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Making Comparisons: A Model and a Collaborative Team Activity

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Among the most common cognitive abilities that social studies teachers value and want students to master is that of comparing. While students are frequently given things to compare, they are less likely to be taught a set of procedural steps for "how to compare," steps that they can use to compare any two or more things. This article provides some key definitions associated with comparing, outlines a model for comparative thinking, provides steps students can use to compare, and describes how students might study and learn these things within a collaborative group setting.

Defining Key Terms

For our purposes, "comparing" is the decision-making activity of determining whether two or more things are identical to, similar to, or different from one another. This means that the student should reach one of three conclusions:

1) The things examined are *identical* to one another, meaning that they are viewed as being equal, the same, or equivalent.
2) The things examined are *different* from one another, meaning they are viewed as being not alike, not the same, not equivalent, or not equal to one another.
3) The things examined are *similar*, but not identical. We might say that, in a particular context, things that are different from one another are viewed as being almost equivalent or alike.

Being similar means that the items are different from one another, but in a particular situation, the difference is not seen as very big or meaningful. However, in another situation, this same difference might be considered to be large enough so that we view the things as being different. Thus, to call something "similar" is an ambiguous description until we describe in exactly what specific ways two things are alike, and in what ways they are different. Also we must often explain the context of our comparison, making clear in what situation (or in what case, or by whom) two or more things are being compared.

Studying the Context

Students have to know the context before they can make a decision about whether two things are similar. We can explain the importance of context with older elementary students with the use of an example taken from "kids' culture."

Let's suppose that there are two skateboards for sale: one, with a top speed of 15 miles per hour (mph), and one with a top speed of 12 mph.

Let's also suppose that there are two buyers. A girl is looking for a skateboard for a race. Every Saturday, she takes her board and goes to the local park where there is a skateboard "tricks and track" facility. There is also a boy who is looking for a skateboard only for going up and down his driveway and sidewalk, where he will never be able to go full speed on either board. There is too much traffic for him to go in the street, and there is no other place for him to use the skateboard.

To the racer, the 3 mph top speed difference might mean winning or losing the race, and thus she will view the top speeds of the skateboards as different. She might pay more money for the faster skateboard.

To the driveway skateboarder who will not be able to go full speed on either board, these two skateboards will be seen as similar. Students need to be clear that the term "similar" means that there is a difference between two things, but that the difference is not viewed as being very large in a particular situation. In other words, being similar does not mean being equal.

Inform students that when they go about comparing two things, they are going to have to make decisions about which features are important. They should take notes not only about measurable differences between two things, but also about what these differences mean to people. Students must pay attention to the cultural context of the comparison.

In the example above, students would have to decide whether a 3-mph difference between skateboard top speeds is important to a particular youth. The girl, who is a racer, would probably care a lot about this difference in speed. The boy,

who is limited as to where he can use a skateboard, would not.

Example from Anthropology

We can also use an example from anthropology: students can compare traditional Navajo "male" and "female" hogans to one another in terms of the size of their interior floors, shape of the structure, number of poles used to form the exterior walls, and what people do within the structure. But before students decide whether traditional male and female hogans are identical to, different from, or similar to one another, they will need answer these questions about context:

Are we comparing these two types of hogans from our point of view as people outside of that culture?

Or do we want to compare these two types of hogans as a Navajo might?

If students and teacher take the role of the outsider, then measurements and casual observations are enough to make the comparison. If the class takes the latter point of view, then students and teacher will have to spend a little time learning about how the Navajo people use these structures—what physical features and the various activities mean to them.

Model for Comparative Thinking

Students need ways of selecting, then organizing, the information about what they are to compare, as well as ways to describe and display their conclusions. Below we present steps that students can use to help them systematically compare two things.

(a) Select Characteristics on Which to Base the Comparison

To compare things in an academically responsible way, students must examine a number of important parts of each of the things being compared. They need good sources of information that describe several characteristics of the two things. For instance, in comparing traditional male and female hogans to one another, students may want to compare the physical characteristics of these two types of hogans in particular (there are other types of hogans as well). They may also want to compare how people use these structures. In the classroom activity below, **Handout 1** describes several characteristics of hogans.

(b) Find and Use Sources of Information

Once a student has selected a characteristic, he or she then reads and does research about that characteristic. For example, if "diameter of the floor" is selected, then the student will read that, for male hogans, the answer is a range: from 6 to 12 feet. Reading more, the student will discover that the diameter of female hogans varies from 15 to 23 feet (**Handout 1**). Students should find and enter information for each characteristic that is selected.

(c) Display the Information

If the two things we are studying have several characteristics that can be compared, then students need a way to keep track of the data they discover in their reading or research. One efficient way to display such information is in a table, in which the various characteristics are listed in rows, and information useful for making comparison decisions is described down each column. In the classroom activity below, **Handout 2** provides a blank table that students can fill with information about hogans and how they compare with one another. (**Sidebar A** provides a key for the teacher.)

