# Aplusix 3 Usage Report

- **Overview about "Aplusix3"**

APLUSIX is a learning environment that is designed to help 11-17 year old students learn algebra. This system is designed and developed in the IMAG-Leibniz laboratory.

The main goal of Aplusix is to help students improve their problem solving skills. Students perform their own calculations by typing in expressions and proceeding step by step, as on paper. Aplusix can tell whether the calculations are correct and when the problem is solved. Aplusix also provides a solution for each question and can score students' solutions.

(The main window of Aplusix3)
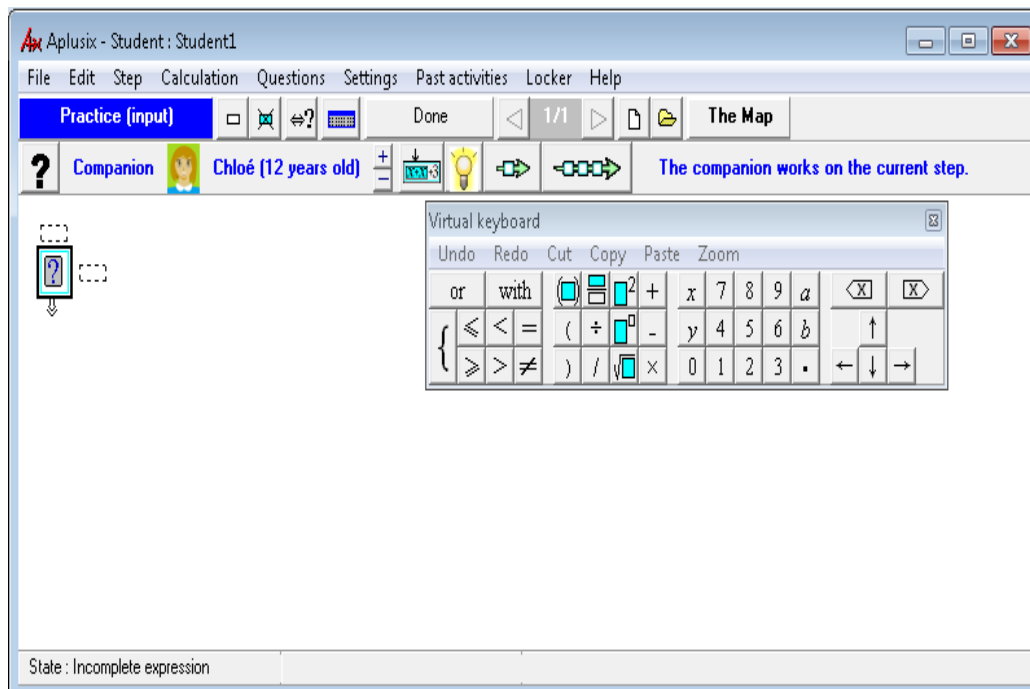
Aplusix 3 is made of three modules:

- The student environment, Aplusix.exe, can also be used by teachers to monitor students' activities and adapt its settings to the needs of a particular group.

- The exercise editor, AplusixEditor.exe, allows teachers to create exercise and problem files. It has its own user manual.

- The administration application, AplusixAdmin.exe, allows teachers to manage their classes on the server. It has its own user manual.
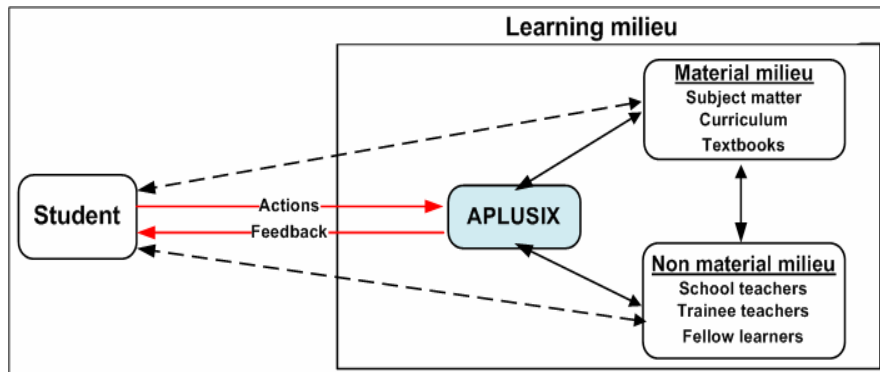

