**CHAPTER III**

**METHODOLOGY**

This chapter presents the summary of the design process, methods and the procedures of the system. It is also containing the research design, operation and testing procedure, instruments and techniques used. This includes the following: research locale, research design and procedures of data gathering.

**Research Locale**

This study entitled “Automatic Baby Bottle Washer and Sterilizer”, was conducted in Lucban, Quezon. The researchers chose Lucban, Quezon due to its closeness to its closeness to the location of the researchers and the respondents that the researchers chose. Testing the system would also be done here.

**Respondents**

The respondents of this study are twenty(20) randomly chosen mothers/ guardians with child/children who are using baby bottle in feeding. The respondents will test the acceptability of the machine with the use of questionnaires. The researchers acquired information about the manual cleaning of the bottle that will be converted to automatic cleaning.

**Research Design**

The researchers used the applied method of research. They used this method for its focuses on a technology to solve a specific problem. The researchers aim to solve the problem of guardians in keeping the baby bottles clean and safe. By automating the cleaning and sterilizing of the baby bottles the physical effort of the guardian of the baby will be reduced. Different technologies will be used to build the system making this study fall under the Applied Research category. Thus, the researchers used this scheme as the base to perform and develop the study.

The system development phase is shown below.

Planning and Designing

Evaluation

Testing

Assembling

Coding

Constructing

Gathering Materials

**Research Instrument**

In conducting the research, the researchers used various materials and references to acquire knowledge to conduct the study.

1. **Internet Articles**

The researchers used internet articles in acquiring knowledge about the study. They gathered various articles related to the study.

1. **Published Research**

Going to library and finding published research enabled the researchers to acquire new information in conducting the study.

1. **Questionnaires**

**Procedures**

The researchers first gathered the necessary data in constructing the system by reading published and unpublished books, internet articles, related studies and consulting experts on the topic. The knowledge that the researchers acquired was then applied in their design.

The researchers then used a step-by-step process to obtain the data need in the design of the system, as indicated:

1. **Planning and Designing**

After gathering the data and determining the materials and the proper design needed the system, the researchers then came up with a design of the system which was based on the knowledge acquired. This helped the researchers to develop the best design in the system.

1. **Gathering Materials**

After the planning and designing, the researchers used and considered most appreciate component by determining its functionality, cost, quality and availability in the market.

1. **Constructing**

After the planning and designing, the researchers used and considered most appreciate component by determining its functionality, cost, quality and availability in the market.

1. **Coding**

The coding of the system was based on the design of the system. The programming language to be used depended on the materials needed in the study.

1. **Assembling**

After constructing and creating the code, the researchers assembled it into the device or the machine. They consulted people who are knowledgeable in constructing the machine in order for the design to be as appreciate as possible.

1. **Testing**

The researchers tested if the device was effective and safe to use.

1. **Evaluation**

The last step is evaluating the system. The system was evaluated based on the test conducted by the researchers.