Once students have finished their lists of characteristics, ask whether they can think of a way to organize their list so that they can keep track of what they discover and also, later, justify whether they decide that two things are the same, similar, or different.

At this point, the teacher provides a blank form for each student (**Handout 2**, which is a table consisting of open columns and rows). On the overhead projector, the teacher shows the blank form, and then writes on the transparency what students are to fill in at the top of each column. The teacher makes clear what the purpose is of each column.

When this is done, the teacher selects one characteristic and writes it on the left side of the table, directing students to write the same words on their charts. Then the teacher asks students to read about the male hogan to see if there is information describing the "diameter of the floor" of this structure. If the information is found, students write the number in the column under "Male Hogan."

When this is done, the teacher instructs students to read information about the female hogan with regard to the same characteristic (the diameter of the floor). When the students find the answer, "15 to 23 feet feet," the teacher instructs them to write that range of measurements under the column for "Female Hogan." The teacher might do this for two, three, or four characteristics, so that students "get the hang of" what they are to do.

The teacher may then tell students to read information about hogans and then suggest other characteristics on which the two kinds of hogans might be compared. (The **Sidebar A** is an answer key, a table filled out with information about hogans gleaned from the descriptions in Handout 1).

(d) Report Comparisons

Various words can be used to express the same comparative relationship. For instance, after comparing the floors in two types of hogan, one elementary student might say, The diameter of the female hogan is longer."

Another student would be equally correct in stating, "The diameter is *shorter*. For the male hogan, I mean."

Yet other students could be correct when using the phrases "more than" or "larger area" with regard to the floor of the female hogan. Another fifth grader might say, "The range of the floor's diameter is bigger for the female hogan."

In each instance, the facts are the same, but the key words used to express these are different. Thus, there are often

many ways to express a comparison with words.

(e) Summarize with Symbols

The third column in the table is a narrow space for marking down a symbol that summarizes information about various characteristics. Students should indicate what they find out about particular characteristics.

- If students determine that information about the things being compared is the same for a particular characteristic, then they can write an equals sign (=) in this space.
- If students determine that information about the things being compared is not identical for a particular characteristic, then they can place a crossed-out equal sign (≠) in the space.
- If students determine, that a difference is really important in a particular context (as explained below), they can emphasize this difference by placing a second hatch mark through the equals sign (≠).

(f) Make a Decision

Students must consider the situation or context in which the decision is to be made. For instance, does the top speed of a skateboard matter to a particular user? Does the size and shape of a dwelling matter to the person using it? Asking students to compare dwellings only on the basis of the structures' physical features is different from asking them to compare dwellings on the basis of their utility for and meaning to the people who use them. Being aware of the context of a comparison is important because it will help students determine whether information about a characteristic matters, and whether it is important for deciding if things are "different from" or "similar to" one another. After a topic has been thoroughly researched, students should look over all of the information gathered about all of the characteristics of a set of things and then make a decision about whether the things are the same, different, or similar.

(g) Write an Essay

There are different formats or structures for students to express their final comparative decisions in essay form. It is best to use one, and then once mastered, help students use other formats. Probably the easiest one is for students in grades 4 through 6 to write a version of the five-paragraph essay.

1) Describe what is being compared and state the conclusion
2) Describe features of two things that are the same.
3) Describe features that are similar to one another.
4) Describe features that are different from one another.
5) Restate the original conclusion and explain why the student made this decision.

A Collaborative, Team Activity

To help students become competent in the activity of comparing, teachers should consider having them work in collaborative teams, with which we have had success at all grade levels.

1. Assign students to collaborative teams. Tell the teams you are going to show them a way that they can go about comparing anything they want to compare.
2. Write the word "COMPARE" on the board. Follow with the definition.
3. Do the same for "IDENTICAL TO," "DIFFERENT FROM,"

Sidebar A (Teacher Key) **A Comparison of Navajo Male and Female Hogans**

Attribute	MALE HOGAN	Comparison Decision (symbol)	FEMALE HOGAN	Comparison (words)
Number of main poles required	3	≠	many poles	different number
Diameter of the floor (feet)	6 to 12 feet	≠	15 to 23 feet	smaller (M) / larger (F) in diameter
Vestibule?	yes	≠	none	different structure
Material for Side	earth	=	earth	same
Smoke hole?	yes	=	yes	same
Direction that entry faces	east	=	east	same
Cooking permitted?	no	≠	yes	different uses
Used for sacred ceremonies?	yes	≠	no	different uses
Children can play inside?	no	≠	yes	different uses

and "SIMILAR TO".

