial Record lists all the periodicals and newspapers the library owns. There are instructions on "Using the Serial Record" in Solving the Information Puzzle: An Andrews Library Handbook. If the periodical is listed in the Serial Record, it will list what volumes the library has and where the volumes will be located. Questions about finding periodicals should be brought to a library staff member.

USING NEWSPAPER INDEXES

Newspaper indexes are similar to periodical indexes except for one main difference — they usually index issues of only one newspaper. Andrews Library owns four major newspaper indexes along with microfilm backfiles of those newspapers: The New York Times Index, The Times Index (London), The Wall Street Journal Index, and The Washington Post Index.

There is a section on "Newspaper Indexes" in Solving the Information Puzzle: An Andrews Library Handbook that might be helpful. There is also a handout on the library guides rack in the Reference Area of Andrews Library on how to use
newspaper indexes. The worksheets called "NEWSPAPER INDEXES WORKSHEET" and "NEWSPAPER INDEXES FLOW CHART / WORKSHEET" could be used when taking reference notes from newspaper indexes. They are located in the "APPENDIX: WORKSHEETS" at the back of this manual.

DECIDING WHAT TO READ

One of the most challenging, and at times frustrating, aspects of library research is deciding which books and periodical articles to read. When scanning through periodical indexes or flipping through cards in the card catalog, it is sometimes difficult to determine which titles are the most appropriate for a topic.

Many authors create titles using somewhat ambiguous terms or topic-specific slang. It is a good idea to anticipate this possible problem by first reading an overview article in an encyclopedia or handbook as described above in the section "BEGINNING YOUR RESEARCH." Then you will go to the card catalog and periodical indexes with some background to both the topic and the language of the topic.

When a topic produces too many relevant references for the reader to read, it is a good idea to set some reasonable limits. One limit might be by publication date, another could be the reading difficulty of the source, still another could be the number of sources the reader has time to read. Usually it is a good idea to choose a few more sources that you can actually read, then go to the shelf and compare them before making a choice. This is where your skills for using a book properly will come in useful.

When making your decision on what to read, keep the following questions in mind:

<table>
<thead>
<tr>
<th>QUESTIONS TO HELP DECIDE WHICH SOURCES TO READ</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO? Who is the author of the source? Is s/he qualified to write authoritatively on the topic?</td>
</tr>
<tr>
<td>WHAT? What type of information does the source contain? Does it answer any of</td>
</tr>
</tbody>
</table>
the questions you have about the topic?

**WHERE?** Where, geographically, is the audience for whom the source is intended or is this even a factor? Some sources are written for and about a specific region or country and are useless or irrelevant to those outside that area.

**WHEN?** When was the source published? Is it recent enough to be accurate and up-to-date?

**WHY?** Why choose this source over another? Does it meet your needs better than the other sources on your list?

**HOW?** How will the source help you attain your project goals? Does it contain needed information, statistical data, theory, etc. to help you complete your project?

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**FINDING OTHER INFORMATION**
There are other types of sources discussed in *Solving the Information Puzzle: An Andrews Library Handbook* that might help as well. It would be a good idea to study the handbook carefully and ask a librarian any questions about the sources discussed. Ask a librarian if there are additional reference sources available on your topic as well.

**USING YOUR LIBRARIAN**
The sign of an experienced library user is one who knows enough to ask for help when necessary. The chapter in this manual on "Asking for Assistance" covers any problems an individual might encounter asking for help.
POSSIBLE LIBRARY-RELATED PROBLEMS

AN ADULT WITH A SPECIFIC LEARNING DISABILITY MIGHT ENCOUNTER:

- problems reading and looking information up alphabetically in reference sources, indexes, and the card catalog because of visual perceptual problems that cause the individual to see letters or words reversed or an inability to distinguish between letters that look similar (i.e., d and b, c and e, v and u).

USING REFERENCE SOURCES, INDEXES, AND OTHER BOOKS:

Cooperative Strategies:

- **approach 1:** Take time out on a regular basis to practice using books effectively as described earlier in this chapter. Using guide words in such sources as dictionaries and encyclopedias and using indexes in your textbooks give you some especially good practice. If you have troubles with guide words, ask a tutor for help. This practice will make looking information up alphabetically in indexes and other sources easier.

  When you go to the library to look information up, make sure to allot enough time so you do not feel rushed.

- **approach 2:** If your visual perceptual problem is severe enough to render it impossible for you to physically look information up, bring along a willing peer, a tutor, or a paid reader to serve as your eyes. That individual can read the appropriate parts aloud and you can choose what you need.

- **approach 3:** Ask a librarian to show you how to find what you need within a source. This includes
articles in encyclopedias and other reference sources as well as subject headings in indexes. Ask the librarian to stay while you try looking it up yourself. This is a particularly good strategy with periodical indexes since you will need to look in several volumes of the same index. Return later to the librarian if you need something clarified.

USING THE CARD CATALOG

Coping Strategies:

1. **approach 1:** Before approaching the card catalog, write down a list of terms related to your topic. These terms can be derived from brainstorming, readings in a class textbook, review article(s) in an encyclopedia or other source, or a combination of all three.

Take the list of terms over to the Library of Congress Subject Headings books next to the card catalog and use them to help you find appropriate subject headings in the books. Look up as many subject headings in the subject headings books as you think may be relevant to your topic. Remember that proper names are an exception and will not, in the majority of cases, be found in the subject headings books, but are used in the card catalog as subject headings. Perhaps using the LIBRARY OF CONGRESS SUBJECT HEADINGS WORKSHEET or the CARD CATALOG FLOW CHART / WORKSHEET will help you with this process. They are located in the "APPENDIX: WORKSHEETS" at the back of this manual. Or design a similar worksheet to use for the task.

When copying down a subject heading from the Library of Congress Subject Headings books, take a little extra time and scan several headings that come before and after the one you chose. If necessary, make a note of them. Otherwise, try to remember them. Then, when at the card catalog, you will have a better idea what headings come before and after the one you want in the catalog drawers.

The card catalog drawers will have beginning and ending guide words on the front of each drawer. Try to use these as you would guide words in a dictionary. If still unsure which drawer to pull, take out about two or three drawers in the general
area and scan them all. Keep them in order by number since each drawer is numbered on the front as well. If your heading is not in the drawers you pulled, put them back and try the ones before or after them.

For quick scanning in a catalog drawer, note that there are several raised guide cards in the drawers with subject headings on them. Use them in the same way as guide words in a dictionary. Not all subject headings have raised guide cards, however, so flip through the cards themselves as well. Take your time with this process so as not to miss the heading you need. There is always the possibility that the heading you want is not used in the Andrews Library card catalog, so do not be too discouraged if you do not find it. Just try another heading. If you are sure you must have missed it, ask a librarian or a peer to help locate it.

Once an appropriate subject heading is located, flip through the cards one by one. Scan the author, title, and publication date of each source. Does the title sound relevant? Have you come across the author in your previous reading? Is the publication date recent enough? For each source you think is relevant, copy down the author, title, publication date, and call number. It is alright to abbreviate on all but the call number.

If the endings of several call numbers vary only slightly, just copy down a few call numbers and find those books on the shelves. Then browse the shelves where those books are located. Several other books on the same or similar topic may be shelved there as well. Keep in mind, however, that some topics are interdisciplinary and will require you to look in several call number areas. Determine this by scanning all the cards under your chosen subject headings and noting the call number areas that are given.

