

Accessing Varied Materials and Resources

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Goals for Young Adolescents

One I-Search goal is for students to dig deeply by accessing information that falls within four categories:

- *Reading* a variety of printed matter (e.g., fiction and nonfiction books, periodicals, reference materials, and brochures) and accessing information from Web sites on the Internet.
- *Asking* people for information (e.g., conducting interviews, conducting surveys, and posting and receiving messages on the Internet).
- *Watching* or viewing (e.g., videos, television shows, slides, and CD-ROMs).
- *Doing* an activity or participating in an event (e.g., conducting an experiment, visiting a museum, working with a computer simulation, accessing a database, or taking photographs).

Knowing that students need as many powerful routes to learning as possible, teachers open new doors to exploration when they explicitly tell students that they must *read*, *watch*, *ask*, and *do*. This is an eye-opening concept for students who are used to typing a word or two into a search engine and then only looking at the first page of results.

Accessing information from various sources affords students the chance to gather multiple perspectives. This is valuable for the young adolescent who is just beginning to relinquish a single world view. For example, students in Bedford were investigating the deep sea fishing industry in Massachusetts. Each had gone to a different scuba diving shop to interview the owners and managers. When the students met to pool what they had learned, they discovered conflicting information. This experience taught them an important lesson, “You probably need to ask several people the same question and not just rely on one response.”

Whereas our overall goal is for young adolescents to learn how to access information by reading, watching, asking, and doing, we can identify five sub-goals that can lead to achieving the broader goal, as follows:

1. *Using Information-Gathering Skills*. Before the I-Search Unit begins, students need to acquire, practice, and apply information-gathering skills. These skills include locating information in a library, knowing how to conduct an interview, knowing how to construct an online survey, using microfiche, and using search engines on the Internet to locate Web sites of value.
2. *Forming a Search Plan*. Once students pose their I-Search question at the end of Phase I, teachers want them to be able to design a search plan. The plan, developed in Phase II, explicitly lists what they intend to *read*, *watch*, *ask*, and *do*, and the order in which they plan to do this.

3. *Modifying the Search.* As students carry out their plans in Phase III, they need to be able to make modifications as they discover new sources of information, change direction after reaching a dead end, or revise their question based on new insights. For example, one group of students working together as a cooperative group learned unexpectedly that an elementary teacher in their town had just completed an extensive unit on wetlands, their very topic. When they visited her after school, she lent them a set of useful books and directed them to the wetland directly behind her school. They immediately proceeded to the wetland to observe wildlife, take photographs, make a list of the trash left scattered about (e.g., plastic wrappers, oil barrels), and take pH readings at different spots (which they later displayed in a graph). Although none of these data sources was in their original plan, the information they obtained through exploration became the centerpiece of their investigation.

4. *Reflecting on the Search and Making Connections.* The fourth goal is for students to continue to reflect in their journals or blogs. The chronicling of their search helps them recognize connections among what they did, what they found, what content they learned, and what they learned about themselves as researchers. For example, a student in Lawrence, New York, who was investigating terrorism, made the following journal entry:

When I tried to get an interview with the Federal Bureau of Investigation, I ran into some trouble...But eventually I go through to this man named George Andrews...I know now that I have to be tough when I get an interview, to not act desperate but to be kind and strong...I also thought that taking down good interview questions will help me out when I group up. Maybe I'll be a journalist, and I will have to interview somebody.

As students chronicle the story of their search, they can reflect on their progress at that time or later when they write their reports or prepare their exhibitions. During the I-Search, students are asked to consciously reflect on what they learned about accessing varied resources and materials. In the previous example, the student who focused on terrorism recognized this:

From the interview that I took, I learned that I have to be a lot kinder to people if I want to get information in whatever I am studying. I also realized that the people that I am asking to have interviews with have lives too, and that they are not always there to help people like me to get information. So I learned how to be patient, as well...I took risks when I did my interview because I did not want to ask a question that was top secret and then they would hang up on me. I had to ask smart questions that would get good answers and that did not give away vital FBI information.

5. *Citing References.* Students need to learn how to cite reference for two good reasons. First, if students themselves want to revisit and check information or investigate their topic more deeply at a later time, they will know where to search. Second, clear references can facilitate the search by someone else who has become excited by the student's search and desire to know more. It is self-affirming for young adolescents to feel that they have motivated the active research of others. As Macrorie (1988) says:

The purpose of bibliographies is to assist a reader who may get so interested in the topic that he or she wants to check further. They tell him where to go so he won't have to do all the hunting the I-Searcher did in order to find a good article (p.65).

