

1971

Grading Practices: A Current Bibliography

Follow this and additional works at: <https://scholarworks.uni.edu/istj>



Part of the Science and Mathematics Education Commons

Let us know how access to this document benefits you

Copyright © Copyright 1971 by the Iowa Academy of Science

Recommended Citation

(1971) "Grading Practices: A Current Bibliography," *Iowa Science Teachers Journal*: Vol. 9 : No. 1 , Article 8.

Available at: <https://scholarworks.uni.edu/istj/vol9/iss1/8>

This Article is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Iowa Science Teachers Journal by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

how to apply to the darts the control methods used on the plane. Many students began to use some of these methods after about 1½ class periods. After these exercises, the parts of plane wings and the history of flight were reviewed to enrich the students' feeling of how flight is controlled and the problems it presents. It was noted that a more direct approach would be to have the students try to fly a load in their paper planes instead of building the darts.

Another investigative approach was through steam turbines built in class. Turbines were built from three-inch diameter copper circles with a section of glass tubing inserted through the center for an axle. Supported straight pins were inserted into the glass tube to serve as bearings. The steam source was a flask stoppered with a one-hole stopper that had an eyedropper in the hole to serve as a steam jet. Work and power could be measured by attaching a string to the axle, attaching various weights to the string and measuring the time needed to raise the weight from the bench to the axle. The students were then told that vanes needed to be cut in the copper sheet so the steam had something to push against, and a model was demonstrated. The students were to work on their own to try to see how much horsepower they could develop. After three class periods, several students had been able to improve their turbines from less than .001 hp to .05 hp and greater. All students had proposed ways to improve their turbines which were exactly what industries have had to do to improve theirs.

All of these exercises were devised on the principle of letting a student discover something instead of having the teacher tell him. What the students learned from these exercises was a product of their own thinking. The teacher did not do the thinking and then hand the students the results. The teacher acted only as a guide or reference. The students have learned, not memorized. The student was involved so that interest was high and discipline needed was low. The students brought into use anything that they had previously experienced, and thus what they learned was more relevant. These exercises were used in conjunction with other types of exercises and traditional lecture-demonstration classes. The teacher presented the more difficult concepts and gave certain pre-lab background, reviews and historical enrichment of a topic. In this way, the students learned something and class was more interesting; the students learned to observe, generalize, hypothesize and predict—all basic steps in the scientific method. This approach also helps to work off fat that may have accumulated on students' thinking muscle.

Grading Practices: A Current Bibliography

This article, published by the Commission on Undergraduate Education in the June issue of the Biological Sci-

ences News, is now available from CUEBS, 3900 Wisconsin Avenue, N.W., Washington, D.C. 20016. It is a brief bibliography listing 42 items pertaining to grading practices and their reform.