**approach 2:** Follow the instructions in approach 1, except ask a peer, your tutor, or a librarian to help you with the process. Your "helper" can take turns with you until you are able to handle the process on your own. Or, perhaps you just need that individual to be there for moral support. Once you become familiar with the process, you probably will no longer need to use this
approach again unless you are away from the library for a long time and your skills become rusty.

Remember, card catalogs are sometimes confusing and librarians expect questions about them.

- **approach 3**: If your visual perceptual problem is severe enough to render it impossible for you to physically look sources up in the card catalog, bring along a willing peer, a tutor, or a paid reader to serve as your eyes. That individual can read the appropriate parts aloud and you can choose what you need. Just follow the steps outlined in approach 1 with your reader's assistance.
problems choosing relevant references from a list of references in an index or from cards listed under a specific heading in the card catalog due to poor comprehension skills, limited vocabulary, and/or an inability to understand or grasp meanings implied in the titles of the listed sources, particularly when there is a subtle inference or when slang is used.

Coping Strategies:

1. Approach 1: Divide your information search into steps.

Before looking anything up in the card catalog or a periodical index, read some background information on your topic. This could be in the form of an encyclopedia article, a chapter in a textbook, or some other review article. Make a list of terms related to your topic, be sure to include terms that are unique to the topic. Look up any terms you do not understand in a dictionary.

Go to a periodical index, find an appropriate subject heading in the index with the help of your subject terms list, look through the list of references under the heading, and choose one or two articles that seem to be about your topic. There are times when article titles are ambiguous, but often there are titles that obviously describe a topic and will be hard to miss.

Find, read, and take careful notes on the articles. Add any terms to your subject list that might help you choose more references. Look up any terms you do not understand in a dictionary before looking up more references. Next, return to the library to look up a couple more articles or books, keeping your subject term list with you as a guide to the "language" of your topic. Find, read, and take careful notes on the articles or books. Keep repeating this process until you have enough information to do your project.

If you are unable to find a periodical article at first, try finding one book to get you started in the process.
By doing your library research in small steps, and studying the materials you find in between the steps, you will gradually gain a better understanding of the topic and will be able to choose your later references more wisely.

**Approach 2:** Follow the same steps as in approach 1, except work with a peer, tutor, or librarian when making your choice of references the first time or two. When looking under a subject heading in an index, discuss with your helper which references seem appropriate and why. If the helper does not agree, ask why. Talk about it until you are satisfied, make a decision on the reference, then look down the list for another.

Limit yourself to one, two, or three references during each library trip depending on the size of the project. Each time you return, you will become better at the process. There will probably come a time when you will feel comfortable enough to look up references on your own.

**Problems Identifying or Grasping the Important Points in a Chapter, Section, or Review Article in an Encyclopedia, Handbook, etc.,** due to underdeveloped comprehension skills, limited vocabulary, and/or an inability to understand or grasp meaning of the text in the sources.

**Coping Strategies:**

**Approach 1:** Use some of the strategies discussed earlier in this chapter on "Using Books Effectively" to scan the source. Look for highlighted headings, an article abstract, chapter summary, or a section on conclusions and read those first.

Once you have some idea of what the source is about, write down some questions you think the source will answer. Then read the source, taking notes as you go along. When you take notes, write down in your own words what you believe the author is saying. It is a good idea to write your notes in complete sentences so you understand what was written when reviewing them later. This method of summary forces you to think critically about what
was read. An outline form might be a useful way to organize your notes as they are taken.

Next, read the questions you wrote down about the source and see if you can find the answers in your notes. Then review your notes.

- **approach 2:** Take notes in the same way as described in approach 1. When you are done, go back and put all the main ideas in a chart format that will display the information in an understandable way. Perhaps you might compare notes from more than one article or source in a chart format. This process of charting will force you to identify the main points of the articles or sources.

- **approach 3:** Photocopy or check out the source and take it to a place where you can study in private. Scan the source as described earlier in this chapter in the section on "USING BOOKS EFFECTIVELY." Read the source a section or paragraph at a time either aloud or quietly to yourself. Summarize verbally into a tape recorder each part you finish reading. When you finish reading and summarizing the source, play back your verbal notes on the tape recorder for a review. Then transcribe your notes on a typewriter or personal computer so you will have a hard copy of them for later referral.

**Coping Strategies:**

- **approach 1:** Photocopy or check out as many of the materials you need as possible. Take notes by talking into a tape recorder. Either transcribe your notes on a typewriter or personal computer yourself or ask someone to do so for you. You may need to hire someone to do so.

- **approach 2:** When taking notes of references to find in the library, bring a peer or paid reader to take down the notes you choose. Later, when you find the necessary sources, write down the
complete references of those sources on a typewriter or personal computer.

- **Approach 3:** When taking notes of references to find in the library, use one of the specially designed worksheets in the "APPENDIX: WORKSHEETS" at the back of this manual. Or design a similar worksheet on lined notebook paper that suits you better. Taking notes on lined paper will help you keep them organized and readable. Be very careful and deliberate when taking down notes. Proofread each note taken to make sure you will be able to read it later. Be particularly careful to copy call numbers, periodical titles, and volume, issue, and page numbers down correctly or you will waste a lot of time.
CHAPTER SIX:
UNDERSTANDING CALL NUMBER SYMBOLS AND FINDING SOURCES

INTRODUCTION: Understanding call number symbols and finding sources involve understanding the Library of Congress, Dewey Decimal, and Superintendent of Documents classification systems (call number systems), all of which are used in Andrews Library. They involve learning about other special location symbols as well. Included with understanding the systems is using them to find materials in the library.

RELATED LIBRARY CONCEPTS:

CALL NUMBERS A call number is assigned to each book, periodical, or other material in the library. It indicates exactly where that item is located. No two items are assigned the same call number, so a call number serves as an unique address to a specific item.

CLASSIFICATION SYSTEM Call numbers are arranged by a classification system in a specially designed order. Both the Library of Congress and the Dewey Decimal classification systems are designed to put materials in order by subject. The Superintendent of Documents classification system arranges U. S. government publications in order by the agency of the government that publishes the items.

LIBRARY OF CONGRESS CLASSIFICATION SYSTEM The majority of the books and periodicals in Andrews Library are arranged in order by the Library of Congress call numbers. These call numbers are described in detail in the section on "Call Numbers" in Solving the Information Puzzle: An Andrews Library Handbook. Study that section and ask a librarian questions if you do not understand the call numbers system. A condensed outline of the classification system subject areas are on the outside back cover of the library handbook as well.
There is a small collection of Andrews Library materials that still have Dewey Decimal call numbers. This "Dewey Collection" is located in an open stack area on Level 1 of the library. A few Dewey books are also in some special collections in the library. Ask a librarian if you need access to any of the special collections.

Dewey call numbers begin with a whole number, continue with a decimal point, then decimal numbers followed by letters and possibly more decimal numbers. Below is a sample Dewey call number.

378.43
L27

There is a large collection of U. S. government publications located on Levels 3 and 1 of Andrews Library. A description of how the Superintendent of Documents numbers work is in the section on "Call Numbers" in Solving the Information Puzzle: An Andrews Library Handbook. A librarian can answer any questions you might have about these numbers.

Andrews Library has assigned special location symbols to some materials in addition to call numbers. Materials labeled with call numbers and no special location symbols are located in the open book stack sections in the library. These sections are shown on the maps in the library handbook and the maps on the library guides rack in the Reference area.