Aplusix contains two exercise maps: one for numerical calculations and the other for algebraic calculations. Each map presents question families as dots organized in a plane; each horizontal line corresponds to a question type and each column corresponds to a degree of difficulty.
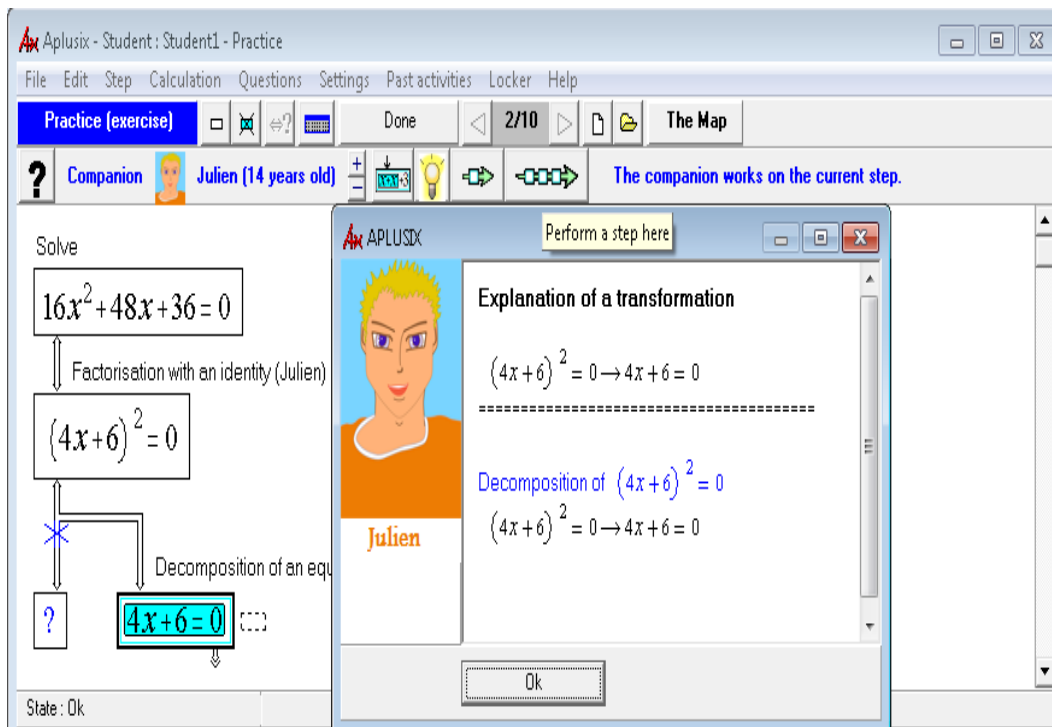
(The exercise map for algebraic calculations)
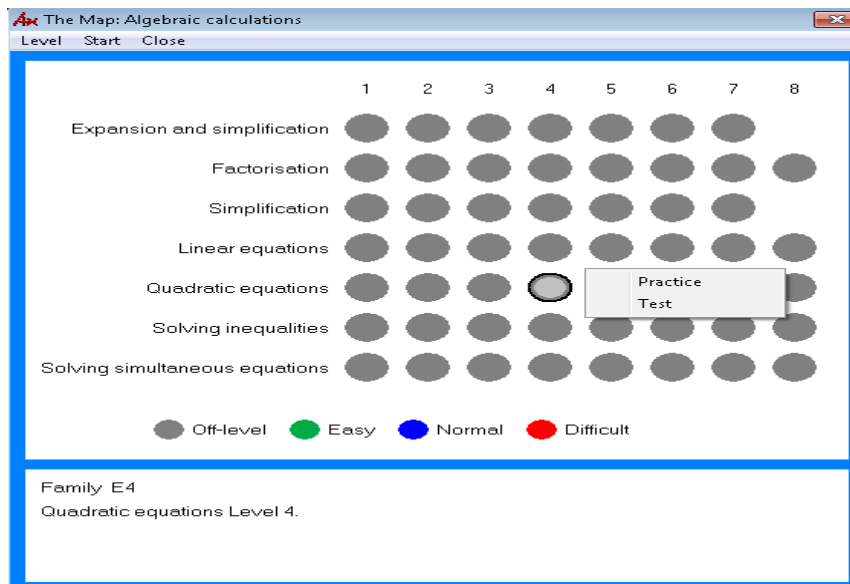
Aplusix also has three companions which are virtual characters who can make

suggestions and perform calculation steps on request.

