



Background

One paradox that many teachers see is students who appear to be gifted, smart and intelligent, yet have visible signs of learning disabilities. Are these students gifted? Are these students disabled? How could it be classified? Could it be both? There is no general agreement. My desire to work with these students led me to wonder if using blended learning and other online resources will help their understanding of chemistry, resulting in higher grades.



W.A. Chemistry Class

There are children who are both gifted and learning disabled displaying extraordinary talents or strengths in some areas and incapacitating or weak traits in others (Baum, 1990). So how can these students be assisted? One way is using blended learning.



<http://www.dreamsyntax.org/concept-of-mixed-learning-design/>

Purpose

To see how the use of blended learning and online resources will help chemistry students improve their understanding of difficult chemistry topics, such as The Mole.

Question

How has the use of blended learning helped both my chemistry students and the Bridge Students improve their understanding of chemistry?



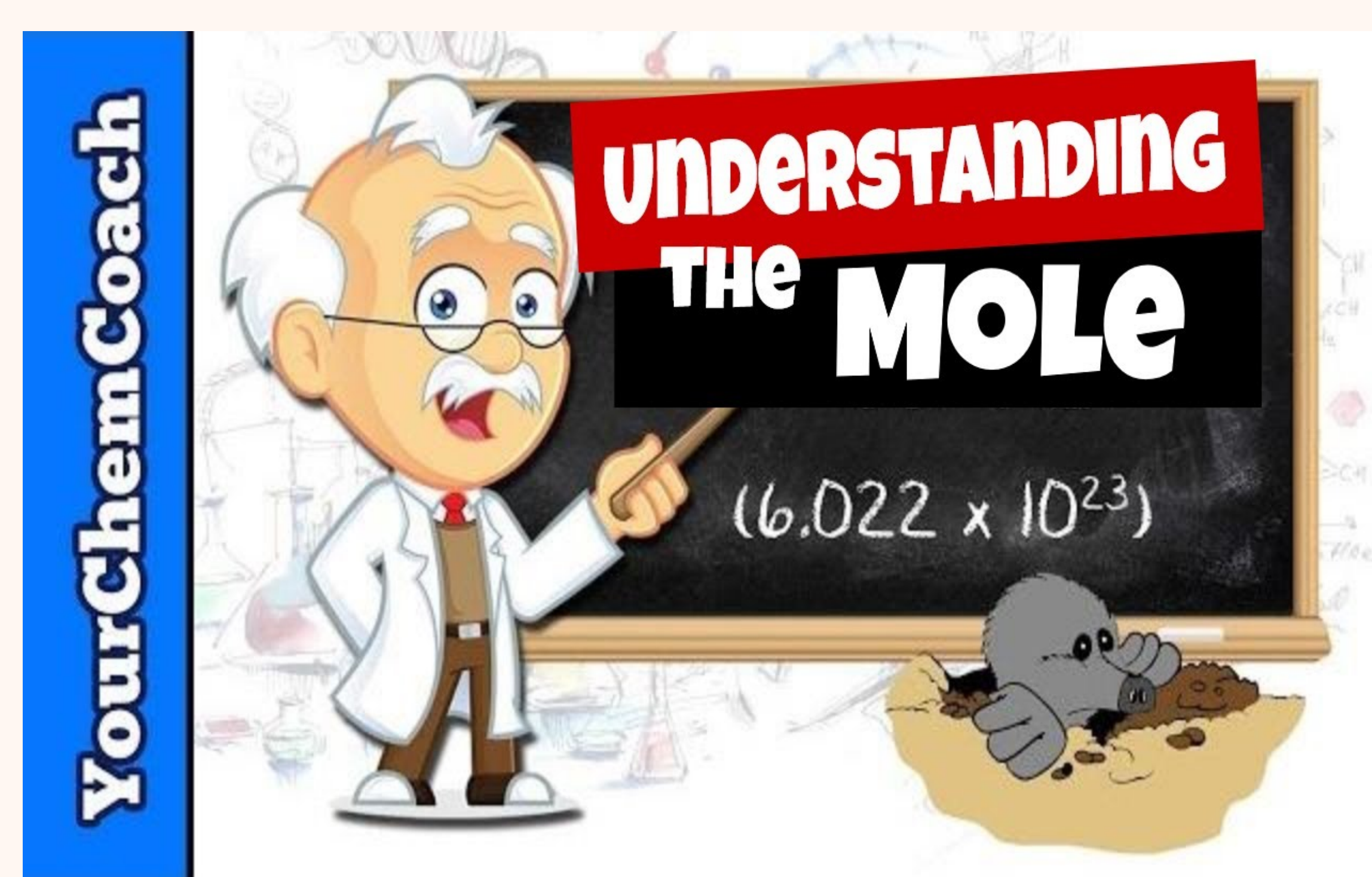
Methodology

Previous to this intervention students were taught using the traditional directed instruction method.