Special location symbols are usually listed before a call number, but are in some cases listed after a call number. They include "ref." for the Reference shelves on Level 3, "PER" for the bound periodical shelves on Level 4, "OVERSIZE" for the oversize shelves on Level 1, "n.r.w." or "n.r.j." for items in the Notestein Collection on Level 2 in a separate special collections room, and "BIOLOGY" for the Biology Library in Mateer Hall.

A complete list of such symbols is located on inside back cover of Solving the Information.
Puzzle: An Andrews Library Handbook, on a separate sheet on the library guides rack in the Reference area, and on one of the bookmarks available at the Circulation Desk.

POSSIBLE LIBRARY-RELATED PROBLEMS

AN ADULT WITH A SPECIFIC LEARNING DISABILITY MIGHT ENCOUNTER:

- Problems with understanding the decimal system which is necessary to know in order to understand the Library of Congress and Dewey call numbers because of underdeveloped mathematical reasoning.

OR

- Problems with alphabetical and numerical sequences that are necessary to be able to distinguish in order to use call numbers because of visual perceptual problems that cause the individual to see letters or numbers reversed or an inability to distinguish between letters and numbers that look similar (i.e., d and b, c and e, 3 and 8, 6 and 9).

Coping Strategies:

- Approach 1: Before going to the library or studying call numbers, get some help with basic mathematical concepts in the Developmental Learning Center in Holden Hall and/or the Math Center in Taylor Hall. Focus especially on the decimal system and how it works and on placing numbers in sequential order (both whole numbers and decimal numbers). Do some drill and practice
with decimal numbers until you understand how they work. Then proceed to one of the following approaches.

