This study aimed to analyze the common errors in problem solving committed by first year college students of Northwestern University who were enrolled in College Algebra for the first semester of school year 2006-2007.

Specifically, it determined the 1) socio-demographic profile of the respondents in terms of sex, annual family income, parents’ highest educational attainment, type of high school graduated from, and place of residence; 2) attitudes of the respondents toward mathematics in terms of confidence, anxiety, value, enjoyment, and motivation; 3) perception of the students on teaching competency of mathematics instructors in terms of principles and methods of teaching, teacher’s behavior, knowledge of subject matter, personal teacher characteristics, and motivational teacher behavior; 4) common errors in problem solving with regards to representation, mathematical formulation, and solution; 5) association of the errors committed by the respondents and their socio-demographic profile: attitudes toward mathematics; and teaching competencies of their mathematics instructors.

One hundred fifty one (151) first year college students of Northwestern University enrolled in College Algebra for the first semester of school year 2006-2007 were chosen as respondents using proportional sampling.

The study employed the descriptive – correlational design which made used of questionnaire – checklist and problem solving test focusing on representation, mathematical formulation, and solution as main instrument in the data gathering.

The validity and reliability of the problem solving test were analyzed using difficulty and discrimination indices as well as Richard-Kuderson Formula 21 (KR21).

The data were analyzed and interpreted using frequency counts, weighted means, and percentages. Chi – Square Test and
Pearson Product Moment Correlation were used to test the hypotheses. All significant levels were set at $a = 0.05$.

The following are the significant findings of the study:

As to socio-demographic profile; a) Males outnumbered the female respondents; 2) most of them came from families with annual income above threshold; 3) Majority of their parents were college graduates; 4) respondents mostly graduated in public schools; and 5) most of them resides urban areas.

As to attitudes toward mathematics; a) respondents were “slightly agree” towards confidence, anxiety, enjoyment, and motivation in mathematics. In general, respondents have a slightly agree attitude towards mathematics.

As to teaching competency of the mathematics instructors, the respondents perceived them as “very good” in all teaching categories.

As to common errors in problem solving; a) most prone errors committed by respondents for the multiple choice test were on mathematical formulation, second were on solutions and the least is on representation; b) the most common errors committed by the respondents on the problem set were on solution, second were on mathematical formulation and the least were on representation.

As to association of common errors in problem solving and socio-demographic profile; a) there is a significant association between errors on mathematical formulation as to annual family income; b) there is a significant association between sex and annual family income to common errors committed in problem solving; c) On the other hand, errors on representation are not associated to any of the socio-demographic profile of the respondents. As to relationship between common errors in problem solving and attitudes toward mathematics; a) confidence of students in mathematics is significantly correlated to errors committed by respondents in representation and mathematical formulation; common errors in representation and mathematical formulation are significantly correlated to anxiety; c) level of enjoyment of respondents is significantly correlated to errors in representation and solution; d) motivation in mathematics is not correlated to representation, mathematical formulation, and solution.

As to relationship between common errors in problem solving and teaching competency of mathematics instructors; a) principles and methods of teaching employed by their instructors is significantly correlated to both errors of respondents in mathematical formulation and solution; b)
teacher's behavior is significantly correlated to errors in solutions; c) teacher’s knowledge of the subject matter is also significantly correlated to errors in mathematical formulation and solution; d) personal teacher’s characteristics is significantly related to errors committed by respondents in mathematical formulation and solution; e) motivational behavior of teacher is highly correlated to errors in solution.

Based from the foregoing findings, the following conclusions were arrived at:

Majority of the respondents are male from above threshold annual income and with parents who are college graduates.

Most of them were graduates from public schools and residents from urban areas.

The respondents slightly agree on their attitudes toward mathematics.

The respondents perceived their mathematics instructors as very good.

Most prone errors committed by respondents for the multiple choice test were on mathematical formulation, second were on solutions and the least is on representation for the multiple choice test.

Most common errors committed by the respondents on the problem solving part were on solution, second was on mathematical formulation and the least was on representation.

There is a significant association between errors on mathematical formulation as to annual family income. There is a significant association between sex and annual family income.

Common errors in representation and mathematical formulation are significantly correlated to confidence and anxiety. Common errors in representation and solution are significantly correlated to level of enjoyment in mathematics.

Common errors in representation, mathematical formulation, and solution are significantly correlated to motivation in mathematics.

Common errors in mathematical formulation and solution are significantly correlated to principles and methods of teaching, teacher’s knowledge of the subject matter, and personal teacher’s characteristics.
Common errors in solution are significantly correlated to teacher’s behavior and motivational teacher behavior.