

**THE DIFFERENCES OF STUDENTS' LEARNING OUTCOMES BY
USING QUANTUM LEARNING AND DIRECT INSTRUCTION
IN SUBTOPICS ELECTROMAGNETIC WAVE
IN PHYSICS OF FIRST GRADE OF
SMA NEGERI 1 BERASTAGI
ACADEMIC YEAR 2011/2012
Ruth Fricilia (48121087)**

ABSTRACT

This research is purpose to know the differences of students' learning outcomes by using Quantum Learning and Direct Instruction in subtopics Electromagnetic Wave in Physics of first grade of SMA Negeri 1 Berastagi academic year 2011/2012.

This research included to the quasi experiment. The population in this research is all of classes in first grade (X) semester II SMA Negeri 1 Academic Year 2010/2012, this population is eight classes in amount. The sample in this research is class X – 7 and class X – 8 (two classes are selected of eight classes). Kind of sampling that is applied in this research is simple random sampling. Instruments that used as learning result test namely objective test as big as 20 items that contains of five options and already valid.

From the research obtained the average of pretest in experiment class is 28.57 with standard deviation is 6.55 and average of pretest in control class is 24.05 with standard deviation is 9.30. Calculation of posttest average in experiment class is 74.76 and control class is 66.19. Data already tested is normal distribution and homogeny. To do hypothesis test used with t two parties obtained $t_{\text{calculate}} = 3.15$ and $t_{\text{table}} = 2.02$. From the research also obtained the average of learning activities on the whole meeting in experiment class is 80.66% and include into good category. While the average of learning activities on the whole meeting in control class is 65.18% and include to the good enough category. This case means there are differences of students' learning outcomes by using Quantum Learning and Conventional in subtopics electromagnetic wave in physics of first grade of SMA Negeri 1 Berastagi Academic Year 2011/2012.