- **approach 2:** If your problem is with reading letters correctly, type a copy of the alphabet in all capital letters on an index card as shown below. This can be used as a handy visual aid when necessary. Carry the index card with you when you go to the shelves looking for items on the shelf. Refer to it as needed.

```
ABCDEF
GHIL
JKLMNOP
QRSTUVWXYZ
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- **approach 3:** Study the early part of this chapter and the section on "Call Numbers" in **Solving the Information Puzzle: An Andrews Library Handbook**. Then go to a shelf in the open book stack area and study closely the call number arrangement of the books on the shelves. Write down the complete call numbers of any books whose order on the shelf you do not understand. Make sure you also write down the call number before it and after it. Take these call numbers to a librarian or to someone you know who understands call number order. Ask that individual to explain it to you. Repeat this process as many times as it takes for you to understand call number order.

- **approach 4:** Study the early part of this chapter and the section on "Call Numbers" in **Solving the Information Puzzle: An Andrews Library Handbook**. Then take a stack of 3" x 5" index cards, go to a shelf in the open book stack area, and copy down thirty or more complete call numbers in the order in which they fall on the shelves. Shuffle the cards, try to put them in order, and compare the order to the books on the shelf. Keep trying this process until you get it right. If you ever have any questions about the order of your cards/call numbers, take your stack of cards to a librarian.
or to someone you know who understands call number order. Ask that individual to explain parts that confuse you. Repeat this process as many times as it takes for you to understand call numbers. As a point of interest, library staff members who shelve books are often trained with this index card/call number approach.

**approach 5:** Ask a peer, tutor, or librarian to help you with either approach 3 or 4.

**approach 6:** When copying down call numbers from the card catalog, *Serial Record*, or bibliography passed out by a librarian, remember that call numbers put books in order by subject. Copy down the title, publication date, and/or the volume/issue/page numbers where appropriate. When you get to the shelf where the beginning part of the call number is located, and as you scan the shelves further for the numbers that put you closer to your call number, scan the spines of the books for the title or other identifying information may help you find the source before you notice the exact order of the call number on the shelf. You can also browse the shelves in that general area to find other books on the same or similar topic.

This process, although a helpful short-cut, might cause you to miss a source that you truly need. So use it with caution. If you can not find a particular source, ask a library staff member to go to the shelf with you to find it.
problems comprehending that special location symbols (i.e., "PER" for bound periodical, "ref." for reference area "n.r.w." for Notestein Collection), when attached to call numbers, are separate locational designations, but do not change the significance of the call number itself, because of inability to distinguish parts of the call number as being separate. An analogy of this would be, when spelling words, some individuals do not understand the concept of root words, suffixes, and prefixes and see words as whole units. When they try to spell "home" and "homework," they do not understand that homework is actually "work" at "home." They see it as a separate concept from home.

Coping Strategies:

- **approach 1:** Study the part in this chapter on "SPECIAL LOCATION SYMBOLS" along with the parts of Solving the Information Puzzle: An Andrews Library Handbook on "Call Numbers" and "SYMBOLS AND ABBREVIATIONS USED IN THE CARD CATALOG AND SERIAL RECORD." Go to the Circulation Desk at Andrews Library and pick up one of the bookmarks that has the special location symbols on it. Find some of the places in the library that those symbols describe. If you are not sure where to look, ask a librarian about them. Some will be special collections that a librarian will have to take you to. Others will be open stack areas.

  You might want to stick to the open stack areas for this exercise, unless there is a special collection you are interested in seeing. The special collections are described in the section of the library handbook called "SPECIAL COLLECTIONS OWNED BY ANDREWS."

  When you arrive at one of the special areas, go up to the books or periodicals and look at the call numbers on the spine. Notice the special location symbol either above or below the call numbers.

- **approach 2:** When you look information up in the library, make sure you have one of the following three items with you: a bookmark from the Circulation Desk with "Special Location Symbols" listed on it, the library guide sheet from the Reference area with "SYMBOLS AND ABBREVIATIONS USED IN THE CARD CATALOG AND SERIAL RECORD" listed on it, or the inside cover of your library.
handbook with the list of symbols on it. When you copy down call numbers of items you are interested in, compare your list of call numbers with a list of symbols to see if there are any in your call numbers. If yes, go to that section of the library, then look for your call number.

- **Approach 3:** Whenever you are in doubt about where something is located, go up to a library staff member or a peer, show them the call number in question, and ask where it is located. If you do not understand the directions given, ask if that individual could show you rather than just tell you.

**Problems finding where the materials (call numbers) are located in the building because of directional difficulties.**

**Coping Strategies:**

- **Approach 1:** Spend time in the library, before you are required to for a class, and wander all over the library. Walk up and down the book stacks on all five floors. Browse any books you want. Pay close attention to the call numbers on the spines of the books wherever you go. Also notice the call letters at the end of the stacks. The more familiar you become with locations in the library and on which floor the different call number sections are located, the easier it will be for you to understand directions. Do this as frequently as you have time for so you will feel more comfortable when you need to use the library.

- **Approach 2:** Study one of the Andrews Library maps. Try to find all the call number areas shown on the maps. Ask for assistance when you can not find a specific call number area you are interested in.

- **Approach 3:** Each time you come across a call number that is difficult for you to find, ask a library staff member or a peer to show you where it is rather than tell you where it is. After having done this a few times, you will probably begin to find materials on your own.
CHAPTER SEVEN:
DEVELOPING AN EFFICIENT LIBRARY SEARCH STRATEGY

INTRODUCTION: Developing an efficient library search strategy involves refining a topic as you go along. It entails establishing what information one already has on a given topic and determining what and approximately how much information is needed to complete the project at hand. It involves deciding which reference sources to use to find the needed information and which order to use them in. During the process, knowing when to seek help and determining when and if more information is needed are also important.

RELATED LIBRARY RESEARCH SKILLS:

THE LIBRARY SEARCH STRATEGY

The research process begins with an idea -- your topic. It then moves on to several stages of information gathering interspersed with critical thought and evaluation of the information. The final product is your completed project.

Although each part of the process is intertwined with other parts, most people find the process easier to undertake when it is broken down into steps. These steps are often referred to as a library search strategy or a research strategy.

DETERMINING INFORMATION ON HAND

Before starting an information search, it is a good idea to determine if you already have some information on your topic in your possession. Does one of your textbooks -- a paragraph, section, chapter, or the entire book -- contain some valuable information? Are there any other useful sources in your possession? Is there an expert on the topic on campus or in the area who might be willing to share some insights?
GATHERING BACKGROUND INFORMATION

If the answer is yes to any of the above questions, follow through by reading and taking notes on the written material and interviewing an expert on the topic. If you ask ahead of time, some individuals might allow you to tape record your conversation. Be sensitive to their wishes in this area.

Gathering background information will help you clarify and refine your topic as you go along. It will also help you to gain a better understanding of the "language" of the topic as described in the chapter on "FINDING INFORMATION AND TAKING NOTES."

If you do not have any background information on your topic in your possession, it can be obtained from an encyclopedia, handbook, or periodical articles in the library. If you are unsure which encyclopedia to use, consult the list of "ENCYCLOPEDIAS" in Solving the Information Puzzle: An Andrews Library Handbook or ask a librarian for suggestions.

REFINING YOUR TOPIC

It is not uncommon to choose a topic that is too narrow or too broad in scope to manage effectively for a given project. This does not make it necessary to change topics. It does, however, require you to refine the topic to some extent. By choosing one specific aspect of a topic or by broadening a topic to include a related, general aspect of the subject, you can stick to your original intent as well as manage the project better.

To refine a topic, one needs to think it through carefully. It often helps to write down some thoughts on the topic. Any background information you can find on the topic will be of great assistance in this process. Filling out the "TOPIC DESCRIPTION WORKSHEET" in the "APPENDIX: WORKSHEETS," or a similar form of your own design, might be a useful exercise to get you started. It is likely that, as you gather more and more information, it will become necessary to refine the topic even more.
Determining Needed Information and Where to Search for It

Once a topic is refined, it will become easier to determine what information is needed to complete the project. Along with this, you will need to determine where to look for that information. To do so, use the following questions and suggestions as a guideline:

1. **What Types of Information Sources Are Needed to the Project?**

   a. **Books?** Check the CARD CATALOG.