PARTICIPANTS



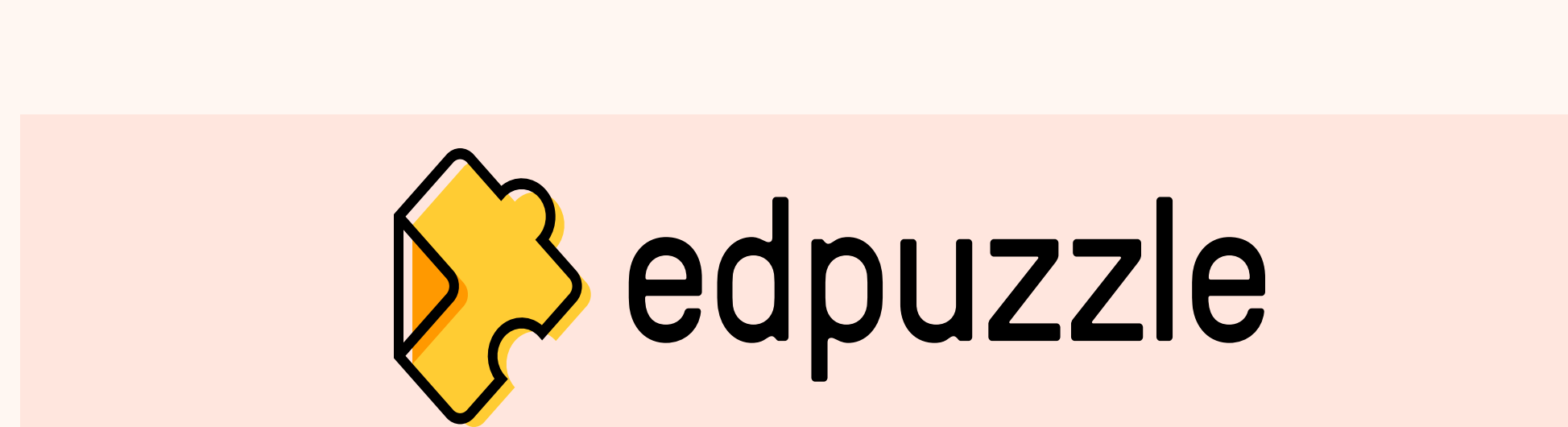
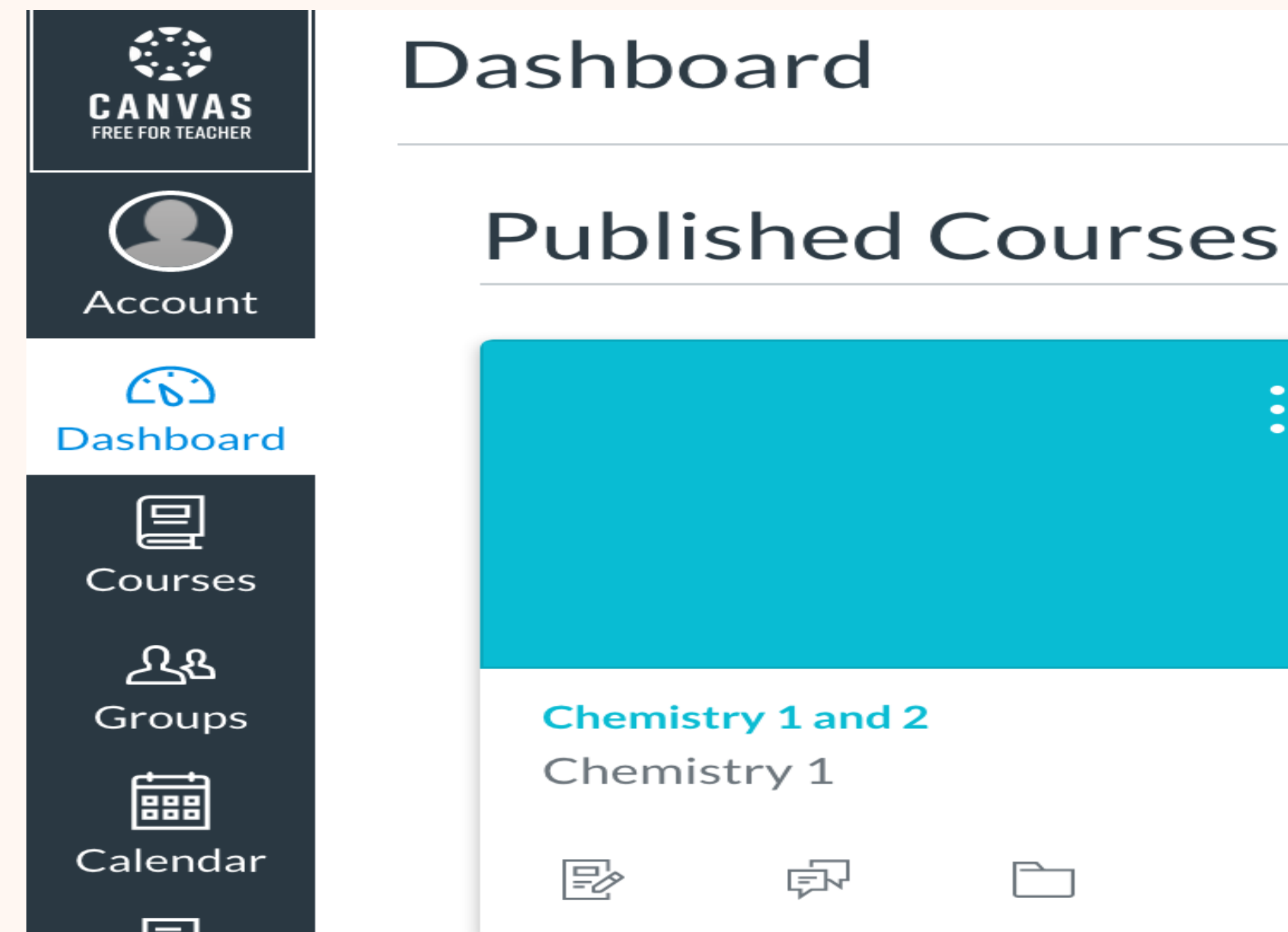
The study was carried out in the regular chemistry class that consisted of two sections with 35 students in total.



Mole and How to Use the Mole in Chemistry. by M. Causey describes what a mole is and how to use a mole in stoichiometry <http://www.mrcousey.com>

The blended learning consisted of students watching videos at home, school, or both and then working with classroom activities that foster active learning for 5 weeks.