4. Discuss the example of the two skateboarders with the students. Do they understand why one person might judge things to be different, while another says, "No, these are just the same"?
5. Have teams review the meanings of these terms. Give them some information about two things and ask them whether these things are identical to, different from, or similar to one another. For instance, show them a Dollar bill and a Quarter. Ask if these are identical to, different from, or similar to one another.
6. If different from one another, ask them to come up with a situation where the dollar and quarter might be seen as being "similar to" one another.
7. Help students to comprehend what a "characteristic," "feature," or "attribute" is. Help them to comprehend the difference between a "characteristic" of a thing and a description of the same thing. Perhaps have them practice by making a list of characteristics of one or two familiar items in class. For example, have a student stand up; help him or her to see that "height in inches" is a characteristic, whereas "Mary is 61 inches tall" is a description; and that "number of legs" is a characteristics; whereas "the desk that Johnny is sitting in has four legs" is a description.
8. Inform students that in comparing, they must first make a list of characteristics and then look for information about each thing and find the exact information for each characteristic. Help them to see that having a list of important characteristics is a key to doing a good job in their comparing.
9. Distribute **Handout 1**, "Navajo Hogans." Tell the teams that, as they read about hogans, they should write down a list of characteristics of hogans that might be compared with one another. Characteristics might be "shape of their interior floors," "whether people could have fun within the structure," and, "number of major poles used to form the exterior walls." Encourage the teams to generate a lengthy list of such characteristics or attributes, which might allow for a more in-depth comparison.
10. After students have worked on their lists for 5 or 10 minutes, invite them to check to see if their lists include descriptions of how people use the two types of hogans (function). Elementary students will naturally list physical attributes (form) of the hogans, but we can also compare the ways that people behave in various spaces. Such "cultural attributes" can also be listed and compared.
11. Distribute **Handout 2**, "A Table for Comparisons," and read aloud the words on the table. Define for students what is a row on this table (a horizontal set of open spaces) and what is a column (a vertical set of open spaces).
12. Select one characteristic and work through a comparison with the class, filling one row of this table, written large up on the board. (**Sidebar B**).
13. At this point, ask each team to work on a second characteristic, following the same steps. Each team can discuss which attribute they will study next and work together to fill out the information across the row. It is important that each student has a chart to fill in, even as the group is doing this activity cooperatively.
14. If the teams and students have filled in their charts appropriately, ask the teams to proceed by comparing all of the characteristics of hogans that they listed earlier (in step 9). Students can compare all of the attributes, as they did for the first two attributes, filling up the table with information, row by row. (See the **Sidebar A**, which is a key for the teacher, a chart that has been completed.)
15. Have students on various teams

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Sidebar B: **Procedures for Making Comparison Decisions**

a) Write down one characteristic (such as the diameter of the floor) in column 1 on the first row.

b) Refer to Handout 1 to find information about the characteristic being compared and read those passages aloud.

c) Write information about this characteristic as it appears in male hogans in column 2 .

d) Write information about this feature as it appears in female hogans in column 4 .

e) Summarize your comparison decision ("same," "different") about this characteristic with a symbol (= , or ≠, respectively) in column 3. If a difference seems especially important in a given context, students must double-hatch the equals sign, like so ≠ .

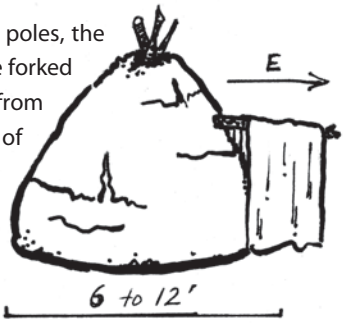
f) In column 5, write down words that you use to express your comparative decision in column 3. These are words and phrases you could use to express the comparisons that have been generated and noted in column 3, phrases such as "is shorter than," "is longer than," "is bigger than," or "has a smaller diameter." Students don't have to make up their minds at this time which phrasing they want to use later when writing a complete paragraph, but should list some options that they could use later.

Navajo Hogans

Handout 1

The Male Hogan

The earliest traditional Navajo hogan is the "male" forked-pole structure. Many historical remains of these structures have been found throughout the Navajo country, especially in northeastern New Mexico. The male hogan is still in use today throughout Navajo reservations. It is used only for sacred ceremonies, quiet conversation, and prayer.