   b. **Periodical articles?** Consult several volumes of at least one PERIODICAL INDEX. Decide which periodical index is appropriate. There are a few of the most popularly used periodical indexes listed in the section "FINDING ARTICLES IN PERIODICALS" in Solving the Information Puzzle: An Andrews Library Handbook. Other indexes are listed in copies the Andrews Library "Index and Abstract Locator" located at the Reference Desk, the Circulation Desk, and in the Government Publications area. Or ask a librarian for suggestions.

   (1) For **scholarly articles**, consult a periodical index that covers the subject discipline of your research.

   (2) For **current news articles**, consult a periodical index that covers general current events articles in popular magazines. For articles too recent to be indexed, consult current issues of some magazines themselves. Ask a librarian for suggested titles if none come to mind.

   c. **Newspaper articles?** Consult a NEWSPAPER INDEX, Newsbank (ask a librarian to show you this easy to use collection), or current issues of newspapers that are too recent to be indexed.

   d. **Biographical information?** Read a biography or autobiography either in the form of an article or an entire book. There are INDEXES TO BIOGRAPHICAL ARTICLES in the Reference area, as well as DICTIONARIES OF BIOGRAPHY. Just ask a librarian
to show them to you. Otherwise, consult the CARD CATALOG for a biography.

e. **Statistics?** CONSULT A LIBRARIAN. There are many different types of sources that contain statistical information. Therefore, asking a librarian will save you time and frustration.

f. **Maps or Atlases?** CONSULT A LIBRARIAN to save time. There are many different types of maps and atlases in existence. Some are found with or within disciplinary sources, some on an atlas case in the Reference area, some in the "ref. G" call number section in the Reference stacks, some are included in general sources such as encyclopedias, some are in U. S. government publications, and others are in sources throughout the library collection. A lot depends on what is needed as to where a particular map will be located.

g. **U.S. Government Publications?** Consult a SPECIALIZED GOVERNMENT PUBLICATION INDEX. For the most part, U. S. government publications are NOT listed in the card catalog. Such indexes work very much like periodical indexes. If you need assistance with this, a librarian will be more than happy to help you.

h. **Other?** CONSULT A LIBRARIAN.

2. **HOW MUCH INFORMATION IS NEEDED? IS THE PROJECT LENGTHY OR SHORT? HOW MUCH TIME DO YOU HAVE TO DO THE PROJECT?** The answer to these questions should help you decide whether you need a lot of information or a little. For instance, if you have very little time to do a three-page paper, it would be a good idea to obtain your information from a few periodical articles. The periodical articles will be shorter, more concise, and in some cases more up-to-date than whole books on a topic.

3. **WILL MORE BACKGROUND INFORMATION ON SOME ASPECTS OF THE TOPIC BE NEEDED?** Perhaps you will run across a term or concept you do not understand during the process of doing research. It will then be necessary to consult an encyclopedia, dictionary, or other factbook. Therefore, it might be a good idea to scout out such sources ahead of time so you can find them quickly when necessary.
DETERMINING LATER INFORMATION NEEDS

There may come a time when you are part way through or almost to the end of your project, and you discover that more information is needed to answer a specific question or to complete the project. This means that you will need to return to the library to look for the necessary information. It is important to plan for such impromptu library trips because you will not know ahead of time when they might be necessary.

KNOWING WHEN TO SEEK HELP

It is rare that beginning library researchers, and sometimes even experienced searchers, will know all the available sources to check for their library research. In fact, many do not even know where to begin. If this seems to describe your situation, seek help from a librarian.

If all you need is a little information, stop and ask a librarian at the Reference Desk or in the Reference Office. If your project is more involved, sign up for a Reference Consultation. Anyone can request a Reference Consultation at the Reference Desk or Reference Office. The library staff suggests that you fill out your request form at the Developmental Learning Center before coming to the library. Provided to the Developmental Learning Center is a special form to accompany the request form. It is designed to help the library staff work with your particular learning strengths. If you bring this completed form, your time with a librarian will be more effectively spent.

PUTTING YOUR SEARCH STRATEGY TOGETHER

The process of formulating a search strategy as discussed in this chapter can be difficult for a beginner. The flow chart on "DEVELOPING AND INFO SEARCH STRATEGY" in Solving the Information Puzzle: An Andrews Library Handbook might be a useful guide for this process. There are several different kinds of worksheets in the "APPENDIX: WORKSHEETS" that might help you with the process: a "TOPIC DESCRIPTION WORKSHEET," a "LIBRARY PATHFINDER" form, two "BLANK FLOW CHART / WORKSHEET" forms, and any of the other worksheets that you think would be helpful. Or you could design a worksheet of your own.
When you meet with a librarian for a Reference Consultation, you will receive either a handwritten or typewritten list of references at the end of the session. It would be a good idea to sit down to set a priority as to which of these sources are the most important to consult and in which order. It is likely that the librarian will have covered this during the consultation session and would be more than happy to review it with you a second or third time, if you would find it helpful. Otherwise, you might prefer to do this on your own or with your tutor.

POSSIBLE LIBRARY-RELATED PROBLEMS

AN ADULT WITH A SPECIFIC LEARNING DISABILITY MIGHT ENCOUNTER:

- problems with identifying, organizing, and establishing goals and objectives for a library search strategy because of a cognitive problem that makes it difficult to sequence things in a logical order.

OR

- problems understanding the research process and reference sources that may have been discussed in a library lecture because of an auditory or a visual perceptual problem.

Coping Strategies:

- approach 1: Sign up for a Reference Consultation with a librarian. Follow the librarian's suggestions as discussed in your meeting and outlined on the list of references s/he gives to
you at the end of the session. Make sure you ask the librarian as many questions necessary during the session. Sit down alone or with a tutor afterwards to go over what you have learned. Rewrite or type the list of references in whatever form will help you work with it. Perhaps use some of the worksheets in the "APPENDIX: WORKSHEETS" to help with this process. Get started on your library research. Ask for help at any point where you are confused or stuck.

- **approach 2:** Sign up for a Reference Consultation as in approach 1, but bring a peer or a tutor with you. Most librarians will be happy to talk to more than one person at a time. The two of you should ask as many questions necessary during the session. Meet with the peer and/or the tutor afterward and discuss the session. Ask the peer or tutor to help you in the library when you actually do the research, particularly with the aspects of the process that confuse you the most.

- **approach 3:** Sign up for a Reference Consultation as described in approach 1 or 2. Make sure, as the librarian shows you the sources, that you have an opportunity to look something up in them yourself. If the librarian seems to be going to fast, ask if s/he will take it a little slower and let you get the hands-on experience you need. The librarian is likely to be more than happy to cooperate in this manner.

- **approach 4:** If you are past the beginning stage and feel somewhat confident with your knowledge of the sources needed for your project, you can design a search strategy on your own. The sources listed in Solving the Information Puzzle: An Andrews Library Handbook can be used successfully for many topics. Or perhaps you have a handout or bibliography given out by a librarian at a library lecture. Consult the earlier part of this chapter and/or the flow chart in the library handbook on "DEVELOPING AN INFO SEARCH STRATEGY" while designing your search strategy. Use one or more of the worksheets in the "APPENDIX: WORKSHEETS" to help you organize your strategy, or design a similar worksheet to your own liking. The "LIBRARY PATHFINDER" worksheet or one of the two "BLANK FLOW CHART / WORKSHEET" forms may be particularly useful in this case. This process can be done alone or with a tutor. If you have any
problems during your research, be sure to tell a librarian what you have covered and ask for other suggestions.
CHAPTER EIGHT:
ALLOWING ENOUGH TIME FOR LIBRARY RESEARCH

INTRODUCTION: Allowing enough time for library research involves learning how to estimate the length of time needed for library research, scheduling time to do it, and keeping to that schedule. Included in this time-management process is planning, making, and carrying out special appointments (reference consultations) with librarians as needed for each specific library-related project.

POSSIBLE LIBRARY-RELATED PROBLEMS

AN ADULT WITH A SPECIFIC LEARNING DISABILITY MIGHT ENCOUNTER:

- problems with organizing and budgeting time.

Coping Strategies:

- approach 1: When you chart out your semester course requirements with your tutor at the beginning of each semester, chart out extra time for library research. Estimate how much time it will take you to do the research, then triple that amount of time. Library research can be time consuming and most people underestimate the amount of time needed for the process. If you end up needing less time for the library work, then you will have a little extra time to devote to some
other activity. If you do not plan enough time for library research, you will have problems getting the work done. It is better to overcompensate in this area than to find yourself short for time.

- **approach 2:** Do the library research needed for your project at the earliest possible date. This may mean you will need to meet with your professor before s/he discusses the requirement with the entire class. Most professors will welcome talking with a student who wants to get a head start. Do not procrastinate with your library research. The sooner you do the library research, the sooner you will be able to use the sources you find and get the project done.

- **problems with meeting schedules and keeping appointments** because of short term memory problems and perceptual problems that impede an awareness of the passing of time.

**Coping Strategies:**

- **approach 1:** Always keep a calendar with all your classes, activities, and appointments clearly marked on it. Consult that calendar at least once a day. If your problem is particularly severe, carry that calendar with you and consult it after each activity you complete. Make it a point to keep all of your appointments.