Accessing Materials and Resources in Practice

To ensure that students meet these goals, teachers take specific steps during curriculum design, before implementing the unit, and during all phases. The following figure summarizes these practices:

| Ways to Help Students Access Materials and Resources: Before and During the Unit | | | | | |
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| During Curriculum Design | Before Implementation | During Phase I | During Phase II | During Phase III | During Phase IV |
| Teachers engage in a mini-search to test out assumptions about what is available and gather resources and materials & Teachers set criteria for student searches under the headings of <i>Read, Watch, Ask and Do</i> | Teachers and librarians/media specialists pre-teach library skills & Teachers help students to practice new skills in mini-units | Teachers model Read, Watch, Ask, and Do and make this explicit to students | Teachers guide students in developing a search plan | Teachers make arrangements so that students have access to information & Teachers assess student performance and, as needed, provide support | Teachers establish rubrics that guide students to describe their search process and reflect on what they have learned about being a researcher |

During Curriculum Design

During the early stages of the curriculum design process, when teachers are on the verge of agreeing on a viable theme for their unit, they consider two questions:

- Will we be able to find a good selection of varied materials and resources for our Phase I immersion activities so that we can not only intrigue students and build their knowledge, but also model, *read, watch, ask, and do*?
- Are we confident that abundant materials and resources are available for students to access as they pursue their own questions?

By engaging in a mini-search, teachers can test out their assumptions about what resources and materials actually exist. After teachers complete their mini-search they can more realistically set criteria for how many resources they will expect students to use. Telling students how many *reads, watches, asks, and do's* they are responsible for gives them clear guidelines—but leaves enough flexibility for young adolescents to take ownership of the active research process. In addition to the availability of resources, teachers also base their criteria on factors such as the

student's grade and abilities, the theme and length of the unit, what information is available, and whether a student carries out his or her search only inside or also outside of school. Teachers model these activities during immersion (Phase I).

A typical expectation for 7th grade students is to read at least four types of textual materials; conduct at least one interview or a survey in person, via the telephone or Skype, or through email or another Internet-based application; view at least two different media; and do at least one activity. By using the term *at least*, teachers invite students to do much more than the base level of expectation. Many students discover they cannot help themselves from going beyond the minimum. As one student noted:

I learned that I needed to get more information than I had to I shouldn't just get what I was told to because sometimes it's not enough. Something you thought might be a source of information might turn out to actually be a source. I needed to keep going...looking for more stuff.

During Phase I

Teachers use the *read, watch, ask, and do* rubric to guide their own design of Phase I immersion activities. They reason that if they expect students to understand the value of using diverse materials and resources, then they should model how this can be done outside of the library walls. At the close of Phase I, many teachers plan an activity to help students reflect on the materials and resources used during immersion. When teachers make transparent what might have been opaque, young adolescents are better able to understand expectations. Young adolescents respond favorably when they see that their teachers expect the same from themselves as they do from the students.

During Phase II

A search plan serves as a blueprint for carrying out the research. Having a plan in hand gives young adolescents a sense of security as they ready themselves for the next phase of their search. Teachers tell students that although the search plan they develop in Phase II will certainly be modified when they engage in their search in Phase III, having a plan serves as a starting point. Students agree that this strategy serves to prevent later frustration. As one student in Indianapolis commented, "I think the plan is going to help us get our information. It's going to be definitely worth the time we take."

Before students develop their plans, they need time to browse through materials. Browsing can take place in the classroom, any library, or the computer lab. Students can begin their search by delving into materials on the Internet already collected by teachers during curriculum design.

During Phase III

During Phase III (gathering and integrating information), teachers can support students' searches in three ways: help students access resources, assess difficulties, and encourage students to revise search plans so that they are working for and not against the student.

Teachers Help Students Access Resources. Teachers make arrangements, help students share resources, and solicit parental and community support. Though many young adolescents relish the opportunity to actively search for information, the majority need the security of knowing that they will have access to resources at regularly scheduled times. If the Internet-based tools are used as a repository for information, students may access their work anytime, anywhere, allowing them to work on the research at home, the town library, or at school. Many teachers expect that students will continue their investigative legwork after school and on the weekends. This aspect of the search requires parental and community support, which teachers often elicit before the unit begins. Teachers have found that sending letters home to parents and communicating with the town librarian builds awareness and garners support.