(The companion Olivia)
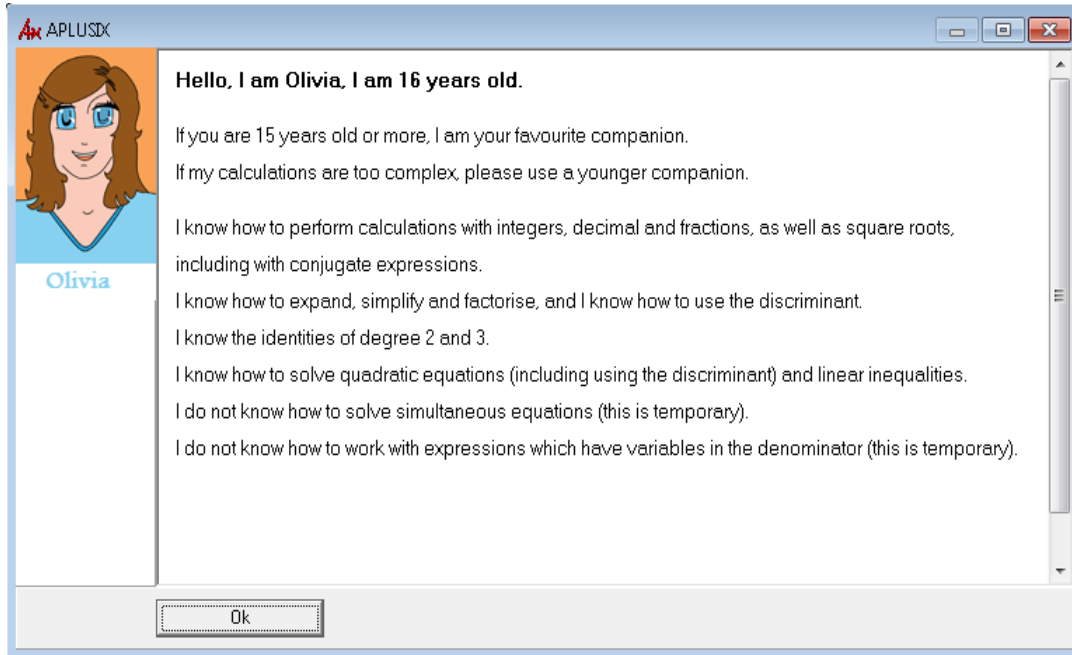
(The companion Julien helps a student to solve a quadratic equation)

(Solving linear equation using the program)

(The Statistics window displays the analysis of students' scores)
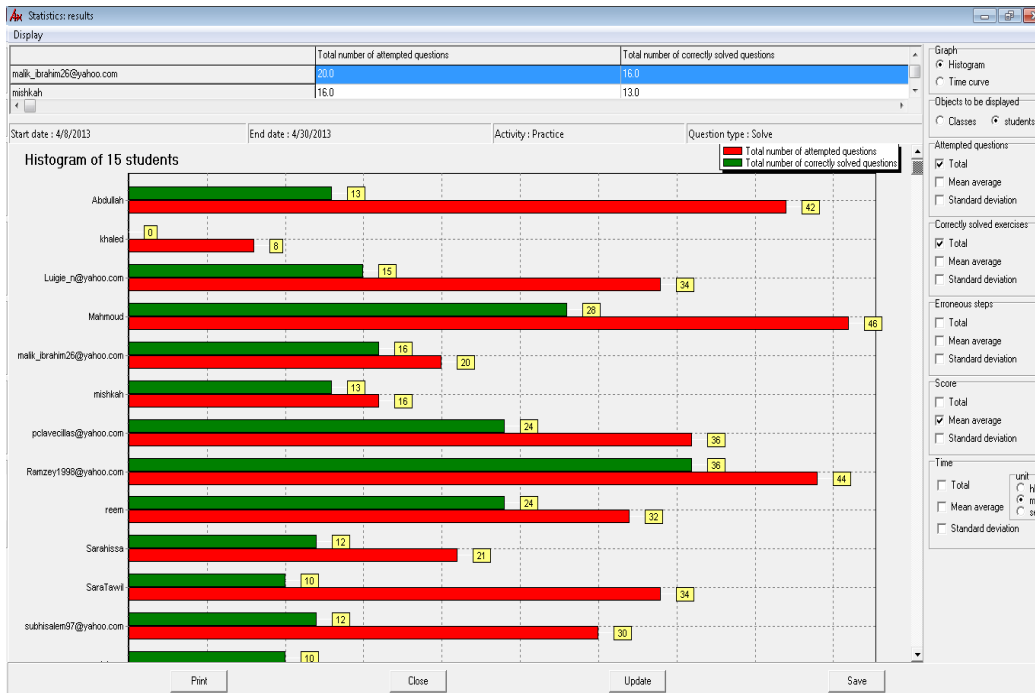
▪ **The usage of "Aplusix3" on Oxford Schools**

In Oxford schools, a training workshop has been held with ninth grade SAT students for "Aplusix3" software on 8/4/2013 which lasted for two hours.

In this training workshop, the students were introduced to this program, and they recognized the parts and the goal of it, beside each student has created his own account on the program.

I am (Ruba Tarawneh) the trainer from the University of Jordan practiced such program and started actual teaching the following algebraic topics to the students on 11/4/2013 till now. These algebraic topics are related to the Math common core curriculum for ninth grades SAT.

1) Simplifying algebraic expressions.

2) The operations on polynomials.

3) Factoring polynomials

4) Solving linear inequalities.

5) Solving linear equations.

6) Solving system of linear equations.

7) Solving quadratic equations.

- **<u>Notes :</u>**

  ➢ The subject teacher noted that the students liked and interacted with
     program effectively, some students finished about three exercises
     within one period and most of them have finished the whole exercises
     in the same level within one period too.

  ➢ The students reaction toward program was so positive in general, they
     liked the properties of the program especially:

     - The required feedback that is provided by the program for students.

     - The help of the companion.

After finishing applying "Aplusix3", the researcher is going to give the students
post-exam to examine the effectiveness of the program and comparing the
results with the pre-exam results too.