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Data Charts: A Crutch for Helping Pupils Organize Reports

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Quite a few children have trouble writing reports which consist of more than a few sentences extracted verbatim from an entry in a single encyclopedia. When the assignment demands that they use several sources, the pupils seem to copy the first paragraph from one source, the second from a second source, the third from a third source and then, depending upon the length of the report, repeat the sequence to generate the fourth, fifth and sixth paragraphs. Lessons on outlining help, as does instruction in how to take notes on cards and organize the cards. But still the reports end up like outlines of the first source children read.

Perhaps part of the problem is that we really don't do a very good job of teaching children what a report is, the scholarly purpose of using several sources, or the skill of comparing sources to identify and then elaborate upon generally accepted principles. Certainly we never tell them how to decide when they have located enough sources to draw a conclusion. I am convinced that the difficulty of learning to write a report is vastly increased when the teacher avoids telling pupils exactly what to do and how to proceed in an attempt to encourage creativity on the part of the individual child.

Some form of direct instruction which focuses upon the skills of abstracting question-relevant information from a source, of organizing the abstracts for easy comparison of comparing and synthesizing discrete facts from different sources into coherent general statements, and of subordinating different kinds of elaborative or qualifying material is necessary to teach pupils the basic process of report writing. Furthermore, I suspect that more pupils will learn these several ideas and skills more rapidly and with less confusion if their early reports are written under highly structured and systematically prompted conditions that emphasize a series of logical and ordered steps. It may even be that if a logical step-by-step method could be taught and practiced as a skill or an algorithm, more pupils would come to understand the nature of reporting and be able to use the components more flexibly in original and less orderly ways than if pupils are left to wallow around in discovering a personal strategy by trial and error.

Over the past several years, I have seen a device used with children between grades three and six which helps teachers explain logical steps in report writing, seems to help pupils overcome the immediate problem of summarizing facts from several sources into an orderly set of paragraphs, and may also help them understand why several sources are necessary and how a report differs from an abstract. Basically, the trick boils down to teaching children to record notes from several sources on a special kind of worksheet I'll call a comparison chart, to compare entries, and then write their reports from their comparisons.

In simple and highly prompted form, appropriate for rank beginners, the teacher distributes a mimeographed worksheet divided by horizontal and vertical lines into a calendar-like grid of nine or twelve cells. The teacher explains that pupils are to write reports on a simple and narrow topic like Igloos, and writes in the topic at the top of a transparency just like the chart children have. Then the teacher identifies three short relevant sources students should use for obtaining information, and records author and title for each source in the first column of the chart. Next, the teacher explains that the reports should include one paragraph on each of two or three questions, which the teacher also states and records as headings for the second, third and fourth columns on the chart. For example, "What is an igloo?" and "How are igloos furnished?" When labeled, the chart will look something like the illustration in Figure 1.

	What is an igloo?	How are igloos furnished?
Seasons of The Eskimo Bremmer, Fred		
"Igloo" World Book Encyclopedia		
An Eskimo Family Silver-Burdette co		
Summary		

Figure 1

When the chart is labeled according to the assignment, the teacher then explains how the chart is to be used as an aid to collecting information for the report. In general, the student goes to the first source indicated at the left of the chart and reads that source for information about the first question. When a relevant statement is found, the sentence is recorded or summarized in the first cell. If the source gives several statements relevant to the first question, the pupils might record some abbreviated statement of each fact. As the student reads on, and finds information relevant to the second question, that information should be recorded in the second cell for that source. In my experience, it is a good idea for the teacher to actually record data from the first source in the first cell to demonstrate exactly what should be done, and what the result will look like. If pupils can be given copies of the source, it is helpful to ask that they fill in the second column as a check to determine whether they understand.

The next step is to have pupils use the second source to fill in the second row in the chart just as was demonstrated. This task should not be difficult since the instructions on what to do will have been clear, simple, and systematically demonstrated. Then the third source would be used to fill in the third row. Note that very different kinds of sources can be presented when comparison charts are used to organize notes. A diagram or photograph of an igloo or it's furnishings could serve as a non-prose source, for example, which pupils would observe and describe in their own words in direct response to the questions at the top of the columns. The chart will help to reduce the illustration to the same form of data as is obtained from prose sources and thus make dissimilar forms of information easily comparable.

When the cells of the chart are filled in with brief notes or simple sentences, the relevant information from the original sources has been abstracted and organized into a form which is easy for pupils to compare across sources. At this point, the teacher instructs the pupils to compare information down the first column to identify the main facts upon which all the sources agree to answer the first question, and to write a sentence at the bottom of that column which summarizes the common answer to the question. This sentence will generally serve as a topic sentence for a paragraph. Often there will be other facts, qualifications, examples or conflicting statements recorded in the cells, and pupils can be told to write sentences on these facts to expand or clarify or qualify the topic sentence. Again, in an initial lesson on use of comparison charts, it might be desirable for the teacher to project a completed comparison chart and actually demonstrate the comparison process after the instructions to compare are given to make sure pupils understand

exactly what to do. For example, in the Igloo report, the teacher would point out that all sources agree that igloo is the Eskimo word for house, and that two of the sources mention different kinds of igloos. Thus one would summarize the information at the bottom of the column by writing something like,

> "Igloos is the Eskimo word for house.
> There are several different kinds:
> dome-shaped snow houses,
> dugouts,
> tents, and
> frame houses."