- **approach 2:** If something comes up that conflicts with an appointment you made with a librarian, do not just skip the appointment. Call that librarian as soon as you know of the conflict and reschedule the appointment. Write down the new time in your calendar. If the librarian is not there when you call, leave a message that you need to cancel with whoever takes the call and offer some alternate times for a rescheduled appointment. The librarian will then get back to you when s/he has the time. If you have time, stop in or call back later yourself to reschedule.
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CARD CATALOG FLOW CHART / WORKSHEET

DESCRIPTION OF TOPIC

RELEVANT TERMS (Brainstorm)

LIBRARY OF CONGRESS SUBJECT HEADINGS

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CARD CATALOG WORKSHEET

TOPIC (One or two sentences summarizing the main point of your paper):


LIBRARY OF CONGRESS SUBJECT HEADINGS LEADING TO MATERIAL ON THIS SUBJECT:


SOME BOOKS ON THIS SUBJECT ARE:

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66
PERIODICAL INDEXES FLOW CHART / WORKSHEET

DESCRIPTION OF TOPIC

TITLE OF INDEX

SUBJECT HEADINGS

YEARS CHECKED

ORGANIZED CITATIONS

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70
NEWSPAPER INDEXES FLOW CHART / WORKSHEET

DESCRIPTION OF TOPIC

TITLE OF INDEX

SUBJECT HEADINGS

YEARS CHECKED

ORGANIZED CITATIONS

69
**LIBRARY PATHFINDER**

**TOPIC** (One or two sentences summarizing the main point of your project):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

**AN INTRODUCTORY ARTICLE ON THIS TOPIC APPEARS IN** (A SPECIFIC ENCYCLOPEDIA, HANDBOOK, OR OTHER SOURCE):

________________________________________________________________________

**LIBRARY OF CONGRESS SUBJECT HEADINGS LEADING TO MATERIAL ON THIS TOPIC:**

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72
TOPIC DESCRIPTION WORKSHEET

USING ONE OR TWO SENTENCES, STATE THE TOPIC OF YOUR PROJECT:

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LIST FOUR OR FIVE QUESTIONS THAT YOU HOPE TO ANSWER IN YOUR PROJECT:

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BLANK FLOW CHART / WORKSHEET FOR:
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APPENDIX TWO:
WHAT IS A SPECIFIC LEARNING DISABILITY?

The most frequently used definition of a specific learning disability is taken from The Education for All Handicapped Children Act of 1975, Public Law 94-142:

...a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems that are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

Students with a specific learning disability vary as much in intelligence as the general population. Some are gifted, some are of average intelligence, and others are of lesser intelligence. In school, the primary concern seems to be the need to carefully develop unique skills and strategies for learning.

Students with a specific learning disability often need to work much harder and with more persistence than their non-disabled classmates. This does not mean, however, that they can not succeed academically. It simply means that it might take them a little longer to complete assignments than their classmates. In many cases, they must seek out special assistance for help with note-taking and study skills, vocabulary building, test-taking, writing mechanics, spelling, mathematics, and other related academic skills.

Looking specifically at college students with a specific learning disability, listed below are some general characteristics classified into three areas -- academic, processing, and
social/emotional (Brown, 1985; Hartman, Krulwich, and Hippolitus, 1985; Mangrum and Strichart, 1983; Putnam, 1984; and Franck, Gustafson, and Freeman, 1985). It is important to note that each individual of this population has a different combination of one or more of the following characteristics and that often, where there is a disability on one hand, there is a strength of an opposite modality on another.

ACADEMIC CHARACTERISTICS

- **Demonstrates severe underachievement** that appears to be the opposite of what one might expect from an individual with an average or above average intelligence level and/or who offers insightful comments within class or other discussions.

- **Demonstrates poor comprehension skills** due to visual or auditory perceptual processing problems or cognitive sequencing or discrimination problems.

- **Has a short attention span or is easily distracted** due to an involuntary reaction to an overstimulation of sights; sounds, emotions, or other stimuli. The student may then either blank out, get frustrated or angry, or become somewhat dazed for a short time.

- **Demonstrates reading problems** due to visual or cognitive processing problems that cause slow reading rate, poor vocabulary, poor comprehension, problems picking out main ideas, short-term memory, and/or visual discrimination problems.

- **Demonstrates written language problems** due to cognitive sequencing or discrimination problems that result in poor expressive style and problems with punctuation, capitalization, vocabulary, spelling, and organizational skills.

- **Has difficulty with spelling** due to short-term memory and/or either visual or auditory discrimination problems that cause the individual to see or hear words or letters inaccurately, in reverse, or out of order.

- **Has difficulty with mathematical concepts** such as numerical relationships, fractions, decimals, percentages, calculation, sequencing, etc. due to cognitive sequencing and discrimination problems that interfere with logical thinking and the differentiation of similar concepts.

- **Exhibits difficulty verbalizing answers and speaking in complex sentences** due to short-term memory, poor
vocabulary, and/or other cognitive problems that cause language difficulties.

-uts, confuses, or mispronounces words; mistakes similar words; or fails to recognize recently learned words due to short-term memory and/or visual or auditory sequencing and discrimination problems that cause an individual to see or hear words inaccurately, in reverse, or out of order.

- Exhibits difficulty in responding to verbal directions due to either auditory perceptual problems that cause the individual to hear inaccurately or directional problems that make it difficult to distinguish left from right, north from south, etc., as well as learn the layout of a large building.

- Exhibits difficulty remembering information presented in class due to auditory perceptual problems that cause the individual to hear inaccurate or incomplete information and/or short-term memory.

- Has difficulty with abstract reasoning and concrete thinking due to cognitive sequencing or discrimination problems that cause the individual trouble thinking logically and distinguishing between similar concepts.

PROCESSING CHARACTERISTICS

- Demonstrates inadequate study skills due to visual, auditory, and/or cognitive processing problems in combination with a lack of knowledge or development of learning strategies to help the individual compensate for the problems.

- Has difficulty with memorization due to memory and/or cognitive problems.

- Demonstrates difficulty with the physical process of taking notes and/or poor handwriting in general due to a visual motor problem.

- Has difficulty taking notes in class due to an auditory motor problem that interferes with an individual's ability to both listen and take notes at the same time without missing something important.

- Has difficulty shifting reading from subject to subject due to difficulty with an overstimulus of ideas, cognitive perceptual problems, or organizational and time-management problems.
- **Demonstrates difficulty outlining, selecting main ideas, identifying relevant materials, and using reference sources due to cognitive and visual sequencing and discrimination problems that make it difficult for an individual to think logically, distinguish between similar concepts, and/or read or see words accurately.**

- **Has trouble planning or setting goals, organizing and budgeting time, starting tasks late, and not completing tasks due to short-term memory, cognitive sequencing and discrimination problems, perceptual problems that cause the individual difficulty with sensing the passing of time, and/or motivation problems due to frustrations with a low success rate in the past.**

**SOCIAL/EMOTIONAL CHARACTERISTICS**

- **Troubled by poor self concept due to many years of repeated experiences of academic failure and frustration.**

- **Misinterprets the subtleties in language, tone of voice, or social situations due to visual and/or auditory perceptual problems.**

- **Demonstrates some difficulties with personal relationships due to the problems resulting from misinterpreting the subtleties in language, tone of voice, or social situations.**

- **Exhibits tendency to make impulsive decisions or judgments or an impaired ability to make decisions due to mounting frustrations and poor self concept as.**

- **Demonstrates lack of flexibility in some situations due to strict adherence to compensation strategies from which an individual is afraid to stray -- straying meaning failure in such an individual's eyes.**

Generally speaking, if college students with a specific learning disability have the proper support during their years in academia, they will be able to learn the necessary compensation and learning strategies for success in college. They must, however, want, seek, and follow through with such assistance, or they may have difficulty succeeding. Lack of motivation can be the biggest obstacle for these students. With assistance, they will eventually reach the point at which they will have learned the strategies necessary for survival in college.

In our experience at The College of Wooster, improvement is evident as the students work with tutors in the Developmental
Learning Center, mature in the program, and gain confidence in themselves each year. The library staff also has noticed a definite improvement in confidence with library skills in those students they work with on a repeated basis. These successes make the program rewarding for both the staff and the students involved. They also reinforce the fact that a student with a specific learning disability, with both assistance and motivation, can succeed at the college level.

References:


APPENDIX THREE:
PREFERRED LEARNING STYLES OF INDIVIDUALS

Every individual, disability or no disability, has a preferred style for learning. There are numerous methods, through observation and testing, to determine an individual's preferences. All have some merit as well as possible biases because measuring people's personalities by nature is an inexact endeavor. Results from such observations and testing, however, can be used successfully as indicators of an individual's learning preferences.

