



4. ทักษะการคิดวิเคราะห์หลังเรียนสูงกว่าก่อนเรียนอย่างมีนัยสำคัญทางสถิติ  
ที่ระดับ .05

5. ความพึงพอใจของผู้เรียนต่อการจัดการเรียนรู้ด้วยมัลติมีเดียที่พัฒนาขึ้น โดยรวม  
อยู่ในระดับมากที่สุด



มหาวิทยาลัยราชภัฏมหาสารคาม  
RAJABHAT MAHASARAKHAM UNIVERSITY

**TITLE :** The Development of Multimedia Based on Constructivist in Science Learning Strand of Digestive System for Pratomsuksa 6

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### **ABSTRACT**

The purposes of this research were 1) to developed of multimedia based on constructivist in Science Learning Strand of Digestive System for Pratomsuksa 6 by the researcher, 2) evaluate the developed multimedia based on constructivist by the researcher, 3) compare the pre-test scores to the post-test scores of the achievement of the students who studied with the developed multimedia, 4) compare the pre-test scores to the post-test scores of the analytical thinking of the students who studied with the developed multimedia 5) study learners satisfaction with learning by using the developed multimedia. The target group of this research is 22 students of Bandonumrao school (Pratomsuksa 6) at the fist semester on years 2009. The research instruments were multimedia based on constructivist, an instruction evaluation form , an achievement test, an analytical thinking test, and a satisfaction evaluation form. The statistics used were percentage, mean, standard deviation, and t-test.

The results of the research were as follows:

1. Multimedia Based on Constructivist in Science Learning Strand of Digestive System for Pratomsuksa 6 The important element had Problem Bases ,Mission, Data Bank, Scaffolding , Useful hint and Game.
2. The experts opined involving the quality of the developed multimedia based on constructivist at a positively high level.
3. The learners had a higher learning achievement mean score than before learning at the .05 level of statistical significance.
4. The learners had a higher learning of the analytical thinking mean score than before learning at the .05 level of statistical significance.
5. The learners showed their satisfaction at a very high level.