Then the teacher would ask pupils to repeat the comparison procedure for the information recorded in the second column of the chart as a check to see that pupils understood what to do.

Of course this summary statement is only an hypothesis, and not really a conclusion because it might be that the sources happen to be exceptions and that further research would reveal some different conclusions. Technically, students should be taught to use this summary statement as an hypothesis in predicting what the next source will say. They should form their hypothesis, predict the data that will be found in the next source they check, and then locate an additional reference or two to check the accuracy of their hypothesis. When the hypothesis is confirmed, further research can be judged unnecessary.

When the data for the columns have been summarized and the hypothesis has been stated and checked, the next step is for pupils to write a paragraph for each cell filled in as the result of comparing discrete entries. If pupils have difficulty writing paragraphs, the summary statements should be quite useful in explaining the nature of a topic sentence and elaborating sentences, and determining where the paragraph should stop and the next paragraph (on the second column or question) would begin. Again, the teacher can demonstrate by translating the first cell into a paragraph, and check pupil comprehension by watching individuals as they perform the same operation with the second set of summary sentences.

Obviously the first couple of reports written in this manner will not be masterpieces of originality, but the process of systematically explaining and demonstrating each step, of showing how accounts may differ and are to be compared, and of showing the difference between topic sentences and related elaboration will do a great deal to get the slow learners up to the threshold of understanding how to proceed. The exercise won't hurt the fast learners either, because it us a systematic use of the inductive process, and demonstrates in a simple form the same sorts of operations used in every science from anthropology to zoology.

As pupils become more comfortable with the basic procedure,the teacher can add complexity by providing sources which disagree on answers to the main questions, and suggest to students that when this occurs they can summarize the data by saying "Most sources agree that . . ., however, some . . . ." Other kinds of complexity can be introduced by providing longer sources with more irrelevant information to be screened out, and different kinds of subordination can be introduced.

When pupils are able to write simple reports with a minimum of individual assistance, prompts given in headings of the chart can be reduced. For example, the teacher may suggest a topic like Tepees and ask pupils to decide upon what aspects of the topic

they would like to write about, and enter their own questions or subtopics at the head of columns. Here, pupils are beginning to plan the subheadings of their own reports with some backlog of examples and practice to work from. Similarly, appropriate

references may still be named but pupils might be asked to locate the references for themselves in the school library. Later, the references might not be given at all, and pupils might be taught to use the topic term and key words in subheadings as a basis for learning index skills.

Once pupils learn the basic logic of using a comparison charts in report writing, more elaborate charts can be provided to cover more complex subjects. For example, it is common in social studies for students to be asked to write rather complex reports on a culture or country with a number of headings. If each pupil reports on one case or country or place in a form which will be comparable among students, it will be easier to discuss the results of reports and generalize across cultures or groups. Students might be given a chart like the one illustrated in Figure 2, asked to fill in the cells and then deliver the report to peers who, having done the same sort of report on another comparable case, would be able to compare findings across reports. Taba (1971) suggested a similar technique.

I do not know what the long term effects of instructing children in use of comparison charts will be. Advocates of open-ended discovery learning will object that the use of such a highly structured device may reduce children's creativity or otherwise inhibit discovery of personal strategies of report writing. I assert that if one assumes that pupils do not know how to write reports and asks them to write reports without first teaching an orderly procedure, some pupils will become so confused by the trial and error process that they will either learn to copy references or avoid report writing as a defense against failure (McKenzie 1978).

I have been told by experienced and responsible teachers and librarians that the quality of pupil reports is vastly improved when pupils use comparison charts as an intermediate step between the assignment and writing up the report. I have seen pupils instructed in the technique voluntarily make up charts in planning reports for other teachers. And one school librarian told me that after the standard orientation to the library, a child she had taught to make comparison charts asked, "Why don't you tell everyone how to make those charts for writing reports? That's really neat!

References

McKenzie, G.R. "The Fallacy of Excluded Instruction: An Hypothesis on Why Progressive Social Studies Teachers Fail. Paper presented at the Annual Meeting of the National Council for The Social Studies. Houston, Texas, November 1978.

Taba, H. Teacher's Handbook to Elementary Social Studies: An Inductive Approach. Reading, MA: Addison Wesley Pub. Co., 1971.

NAME OF CULTURE

	Housing	Food	Clothing	Transportation	Religion	Government
Source						
predict						

Figure 2
Culture Study Comparison Chart