

## **French contribution**

## Data collected about pupils' representations (for wp 4 & del A05)

<b>Content</b>	
Content.....	32
1. Subjects investigated.....	34
2. Methodology.....	35
3. Interview .....	36
3.1. Interview 1: Hakima .....	36
Use of computer at home .....	36
Use of computer at school.....	36
Use of computer in other/special places .....	36
Hakima's drawing .....	37
Comments on the drawing .....	37
Hakima's text: "What is to me the usefulness of a computer" .....	38
Comments on the text .....	38
3.2. Interview 2: Elodie .....	39
Use of computer at home .....	39
Use of computer at school .....	39
Use of computer in other/special places .....	39
Elodie's drawing.....	40
Comments on the drawing.....	40
Elodie's text: "What is to me the usefulness of a computer" .....	41
Comments on the text .....	41
3.3. Interview 3: Chahrazed .....	42
Use of computer at home .....	42
Use of computer at school .....	42
Use of computer in other/special places .....	42
Chahrazed's drawing .....	43
Comments on the drawing .....	43
Chahrazed's text: "What is to me the usefulness of a computer" .....	44
Comments on the text .....	44
3.4. Interview 4: Moussa .....	45
Use of computer at home .....	45
Use of computer at school .....	45
Use of computer in other/special places .....	45
Moussa's drawing .....	46
Comments on the drawing .....	46
Moussa's text: "What is to me the usefulness of a computer" .....	47
Comments on the text .....	47
3.5. Interview 5: Kevin R .....	48
Use of computer at home .....	48
Use of computer at school .....	48
Use of computer in other/special places .....	48
Kevin's drawing .....	49
Comments on the drawing .....	49
Kevin's text: "What is to me the usefulness of a computer" .....	50
Comments on the text .....	50
3.6. Interview 6: Rachid .....	51
Use of computer at home .....	51
Use of computer at school .....	51
Use of computer in other/special places .....	51

Rachid's drawing .....	52
Comments on the drawing .....	52
Rachid's text: "What is to me the usefulness of a computer" .....	53
Comments on the text .....	53
3.6. Interview 7: Kevin G .....	54
Use of computer at home .....	54
Use of computer at school .....	54
Use of computer in other/special places .....	54
Kevin's drawing .....	55
Comments on the drawing .....	55
Kevin's text: "What is to me the usefulness of a computer" .....	56
Comments on the text .....	56
4. Collective work: "What might the computers bring in the future?" .....	57
Introduction of collective work .....	57
Elaboration .....	57
The computer, its characteristics .....	57
The computer, what one would do with it .....	57
The computer, what it would look like .....	58

### 1. Subjects investigated

ÉCOLE HENRI WALLON.  
8, allée Darius Milhaud  
94460 Valenton - FRANCE  
Contact : Michel Monteil (abouton@ac-creteil.fr)  
Enseignante : Anne Montagnier  
Élèves : CM1=10-11ans

Henri Wallon is a suburban elementary school, located in the suburbs of Paris. More than 30 per cent of the pupils are from foreign origins. This school is comprised in a priority educational area (ZEP). About twenty per cent of the students who reach the CM2 (grade 5) have already repeated a class.

The school is managed by a director, and 12 teachers are in charge of 10 classes. The 225 pupils attending Henri Wallon school are aged from 6 to 12 years. Although they are in principle grouped by degree of achievement, they are actually inserted in classes that homogeneous as regards the age. There are about 23 pupils in each class.

Henri Wallon school takes as its principal educational mission the improvement of written and spoken language and arithmetic. The necessity to develop citizenship has recently been reinforced. ICT play a secondary role, but teachers and pupils focus their attention on ICT. The school as a whole has elaborated rules for ICT usage, and also a development plan for the future.

Every teacher use ICT in order to prepare the lessons, twice of three times a week.

Among all the teachers, 5 have attended courses in ICT. One particular teacher, Michel Monteil, is in charge of computers for the whole school and the uses with pupils.

At Henri Wallon school, pupils do not have access to computers in their own classroom but move to a special computer room (where the 17 computers the school owns are grouped) when working with ICT. During these sessions, the pupils are supervised by M. Monteil. The class selected for this phase of the REPRESENTATION project is separated into two groups that go to the computer room one hour a week. Computers are mainly used for French and mathematics exercises, or for other content domain relevant to the class curriculum. The software used was programmed by M. Monteil himself. Pupils also work at the school journal with Presswork. The school is connected to Internet, but this year, no related activity has been programmed, in part because of a too slow access to the net.

