

## ABSTRACT

**Siti Nurshera Effendi, NIM 4153342017. Development of Student Worksheet By Using Guided Discovery Learning on Vertebrate Topic Grade X SMA Negeri 1 Perbaungan.**

This research aimed to produce student worksheet by using guided discovery learning on vertebrate topic that valid and effective to be used in learning. This research was designed using 4D development model consisting define, design, development and disseminate. The student worksheet was validated by material expert, design graphic expert, and learning strategy expert, then the response from teacher and students were obtained. The result of feasibility of student worksheet from material expert was 90%, learning strategy expert was 87%, design graphic expert was 81%, biology teacher was 96%, and percentage of students responses were 92% with a very feasible category. Then the result of effectiveness from the paired t-test obtained  $t_{count} > t_{table} = 11.875 > 1.689$ , significantly the posttest score was higher than the pretest score. While the Independent t-test obtained  $0.001 < 0.05$  there was differences in mean value that significant. Then result of t-test was proceed with N-Gain test score to know the category of effectiveness was medium.

**Keywords :** *student worksheet, guided discovery, vertebrate*

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