Ultimately, it is best for the individual to analyze his/her own results, determine if inaccuracies exist, and make suggestions for changes. Often, results of personality, learning, and cognitive preference tests put words and labels on characteristics and preferences that the individual already knows exist. Once these characteristics and preferences are identified, it often becomes easier to determine the best learning strategies for individual involved.

The staff in The College of Wooster's Developmental Learning Center, a center that offers assistance to students with a specific learning disability, uses several learning and personality inventories, results from other evaluative measures, and input from the students themselves. They help the students develop individualized coping, compensating, and learning strategies so the student can succeed in college. Three of the learning and personality style inventories used in the center are the bases for most of the coping strategies outlined in this manual as well as the focus of this appendix. They are the Price, Dunn, and Dunn Productivity Environmental Preference Survey (PEPS), Bernice McCarthy's The 4-MAT System, and the Myers-Briggs Type Indicator (MBTI).

PRODUCTIVITY ENVIRONMENTAL PREFERENCE SURVEY (PEPS)

The PEPS is based on research done by Rita Dunn, a specialist in the area of learning styles. It provides simple, straightforward indicators of an individual's preferred environment in which to learn and be productive. Included are physical as well as social/emotional characteristics. There are twenty-one elements identified by the inventory. These elements are grouped into four areas of needs: environmental, emotional, social, and physical. The elements listed under each area below are followed by
questions designed to illustrate the meaning of each preference listed:

ENVIRONMENTAL NEEDS

1. **Noise Level:** Does the individual prefer quiet or sound in the background when learning or working?

2. **Light:** Does the individual prefer bright, dim, or medium lighting when learning or working?

3. **Warmth:** Does the individual prefer cool or warm environments when learning or working?

4. **Design:** Does the individual prefer a formal or informal furniture/room design in learning or working environments?

EMOTIONAL NEEDS

5. **Motivation:** Is the individual highly motivated or unmotivated when it comes to learning or working? Or does motivation depend upon interest in the task?

6. **Persistence:** Does the individual persist in or have difficulty sticking to learning tasks?

7. **Responsibility:** Is the individual apt to follow through or not follow through on tasks that s/he "ought to do?"

8. **Structure:** Does the individual need specific instructions or a great deal of freedom when completing learning or working tasks?

SOCIAL NEEDS

9. **Learning Alone:** Does the individual learn best when working alone?

10. **Peer-Oriented Learning:** Does the individual learn best when working with another person (friend or peer)?

11. **Authority-Oriented Learner:** Does the individual learn best when an authority figure (teacher, tutor, or librarian) is present?

12. **Several Ways:** Does the individual need to experience a variety of social situations to learn best -- alone, with peers, and with an authority
figure present? Or is social environment not a factor in learning?

**PHYSICAL NEEDS**

13. **Auditory Preference**: Does the individual learn best by listening to lectures, discussions, recordings, etc.? Or does auditory learning work best for the individual when combined with one or more other modal preferences (visual, tactile, kinesthetic)?

14. **Visual Preference**: Does the individual learn best through reading and other visually oriented materials presented in class? Or does visual learning work best for the individual when combined with one or more other modal preferences (auditory, tactile, kinesthetic)?

15. **Tactile Preference**: Does the individual learn best when listening or reading if his/her hands are kept busy taking notes, doodling, etc.?

16. **Kinesthetic Preference**: Does the individual learn best when using whole body movements or when otherwise physically involved with the learning process?

17. **Requires Intake**: Does the individual often nibble, smoke, drink, chew, or bite objects (pencils) when concentrating?

18. **Evening/Morning**: Does the individual concentrate best in the evening, the morning, or does it matter when?

19. **Late Morning**: Does the individual concentrate best during the late morning?

20. **Afternoon**: Does the individual concentrate best in the afternoon? Does the time of afternoon (early, mid, late) matter?

21. **Needs Mobility**: Does the individual need to move around frequently or take frequent breaks when working or learning? Or does mobility depend upon interest or absorption in the task?

When the twenty-one PEPS elements described above are analyzed for someone, it becomes easier to identify appropriate learning strategies and environments for that individual. If a weakness is pointed out, then a strategy to either compensate for that
weakness or improve the area of weakness can be developed. When a strength is identified, a strategy utilizing that strength can be developed. Taking this positive approach to learning is sure to improve the student's productivity, satisfaction, and success with the learning process.

**THE 4MAT SYSTEM**

The 4MAT system is actually a model for teaching that draws upon past research in many areas such as learning styles, left and right brain dominance, creativity, and management to name a few. It identifies preferred types of learning and perceiving on the part of individuals who take the test. The test itself is a simple set of nine groups of four phrases each that the individual is asked to rate from "most like you" to "least like you." These answers are then charted in a couple different ways to find out the individual's preferred learning type as well as other strengths and weaknesses.

The College of Wooster's Developmental Learning Center focuses primarily on the type theories in the 4MAT system and ignores the aspects on left and right brain research. This seems to be sufficient for their purposes to make the system useful as a personality and learning style indicator. Therefore, only the major type aspects of the theory will be discussed here. Bernice McCarthy's book, *The 4MAT System*, discusses the rest of the theory for those interested in pursuing it further.

The theory states that there are four major personality types. Everyone has some characteristics of all four types, but each individual has a preferred type. It is suggested that learners should use the strengths of their preferred type to learn as well as to help develop aspects in their weaker areas. The more skills one develops in all areas of type, the more well-rounded the individual will become. An excellent starting point in the process is, of course, with the individual's preferred type. Following are descriptions of the four type characteristics:

**TYPE 1 CHARACTERISTICS**

TYPE 1 learners are problem finders who like to integrate their learning experience with the self. They need a reason for learning and often ask the question WHY? Their strengths include brainstorming, listening, speaking, interacting with others, and pulling together diverse elements. Their weaknesses include a lack of ability to organize and to figure out why. Some other characteristics include imagination, innovation, and a preference for learning in small groups.
TYPE 2 CHARACTERISTICS

TYPE 2 learners are problem solvers who do well with analytic concept formulation. They prefer to learn through the classroom lecture method and often ask the question WHAT? Their strengths include analyzing, persistence with learning tasks, observation, classifying, seriating, and drawing conclusions. Their weaknesses include a lack of common sense that comes from doing and experiencing. Some other characteristics include an introspective outlook and a reliance on intellectual ability for understanding.

TYPE 3 CHARACTERISTICS

TYPE 3 learners are problem solvers who like to personalize tasks through the trial and error approach. They learn best through hands on experience and like to ask the question HOW DOES IT WORK? Their strengths include common sense, experimenting, manipulating materials, following directions, building on givens, and making things work. A weakness is a lack of ability to reflect on experience. Another characteristic is their use of their body senses for understanding.

TYPE 4 CHARACTERISTICS

TYPE 4 learners are problem finders who like to integrate practical applications with first hand experience. They learn something best when they either teach it to themselves or teach others. They are at their best when working or studying independently. Their strengths include a knack for identifying hidden possibilities, taking action, carrying out and following through on plans, and applying and testing with reality. A weakness is a lack of organizational skills. Other characteristics include an outgoing personality, a reliance on intuition, and a knack for enriching the reality of a situation or experience.

MYERS-BRIGGS TYPE "DICATOR (MBTI)

The (MBTI) is a test designed to identify learning styles and motivation patterns of people. It is based on the research done by Carl Jung on psychological types, which was incorporated into the similar research done by Katharine C. Briggs. Isabel Briggs Myers worked closely with Briggs, her mother, to design the MBTI. It is now a widely used test in many circles -- educational, work-related, and counseling.
The College of Wooster's Developmental Learning Center uses the results from the test to help students using the Center to know themselves, their work patterns and motivations, and their learning styles better. It is a highly regarded test by the staff in the Center as well as in other offices on campus.

It is difficult to convey all there is to know about the MBTI in an appendix. Two books are recommended for those who want to gain a better understanding of the test: *People Types & Tiger Stripes: A Practical Guide to Learning Styles* by Gordon Lawrence and *Gifts Differing* by Isabel Briggs Myers. The following discussion can be considered only a basic outline to the concepts covered in these two books.

According to the theories of Jung, Briggs, and Myers, each individual is born with deeply ingrained, basic patterns or ways of learning, working, and carrying on with the everyday task of living. These patterns are referred to as "psychological types." Each "type is an individual's preferred pattern for learning and doing. It is possible, however, through environmental situations, for individuals to develop and use patterns other than their preferred one. This can either cause the individual to be well-rounded or somewhat maladjusted, depending on whether or not the individual's preferred pattern is greatly repressed.

Each person is identified as either an *Extravert* or an *Introvert*, both terms referring to an individual's world view rather than the usual definitions one assigns to such terms.

