My thesis project involves the design and implementation of a series of laboratory exercises to be used in an upcoming Mobile Development class which makes use of the Android platform. In order to validate the effectiveness of the labs we will be conducting a routine survey at the end of each lab which all lab participants are required to complete.

1 Expected Results

The labs which I will be creating are designed to compliment the robust online documentation provided by the Android platform. The labs as a whole are intended help the students quickly understand the major components of the Android mobile development platform in a manner that allows them to develop mobile applications independently. Each lab will have a clearly stated set of learning objectives. It is the goal of each lab to ensure that students gain the understanding and practice necessary to achieve each learning objective. The labs will do this by providing contextual examples, technical insights, and detailed tutorials.

2 Hyposthesis

I intend to show that through the use of contextual examples and tutorials designed to compliment a robust online documentation, students can be taught how to affectively use the Android mobile development. Furthermore, the students will achieve all of the learning objectives outlined in each lab and acquire all of the programming skills associated with them.

3 Independent and Dependent Variables

We will be relying on a combination of self-reported subjective information as well as objective information to evaluate the affectiveness of the labs. The self-reported subjective information will come from the surveys that are collected from the students at the end of each lab. This information will tell us how
the students perceived the affectiveness of the labs. The objective information comes from the products of the labs, which are the programs that the students will be creating in order to complete the labs. These programs will then be evaluated with respect to the expected deliverable of each lab. Since the process of creating the expected deliverable is the source of education, we can then extend the evaluation of the program as an evaluation of the lab’s ability to educate students about certain concepts. In both cases the labs end up being the independent variables and the dependent variables are the deliverables the students will generate through completion of the labs. These deliverables are the completed surveys and the Android programs.

4 Measures

The surveys will be constructed with questions that can be answered on a 1-5 agree/disagree rating scale. The questions will allow the student to decide how affective the lab was at enabling them to achieve different learning objectives. Each survey will be reviewed and given an overall score. For each lab the scores from each survey will be combined to reflect an overall subjective rating on the labs affectiveness.

The programs will have specific grading criteria, chosen for the purpose of identifying whether a student was able to exemplify a skill or learning objective the lab was intended to convey. Each program will be evaluated against the grading criteria and assigned a score. For each lab the scores from each program will be combined and reflect an overall objective rating on the labs affectiveness.

5 Experimental Protocol

The course will be conducted over the course of ten weeks. On the Monday of each week, a new lab will be distributed. Each lab will be due on the Monday following its distribution. The students will have the entire week to complete the lab. The students are expected to complete the labs on their own, but are allowed to seek out help from one another or the instructor. When finished with a lab, the students will submit their lab deliverables and complete the standardized survey regarding the labs affectiveness. The surveys and submitted deliverables will then be evaluated, scored, and aggregated. At the end of the course the labs as a whole will then be evaluated with respect to the data collected.