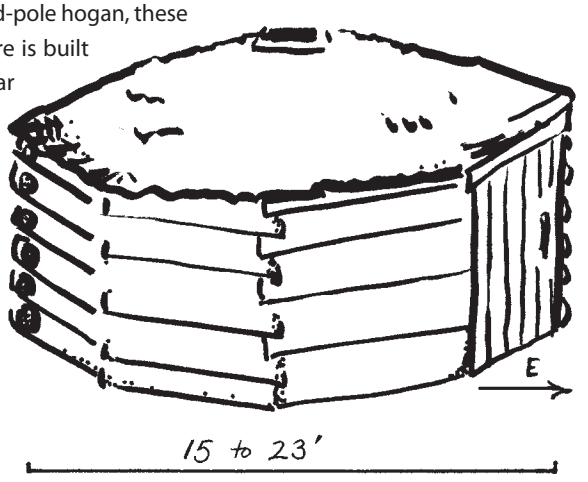
Built according to traditional and religious rules, the male hogan consists of three main forked poles, the bases of which are set in the ground at the north, south, and west cardinal directions of a circle. The forked ends interlock at the top to brace them in place. Two poles are laid up against the interlocked forks from the east, or the "first light of dawn," to form the entryway. Male hogans are not large. The diameter of the floor inside is usually from 6 to 12 feet.

The structure is covered with earth, except for the entry and smoke hole. A vestibule (a 3- to 6-foot extension of the entry) is sometimes added to the structure. Formerly, a woolen blanket covered the entry, but more recently, plank doors serve this purpose, except when a ceremony is being held.

Navajo ceremonies and songs for curing the sick are conducted in male hogans. Any ceremony performed in the hogan is automatically sanctified. The male hogan is also a place to go to think, pray, or seek advice from others. Today, even if a family occupies a frame house, there is usually a small male hogan close by that is reserved for such purposes.

The Female Hogan

A second type of hogan is the cribbed-log, or "female" hogan. Like the forked-pole hogan, these structures are seen today in all parts of the reservation. The basic structure is built by stacking logs or poles horizontally, one upon the other, to form a circular building—leaving an opening for the entry, which faces east. At a height of about 4 or 5 feet, the builder uses smaller logs, and the circumference is diminished gradually to create a dome. The entire structure, except for the smoke hole and entry, is then covered with earth to seal all cracks and openings.



The female hogan is larger than the male hogan, but it does not contain a vestibule (like the male hogan). Traditional female hogans could be from 15 to 23 feet in diameter. The fire in the female hogan heated the home and was used for cooking.

The female hogan is a safe and inviting place for the family to live. In it, the children are allowed to play, sleep, cry, and laugh while the women cook, weave, talk, and entertain. Here too, children are born and men can tell jokes and stories.

Modern Hogans

Custom still dictates that upon entering the hogan, women go to the right, or the north side where the kitchen supplies and utensils are maintained, and the men go to the left or south side. The rear of the hogan is the place of honor, usually reserved for the patriarch or matriarch of the family.

Modern hogans show many changes in building materials, roof designs, and walls. On the outside, they look about the same and are about the same size as the female hogans in which Navajo families have lived in for hundreds of years. Today, however, you might find glass windows on the sides and a modern door at the entrance. Inside you are likely find a bed with a mattress, refrigerator, sink, running water, bathroom, couch, TV, and DVD player.

Sources: Suzanne Eltsosie, *Diné, The People* (Marquette University Libraries, "American Indian Social Studies Curricula," www.marquette.edu/library/neh/eltsosie/resource/hogan.htm).

Handout 2

A Table for Comparing _____ and _____

Characteristic	Name of First Thing	Comparison Decision (symbol)	Name of Second Thing	Comparison (words)

MAKING COMPARISONS

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share some of their comparisons. Help them to hear the diversity of expressions that can be used for saying much the same thing.

16. Tell students that one of the ways to report their results is to write an essay. Review with students the five paragraphs in a comparative essay (described above). Have each team discuss what could be in such an essay based on the chart it has created.
17. During the next class, or as a homework assignment, tell students to individually write a five-paragraph essay comparing Navajo male and female hogans, using information recorded on their charts. (Writing on one piece of paper as a team, which involves reaching consensus on each sentence, is often a much more time-consuming activity. Thus, this is an individual writing assignment)
18. Just before the close of the activity, have teams review all the steps for comparing things. Let the students know that, in future lessons, there will be things that can be compared with each other. You might be asking students to construct a chart that records their research and summarizes how they thought through a comparison. This is a skill that can be used over and over.

Conclusion

By using the model, examples, and collaborative team activity described here, teachers might be able to help their students master the basics of comparing. One or two class periods might be all that is required for the activity, but the skill can then be applied to new topics.

As a result of this new learning, students might complete in-class and homework comparison assignments correctly on their first attempt more often. They might then correctly answer comparison questions on tests more often. Most important, students will begin to thoughtfully compare things on their own inspiration. Teachers could praise students for being proactive in carefully comparing things in social studies class, in other subjects, and in real life situations.

Limits of page space prevent us from providing information on more parts of this model for comparative thinking—a model that includes procedures for comparing any two or more things in any content area and any grade level. We have done our best to describe the bare essentials of our model for this type thinking. We would appreciate any feedback, comments, and suggestions about your efforts to use the information in this article with your students.

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