This study, which is an application of management engineering in education, was conducted to develop a handbook to guide teachers in the integration of computer technology in the classroom. The handbook was based on a survey of the state of technology integration in elementary schools of Laoag City in terms of teachers’ perceptions about technology access in their schools, information technology skills of faculty and the barriers to technology integration that the teachers experience.

Data were gathered by surveying mathematics teachers in elementary schools located within the city proper. These were used by the researcher as a basis for developing a handbook for technology integration using a technology integration model which addresses the barriers indentified in the survey. Multimedia materials were also developed and used during the try-out conducted during the Sama Summer with MVF Math tutorial Program. Participants were composed of children who were in grade 4, 5 and 6 who came from different elementary schools in Laoag City.

A survey by the researcher which was participated in by teachers from Laoag City elementary showed that their preferred teaching methodology is student-centered teaching. Most of them have not integrated technology because of the unavailability of resources, their lack of training in the use of technology and how it can be applied in teaching, and their fear that most of their students know more about computers than they do.

Before the multimedia were used, these were first validated by a panel of experts. This ensured that the content of the material developed was correct and met the objectives of the topics presented. Recommendations of the panel were also implemented before the materials were used.

Based on the result of the validation, the materials developed are clearly aligned with the math curriculum as indicated by the
mean (4.0); are logically arranged allowing for smooth progress through the content covered mean (3.67). The results also show that the content supports lesson objectives, and higher-level thinking skills are developed as shown by the means (3.67). The results also suggest that the materials validated can be used for the topics mentioned and could be further enhanced to satisfy the needs of a particular class. It also shows that it is adequate in terms of functionality and in aiding the teacher in integrating technology successfully in the classroom.

A pretest and posttest was administered to the participants of the Sama Summer with MVF math tutorial program to determine the effectiveness of the materials developed.

The difference determined if there was a significant difference between the pre and posttest. T-test was used and critical level was set at .05.

For the grade 4 students, the mean of the posttest is 8.17 points higher than that of the pretest which indicates that the pupils’ knowledge of constants and variables increased with the use of the multimedia material. The t-score of 2.34 is however slightly lower than the tabular value of 2.57 which means it is not significant enough because the sample was small.

For the grade 5 class, the computed t-value of 1.64 is less than the tabular value of T which is not significant at .05 level. However the posttest mean is higher than the pretest mean which indicates that the pupils learned as a result of the strategy used. The computed t-value did not reach the tabular level because of the small number of students in the class.

Results of the pretest and posttest of Grade 4 pupils show that there is a significant improvement in their performance since the computed value of 2.45 is less than the critical value of 5.07. Thus, the materials developed were very effective in improving the performance of the pupils in the topic Percentage, this is because the pupils were very eager to learn and participated very actively.