ACTIVITY

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TO SLEEP, PERCHANCE TO DREAM

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Concept

There are probably more myths and misunderstandings about sleep and dreaming than about any other aspect of human behavior except sex. For most people, sleep and dreaming will occupy one third of their lives, yet few individuals are aware of even the most rudimentary information about this activity. For example, consider the following facts: Apparently everyone dreams; that is, there are no nondreamers, only nonrecallers. In an 8-hour night of sleep most people will have from four to five dreams, usually on quite unrelated topics. The great majority of dreams are in color. Sleep learning apparently does not occur. Dreams are not always filled with easily interpretable psychological meanings, as popular literature would have one believe.

The study of sleep and dreaming is still in its infancy. Most of what we know about this area is the result of research occurring in the last 25 years and is principally due to the development of electrophysiological techniques (particularly the electroencephalograph, or EEG) and the discovery, in 1953, of rapid eye movements (REMs) during sleep.

The purposes of this exercise are (a) to help students focus attention on their own sleep and dreaming patterns, (b) to generate data for class discussion, (c) to introduce students to the concept of data collection in sleep and dreaming, (d) to illustrate appropriate statistical measures for summarizing the data, and (e) to aid students in understanding the interpretation of data in general and these data in particular.

Preparation of Class

Pass out the "Sleep and Dreaming Record" to each student, providing multiple copies—one for each day that records will be kept (14 consecutive nights provides a good sample). Tell the students why the data are being collected and indicate that participation is voluntary. Explain that they can conceal their identity by marking their records with a number (six or seven digits in length) that they make up on their own. This procedure allows them to identify their statistics in reference to others in class when the summary data are provided later. Note that it takes only about 5 minutes each day to complete the record.

Instructions

Ask all students to begin their records on the same day and to keep their record sheets at home. Request that during the time the records are being kept, discussion among students regarding their sleep and dreaming patterns be minimal to avoid unintentional influences on the data. Give explicit instructions on record keeping. (It is a good idea to have one "practice run" to insure that everyone understands the record-keeping system before continuing for 14 days.) The record provided is only a sample. Feel free to modify it as appropriate.

When the time period is completed and students have turned in all of their records, the tedious part begins for the teacher—the

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summarization of the data, for which a calculator is most helpful. Each student's records should be summarized separately, and data should be analyzed for the group as a whole. A summary sheet for the students should then be prepared, which lists everyone who participated (by number) and provides the group analyses. For example, Student #107654 can examine that column number of the summary sheet to find a mean sleep time of 7.3 hours (over 14 days), with a range of 5.6–9.7 hours. The student can then compare these figures with those of other students and with those for the class as a whole, based on the group data.

Sleep and Dreaming Record

Student Number _____ Date _____

1. Total sleep time (in hours) _____. On the time line below, block out your sleep periods, including naps.

6:00 p.m.	10:00 p.m.	2:00 a.m.	6:00 a.m.	10:00 a.m.	2:00 p.m.	6:00 p.m.

2. Total number of awakenings during major sleep period. _____ (Do not count the final morning awakening.)
3. On the scale below, rate the quality of your night's sleep (in your opinion). Circle one of the numbers from plus four to minus four.

bad −4 −3 −2 −1 0 +1 +2 +3 +4 good

4. In your judgment, how many separate dreams can you recall at least a fragment of? _____
5. It is possible that you will recall some of your dreams better than others. Using percentages, estimate the amount of each dream recalled.

Dream 1 ___ Dream 2 ___ Dream 3 ___ Dream 4 ___

6. How many of these dreams could you relate to presleep experiences of the dream day? _____
7. Did you appear as a character in the dreams you recall? In how many? _____
8. How many of your dreams were in color? _____
9. Were there stimuli in your dreams of a nonvisual nature? Check the following if appropriate.

sound ___ taste ___ touch ___ smell ___

Discussion

The data students generate will add considerable personal interest to the topic of sleep and dreaming. Further, the statistical treatments will help them understand how data are summarized and analyzed to make them more meaningful. It might be useful to save the summary statistics from classes for comparison with those of future classes.

Optional

Although it is not necessary, teachers may wish to provide some statistical measures of relationship between some of the variables for which they have collected data by using the technique of correlation. For example, is there a relationship between the number of hours people sleep and the number of dreams they recall? Or is there a relationship between the subjective sleep quality rating and the number of awakenings one experiences during the night? A number of correlational analyses can be computed to answer these and other questions. To compute these values, a calculator is needed. Some calculators have a built-in correlation function; otherwise, the computational formula in Appendix A should be used. It is important to remember that correlation is a measure of the degree to which two variables are related and does not necessarily specify the *nature* of the relationship. That is, one *cannot* assume that if two variables are shown by correlation to be related, that the relationship is one of cause and effect.

Concept

Suggested Background Readings

Dement, W. C. *Some must watch while some must sleep.* San Francisco: Freeman, 1974.

Webb, W. B. *Sleep: The gentle tyrant.* Englewood Cliffs, N.J.: Prentice-Hall, 1975.

Instruction