**Extravert:** Extraverts are oriented to the outer world of people and things, scan the environment for stimulation, and often act without thinking.

**Introvert:** Introverts are oriented to the inner world of ideas, concepts, and inner impressions and often reflect or consider seriously before taking any action.

Each person perceives the world through either *Sensing* or *Intuition*.

**Sensing:** Sensing types use their five physical senses (seeing, hearing, etc.) to perceive the realities of the world around them. They often learn best through the step-by-step approach.

**Intuition:** Intuitive types use memory and past associations to perceive patterns and meanings of the realities around them. They are able to imagine the future, "read between the lines," see the overall picture of a
situation, and in general see possibilities where none are yet established.

Each person judges the world around himself/herself with either Thinking or Feeling judgment.

**Thinking:** Thinking types use logical analysis and objective or impersonal criteria to judge the best approach to the situation, event, or task at hand. They are often firm-minded and skeptical and find it difficult to understand something that defies logic.

**Feeling:** Feeling types apply their own priorities to situations, weighing both their own and others human values. They are trusting, appreciative of others, warm in relationships, and at a loss in environments that lack harmony.

Each person's attitude towards the world is dominated by either the Judgment or the Perception aspect of his/her psychological makeup as described above.

**Judgment:** Those whose judgment attitude dominates use that attitude (thinking or feeling) outwardly. They prefer to decide, plan, control, and regulate their environments. They are also goal oriented and prefer to complete a task even if there is some information missing.

**Perception:** Those whose perception attitude dominates use that attitude (sensing or intuition) outwardly. They take in information, adapt and change willingly, are curious and interested in the world around them, and open-minded in most situations. They often resist finishing tasks to leave them open for more information or better possibilities.

To understand an individual's psychological type, one must look at all four aspects of that person's personality: world view (Extravert or Introvert), perception of the world (Sensing or Intuition), judgment of the world (Thinking or Feeling), and dominant attitude towards the world (Judgment or Perception). There are sixteen possible combinations of psychological type. Each individual is only one type.
References:


APPENDIX FOUR:

BIBLIOGRAPHY OF
RECOMMENDED READINGS
AND OTHER RELATED RESEARCH SOURCES

**(A copy can be found in Andrews Library.)

RECOMMENDED READINGS:


Describes various theories on the learning strategies approach to teaching. It covers methods of mastering specific techniques of learning, such as study and notetaking skills, that enable students to succeed in specific content areas (reading, writing, mathematics, thinking, social interaction, listening and speaking).


Covers, in a straightforward manner, characteristics of individuals with a specific learning disability and practical suggestions on living skills, job-hunting skills, social skills, coping skills, and other related methods of dealing with a specific learning disability. It includes a list of resources for further help and is written with an overall tone of encouragement and positive feedback. Single copies are available on request from: HEATH Resource Center, One Dupont Circle, NW, Suite 679, Washington, DC 20036-1193.


Outlines and describes the twenty-one elements of learning and environmental preferences identified by the Productivity Environment Preference Survey. Includes an extremely helpful, understandable chart that can be used when interpreting results from individual profiles.

Describes the Learning Style Inventory, a test used for children that is the counterpart of the Productivity Environmental Preference Survey used for adults. Discusses various methods and examples of designing and adapting classrooms and course-related materials to individualize instruction according to different learning styles. Focus is toward primary and secondary classrooms, some applications of which can adapted for college students.


An excellent directory and resource guide useful to people at all levels of education. Particularly useful are the lists of resources and associations.


Referred to frequently throughout the manual, this handbook contains instructional material on basic services, materials, and search strategies for library use specific to Andrews Library on the College of Wooster campus. Copies of a revised edition of this handbook are given to all new students upon their arrival to the campus each year. Available on request at the Reference Office in Andrews Library.


A useful flyer containing background information of characteristics of a learning disability and listing several different types of resources, complete with descriptions of and order information for the resources. Single copies are available on request from: HEATH Resource Center, One Dupont Circle, NW, Suite 679, Washington, DC 20036-1193.

A useful, up-to-date text containing background, legal, and technical descriptions of learning disabilities.


Describes and analyzes how the Myers-Briggs Type Indicator works. Provides many useful charts to help the reader better understand the indicator.


A directory to colleges with programs to support students with a specific learning disability. Not as complete or accurate as either the FCLD or the Mangrum and Strichart directories, although it does include a few additional institutions not included in the others.


An excellent directory to college programs for students with a specific learning disability. Includes helpful introductory pages discussing what students should look for in a program.


Describes the theory behind the 4MAT learning styles test. Contains useful teaching and learning strategies and examples that illustrate the theory.


Although directed at professional librarians, this article brings together in concise terms the importance of following a logical search strategy while doing library research. It emphasizes how the research process must interact with an individual's writing process.

In addition to an actual case study, includes a helpful list of understandable compensatory strategies for students with a specific learning disability to use.


Contains in-depth background information on the Myers-Briggs Type Indicator that will aid the reader in understanding the indicator. Overlaps only in part with Lawrence's *People Types and Tiger Stripes.*


Contains descriptions of the twenty-one elements of the Productivity Environmental Preference Survey.

**OTHER RELATED RESEARCH SOURCES:**


Discusses the authors work comparing the learning style tests of Dunn, Dunn, and Price 1979; Gregorc 1979; Kolb 1979; McCarthy 1980; and Hanson and Silver 1978. Identifies their reasons for choosing to use The Learning Preference Inventory (LPI), Hanson and Silver 1978. Describes how the LPI utilizes three aspects of type as originally described by Carl Jung.


This ERIC Document covers strategies to use with individuals with disabilities of all types. It includes an excellent section outlining suggestions for faculty that would minimize classroom difficulties for students with a specific learning disability.

Dunn, Rita. "Now That You Know Your Learning Style -- How Can
You Make the Most of It?" *Early Years*, February (1983): 49-54. **

Outlines practical methods of responding to those elements of learning style that are important to an individual, as identified through the Productivity Environmental Preference Survey. Includes a useful chart outlining methods of introducing and reinforcing materials to visual, auditory, tactile, and kinesthetic learners.


A manual for tutors, researched and written during the 1984-1985 academic year at The College of Wooster. Serves as the basis from which the idea for this new manual for students with a specific learning disability was written. Parts of it were adapted for use in the new manual as well.


Discusses research that claims organized library instruction can be effective for students with a wide range of abilities.


Discusses one professor's story of being won over to the necessity of adapting classroom strategies to the learning modalities of individual students with a specific learning disability for the writing process. Contains a healthy skepticism along with useful ideas for accommodating students with a specific learning disability in the classroom.

Contains Carl Jung's discussion on his theories of psychological type. Useful primary material for those studying many different personality and learning styles surveys and tests.


A history professors discusses, with healthy skepticism, how he was won over to adapting some of his classroom methods to better help students with a specific learning disability. Particularly useful are his suggestions on how to use analogy effectively, speak chronologically and geographically in a simple manner, use mnemonics, develop useful study and skimming techniques, and develop a course syllabus utilizing a class log.


Contains an excellent list of characteristics of students with a specific learning disability as well as useful strategies for classroom teaching and learning.


Contains useful background information for those either involved or interested in the development and implementation of a college level program for students with a specific learning disability.

Outlines useful guidelines for those implementing programs for college students with a specific learning disability.


Discusses the concept of "hyper-irradiation" -- when black print on white background fades in the distance or in the dark. Suggests that this physical problem is exaggerated for some individuals with a specific learning disability. The article is highly recommended by John Herum in the ERIC document listed above.


Contains useful descriptions of characteristics of students with a specific learning disability. Covers other issues related to the slow development of quality college level programs for students with a specific learning disability.


Contains a description and sample materials of an excellent course-related library instruction program at the University of Texas at Austin. Particularly useful are the sample library-related handouts, many of which could be easily adapted for use in any library.


Contains papers discussing a variety learning styles theories, including those behind the Productivity Environmental Preference Survey and the Myers-Briggs Type Indicator. A useful overview of the issues in the field of learning styles.
Swan, Robert J. "Reflections on a First Year of a Pilot Program for Learning Disabled Adults." Journal for Special Educators, 18, No. 3 (Spring 1982): 64-68.

An interesting, helpful commentary for those just beginning to confront and understand the problems students with a specific learning disability deal with on a daily basis.