Writing Problem Statements, Hypotheses, and Operational Definitions

Problem Statement
I plan to study the effects of two reading programs (Literacy Collaborative and Waterford) on the reaching achievement of third grade students at Oxbow Elementary School.

Hypotheses
1. With students of heterogeneous reading achievement, there will be no difference in the mean gains in reading achievement for students taught by Literacy Collaborative and those taught by Waterford.
2. For students scoring in the lower 30 percent on prior reading achievement, those taught by Literacy Collaborative will have a greater mean gain than those taught by Waterford.
3. For students scoring in the upper 30 percent of prior reading achievement, those taught by Waterford will have a greater mean gain than those taught by Literacy Collaborative.
4. For students scoring in the middle 40 percent on prior reading achievement, there will be no difference in mean gain for students taught by the two different programs.

Operational Definitions
*Individuals included in the study:* All third graders at Oxbow Elementary School.

*Literacy Collaborative:* The set of reading materials required by this organization and the required activities.

*Waterford Reading Program:* The set of computer hardware and software purchased from the publisher and its suggested activities.

**Exogenous Variables**
Reading programs: Literacy Collaborative and Waterford

**Endogenous Variables**
Gain score in reading achievement (e.g., the difference between scores on two forms of a standardized reading test, one form given prior to the study, the second form given after the study.

**Possible Intervening Variables**
Teacher
Teaching style
Learning style
Student scholastic ability

**Possible Control Variables**
Prior reading achievement
Gender of student