This study aimed to formulate a proposed enhanced slip casting method for the production of ceramic novelty items. Specifically, it attempted to answer the following questions: 1) What is the status of the current production of novelty items?; 2) What is the proposed enhanced slip casting method?; 3) Is there a significant difference with the thickness and weight of the wares?; 4) How efficient is the proposed Enhanced Slip Casting Method for the Production of Ceramic Novelty Items?

This study was conducted at Northwestern University and it employed the single factor experimental research design and the PDSA model of improvement. Unstructured interview, document analysis and laboratory equipment such as the zahn cup viscometer and graduated cylinder were utilized in the data gathering. Meanwhile, the gathered data in a series of experiments were analyzed using weighted mean and also tested the results for significance using t-test. The series of experiment, in three (3) replicates, aimed to determine what slip density and how much deflocculant is to be used in order to achieve a viscosity of 4.0 to 6.0 poise after the ageing period of three (3) days. A total of seventy two (72) samples of slips were prepared at different slip densities and deflocculant levels. These are slip with densities of 1.68 g/ml. All of the three specified slip densities have a deflocculant ranging from 0.20% - 0.55% increments. The figures that were used are in accordance to the technical specification of the SDB stoneware clay body, a commercially-available clay. The said technical information specified that the density of the slip should be from 1.68 g/ml to 1.72 g/ml and the viscosity should be from 4.0 poise. It also recommended sodium silicate as the deflocculant only be from 0.55% of the dry weight of the clay body. Likewise, Brongniart’s formula was employed to calculate the exact amount of water and clay needed in the preparation of slip.

The results of the study showed that the slip with a density of 1.72 g/ml which a deflocculant level of 0.50% proved to be
promising. It had a viscosity of 4.32 poise after the ageing period of three (3) days, a casting rate of 0.4 mm/min, a cast thickness of 4.0 mm and a definite casting time of 10 minutes. From the results of the experiment, an enhanced production flowchart was developed and trial production was conducted to test the efficiency of the proposed measure. The results of the study showed that there is a significant improvement on the efficiency of the proposed enhanced slip casting method as to: a) the time spent on slip preparation, a 400% reduction in the slip preparation and the cost of per liter of slip as well is down to 399.75%; b) the casting time, from a “no definite” casting time of 7 to more than 10 minutes to a “definite” casting time of 10 minutes; c) the forming rejects, a reduction of 246% was observed for the nightingale lamps. Similar findings were observed for the nursing bust, a reduction of 48.5% was noted; d) the number of cast per day, an increase of 221.4% was observed for the nightingale lamps and an increase of 90.9% was observed for the nursing bust; and, e) for the thickness and weight of the wares, statistically, the results of the study showed that the decrease in the thickness and weight of the wares when a controlled slip was used is highly significant. Likewise, as to potential saving due to the decrease in clay consumption, the potential saving is Php. 0.67 per piece for the nightingale lamp and Php. 0.82 per piece for the nursing bust.

The use of slips that were prepared using the enhanced method made a significant impact on the production of ceramic novelty items.