Resources:



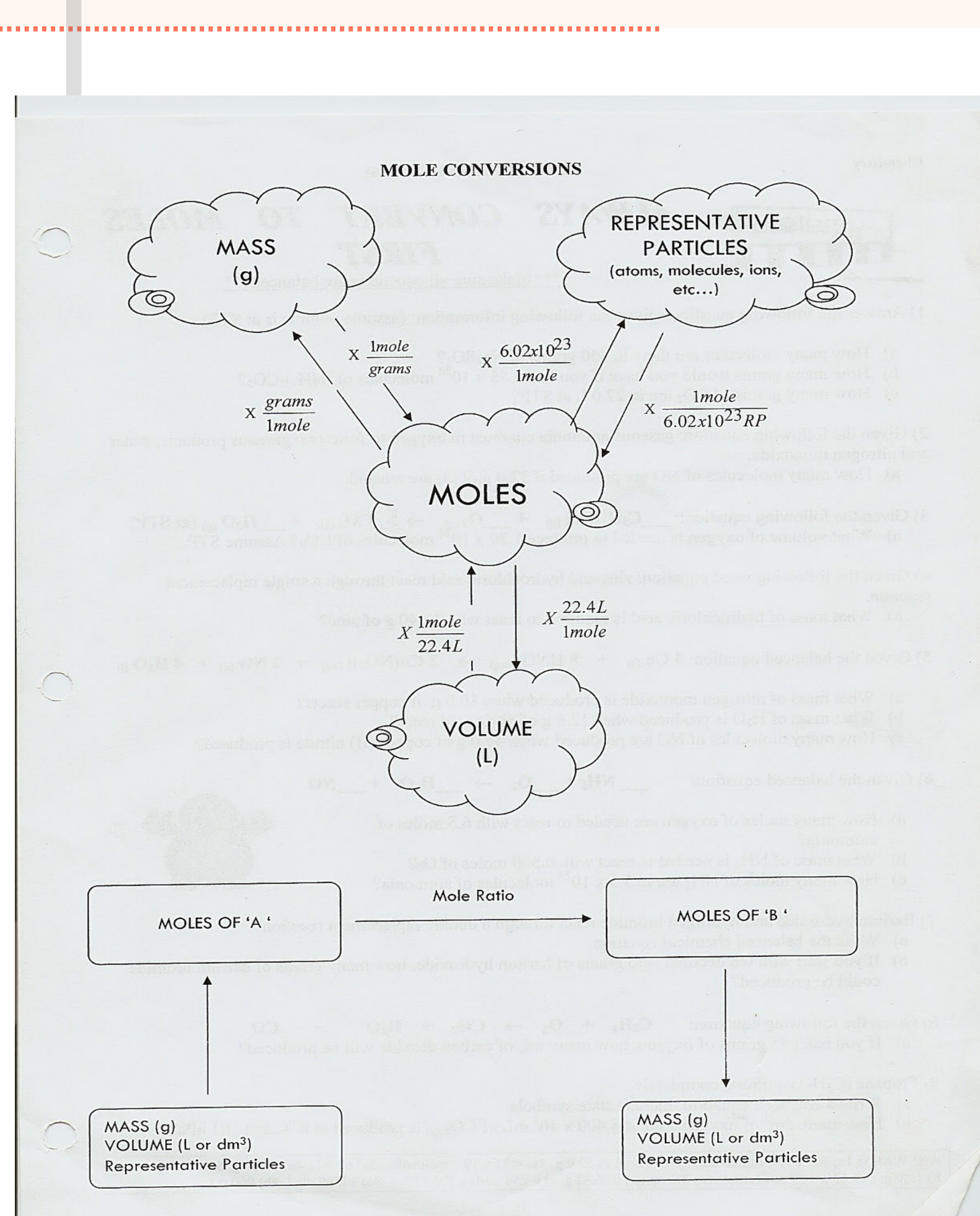
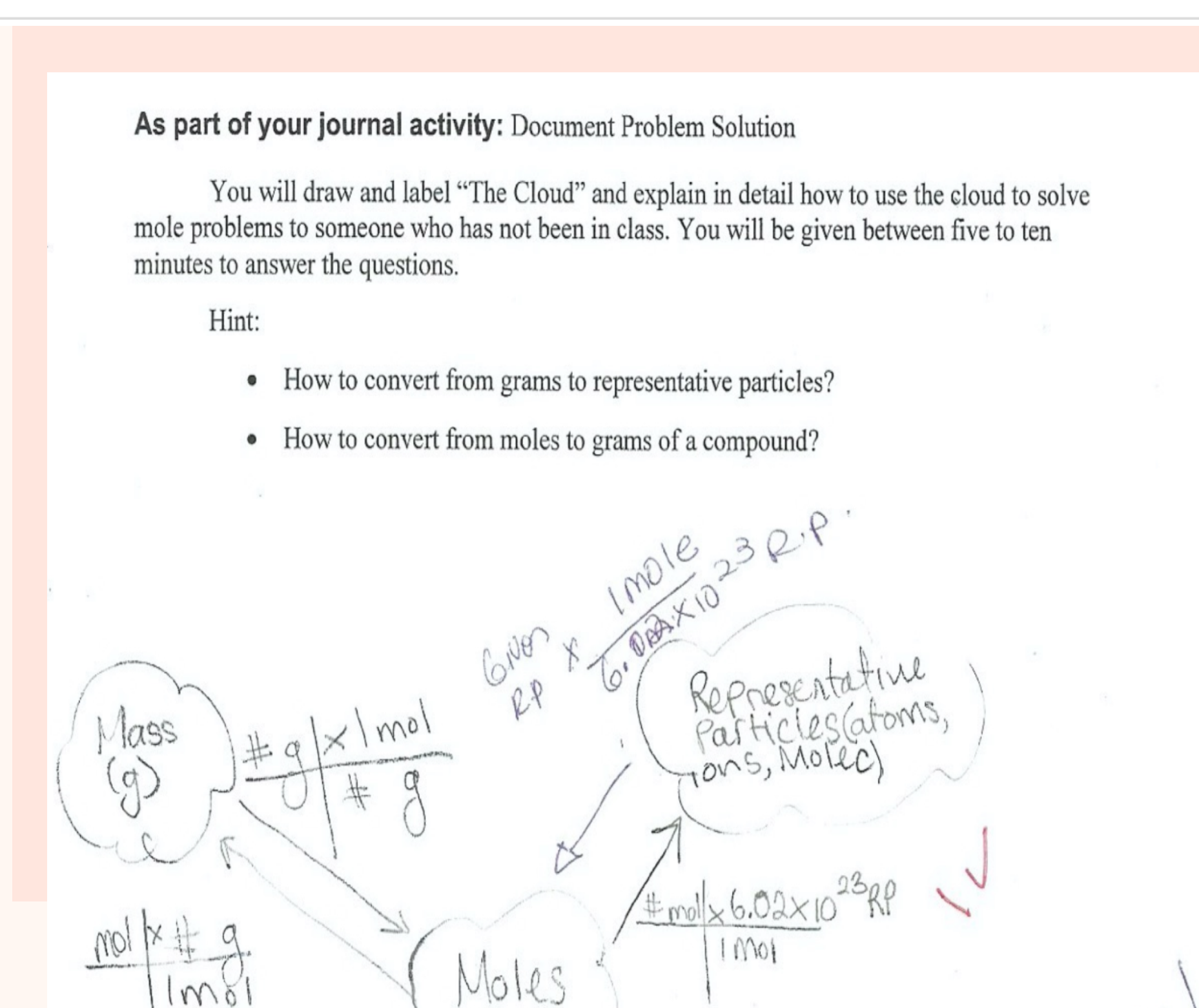
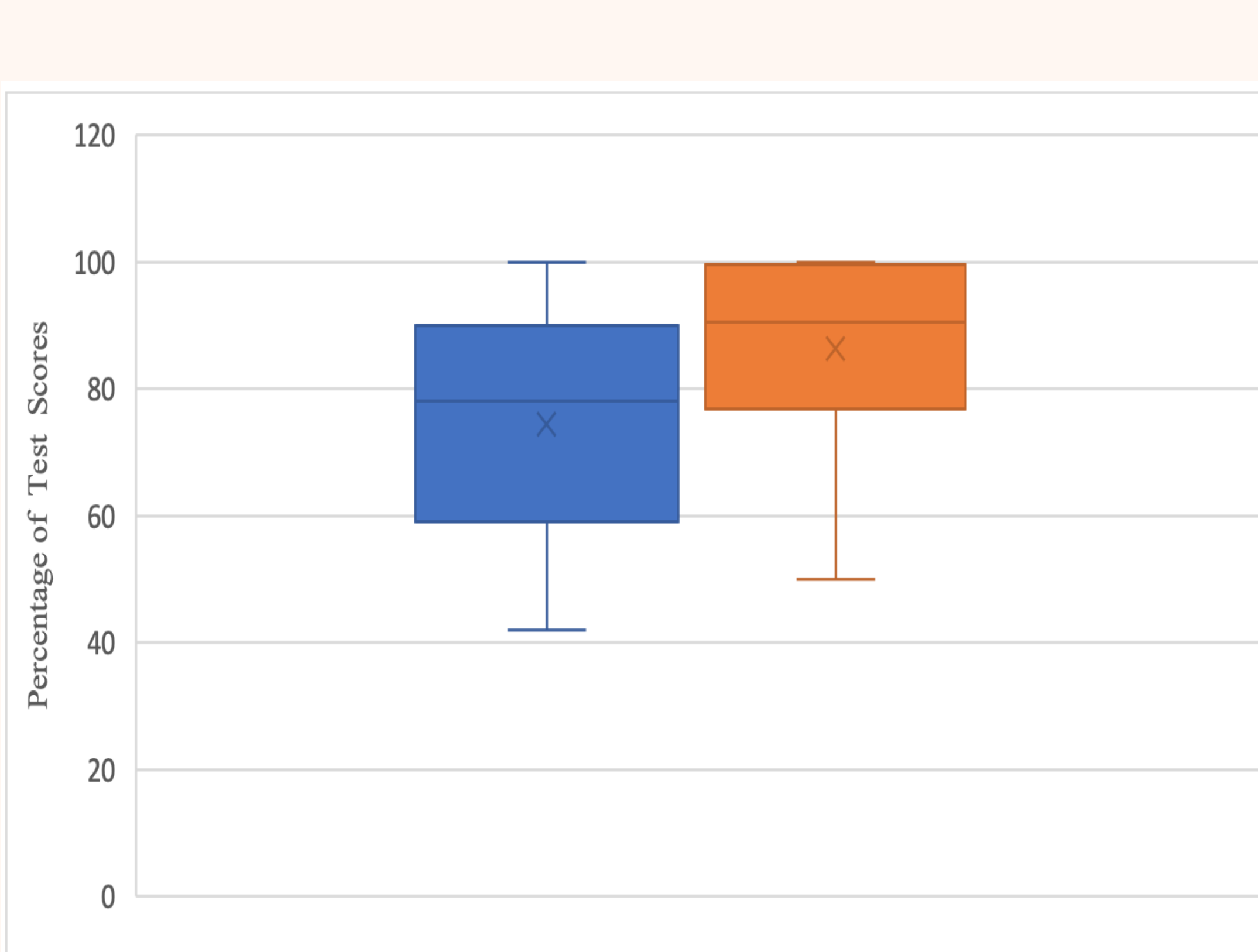
<https://edpuzzle.com/>

Results

The use of blended learning helped students improve their understanding of difficult chemistry topics such as the mole, and grades were improved. This was proved by the results of the Mole Test from regular chemistry classes of 2019 and 2020 that were compared and test scores improved significantly.

Improvement was verified using t-Test. The p -value is .006325. The result is significant at ($p < .05$).

The use of visual aids such as the cloud helped students too.



Conclusions

The results indicated that the use of blended learning and online resources was a success. One interesting discovery was that students enjoyed the use of blended learning, but they still preferred in-person instruction first.