



Do Misconceptions Affect Students Grades?

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The Question:

Do students have misconceptions about evolution and do those misconceptions adversely affect their grade in Biology?

- What misconceptions do students have?
- Do misconceptions change?
- If there is not a change will it impact their grade on the natural selection assessment?

The Students:

Webster City High School has 580 students. For this 2 groups of students were studied. Group 1 consists of 14 students, 29% are boys and 71% are girls. Group 2 has 15 students with 47% of them male and 53% female. All 29 students are currently passing biology and non of them receive special education services.

The Method:

All students will be given a survey before the natural selection unit to determine what, if any, misconceptions the students have. The eight day natural selection unit will be tailored to specifically address the identified misconceptions. After the unit, students will be given a post survey to determine if they still have their misconceptions. Students will also be given a short answer test where they can show the information that know. The grade on the assessment will be compared to the average grade from all previous tests to determine if students received a lower grade. The surveys along with the test will be used to determine if misconceptions affected the students grade. Focus group interviews were conducted at the end

The Data:



Data Source:	Pre-survey	Post-survey	Student Interviews	Average Assessment Grade	Natural Selection Grade
What misconceptions do students have?	XXXX		XXXX		
Do misconceptions change over the course of our natural selection unit?	XXXX	XXXX	XXXX		
Are grades adversely affected if misconceptions do not change?			XXXX	XXXX	XXXX

Analysis:

The pre and post surveys will be analyzed to see if misconceptions changed over the course of the natural selection unit. Students' natural selection test grade will be compared to the average of their previous tests. The survey results will be compared to the test results to see if the students that still have misconceptions have a lower test grade.

Summary:

Several misconceptions were discovered with the pre-survey. Some examples of misconceptions encountered include: evolution can not be supported through lab experiments, organisms, such as dinosaurs, still exists and scientific theories are educated guesses. The comparison of assessment grades did not indicate that misconceptions, of any kind, had a negative impact on a students' grade. Focus group interviews also showed that while students may not have agreed with what was being taught, they were able to put their differences aside and perform well on the test.