Teachers Assess Students' Progress. Young adolescents often feel embarrassed to ask for help, thinking it shows their vulnerability. Having accepted the responsibility of the search, they might be afraid to reveal that they are not succeeding. When students are trying to protect themselves in this way, teachers must determine what is or is not working well through ongoing assessment strategies. After identifying a problem, many teachers intervene to give students a needed boost—for example, helping with phone calls, locating additional resources, or writing letters.

Teacher strategies for this kind of ongoing assessment include asking students a set of questions that they can answer conversationally or in writing. Questions such as the following can ferret out problems:

- What are three good things that have happened so far during your research? Why were they good?
- What problems are you having? Explain how you intend to solve them.
- What is missing from your research so far, either in terms of information or ways to find it?

Teachers also review student journals, and if students are using blogs, it becomes very easy for teachers to facilitate students in the ongoing research process. The figure below presents the journal entries one student made over a few days. These three entries reveal the student's frustration and provided the teachers with a window into the student's search. Based on this information, the teacher was able to develop a set of strategies to help this student find productive avenues for gathering information.

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| Sample from Student Journal That Helped Teacher Assess Need for Help |
| March 29 th and 30 th |

...I called a number for a law enforcement agency. The secretary that picked up said to call back the next day and ask for someone else. The secretary said that this person could help find the information I was looking for but that day was he day off (talk about bad timing). The next day, I called the number again for the person. The secretary hooked me up to the person, but all I got was the answering machine.

April 11

I spent most of the time in the office making phone calls. In my group of common topics, someone gave me a number for a lobster hatchery. I went to the school office and called the number. The person that picked up was very nice after I explained what I was looking for,, he said that I should call another number to another law enforcement agency.

The person said, though, that he would send any information he had that I could use. Next I called the number the man at the hatchery said to call. The person that picked up told me to call another number to the Coast Guard. That person said that she would send me info that I could use. I called the Coast Guard next and they fixed me up with a captain who would help me answer some questions. They told me that the captain would call me at 3:00 p.m. on April 12th. The Coast Guard also gave me another phone number that went to the Department of Fisheries Wildlife Environmental Law Enforcement, which I had already called on March 29 and 30.

April 12th

At 3:00 p.m., I was waiting at the phone for half an hour waiting for the captain to call. The captain did not call and at 3:45 p.m., I gave up and called Douglas G. Marshall. Douglas is the exclusive director of a few meetings and discussions that were going on about new lobster laws. I called this number but he was not there.

Teachers Encourage Students to Revise Search Plans. Revision of the search plan in Phase III is expected. Not only do students shift direction as a result of teacher feedback, but they also revise their plans based on unfolding leads. The essence of the search is fluidity; being able to discover the unexpected and being prepared for breakthroughs.

For example, under the category of *read* in his search plan, a student in Bedford listed the book, “Lobsters: Gangsters of the Sea,” an article from the magazine section of the Sunday newspaper, and another magazine article from a periodical on fishing. But once his search was underway, he found information in the *Boston Globe* describing lobstering in Maine. This led him to the *Bangor Daily News*, which, in turn, led him to two brochures from the Division of Law Enforcement (1994 *Massachusetts Lobster Statues Report* and *Lobster and Crab Laws and Restrictions*). He also discovered a set of rules proposed at a public meeting from the New England Fishery Council, which he found by searching an online database. He might not have been able to unearth such valuable information unless he had started with an initial plan of action.

During Phase IV

In Phase IV, students prepare an I-Search Paper, an exhibition, or both. Differing from traditional research projects, students will explain their search methodology, recount the high and low points of the search, and reflect on what they learned about themselves as active researchers. Teachers want students to review how and what they learned so they can take charge of their learning now and in the future.

Final Comments

As young adolescents become engaged in their searches, they begin to recognize that they are taking responsibility for accessing information. As decision makers, they are in charge of their own inquiry.

Extremely important during this developmental stage, middle school students want to test their abilities to be independent, explore their worlds, move away from what is safe and familiar, and not follow the dictates of adults. By designing, carrying out, and modifying a search plan, they become accountable for determining what kinds of resources are most productive for their questions. By reflecting on this process, they develop a personal awareness of what transpired. One student reflected: “I noticed that I developed as a researcher when I started looking in resources other than books to find information.”

The fundamental goal for accessing varied materials and resources is to construct knowledge.

References

Macrorie, K. (1988). *The I-Search paper*. Portsmouth, NH: Boynton/Cook.

This excerpt was adapted from pp. 38-55 of *Teaching Middle School Students to be Active Researchers* by Judith M. Zorfass with Harriet Copel, 1998. Alexandria, VA: Association for Supervision and Curriculum Development.