At Henri Wallon school, as in many French schools, teachers and pupils have never experienced using concept maps.

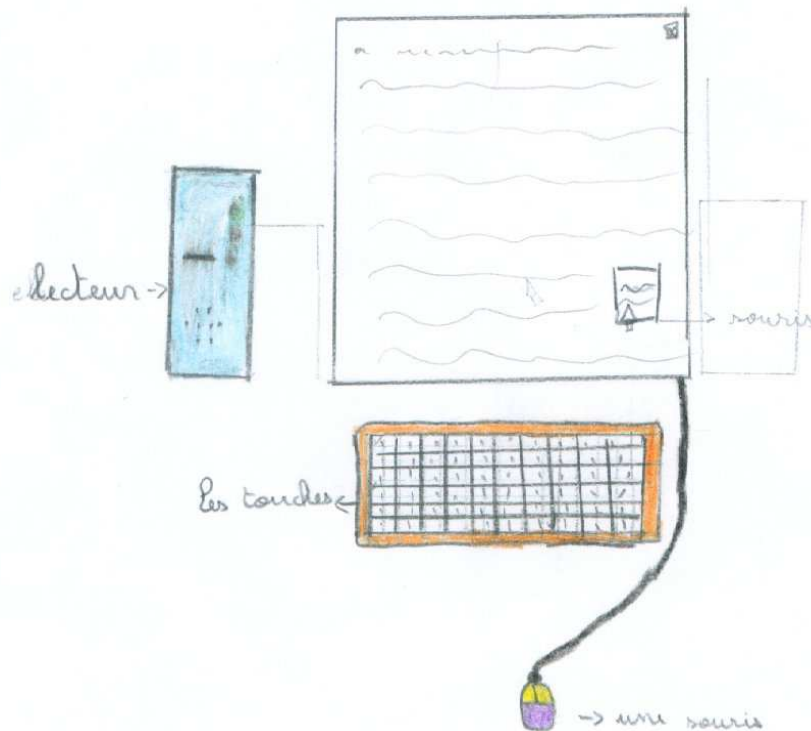
## **2. Methodology**

The pupils had been presented the project by their class teacher. Two student researchers were in charge of collecting data.

Each pupil of the chosen class was asked to draw a computer and to write the names of the different parts of the computer. Later, they were asked to produce a short text on the theme: "What is for me the usefulness of a computer?" When drawing and writing the pupils have been sitting in their own classroom without any computers as models. The computers on the paper have been drawn according to the pupils' conceptions of a computer. The whole session lasted no more than 45 minutes. Afterwards eight pupils were selected for an interview by the whole research team in collaboration with Mr Monteil. This choice has been determined following a preliminary analysis of the drawings and of the texts (with an attempt at balancing the choice among genres, school achievement, and the possession of computer at home). Finally seven children (one girl was absent the day of the interview) were interviewed one by one.

<b>3. Interview</b>
Seven pupils were interviewed according the grid defined, for about 30 minutes each. All interviews were tape-recorded.
<b>3.1. Interview 1: Hakima</b>
<b>Age:</b> 9.5 <b>Gender:</b> F <b>Nationality:</b> French <b>Brothers and sisters:</b> one brother (17) and one sister (14) <b>Parents:</b> Father = (no information). Mother = without profession. <b>Family situation:</b> All the family members live together <b>Hobbies:</b> No particular hobby, except may be drawing. When Hakima stays at home, she does the housework.  <b>Game consoles at home:</b> Supernintendo that Hakima uses for car racing games  <b>Use of computer at home</b> Hakima has a mini-computer that can be used for practising arithmetic, French, and for playing games. This mini-computer has a mouse and Hakima uses it at times for writing stories or for verifying some operations when doing the school work at home. The family does not posses any other computer. Hakima would rather have a computer like those of her school, "because there are a lot of things inside". When asked who placed this "lot of things" in the computer, Hakima answers that they were put inside by the person who constructed the computer.  <b>Use of computer at school</b> Hakima uses computers at school for learning through the software programmed by Monteil. She does not remember the names of the software she uses although she appreciate working with computers.  <b>Use of computer in other/special places</b> None

**Hakima's drawing**



**Depicted parts**

- Screen (with horizontal lines and mouse cursor)
- CPU (with floppy)
- Keyboard
- Mouse with cable connected to screen

**Texts**

- "Drive" for CPU
- "the keys"
- "a mouse"
- "mouse" (for the cursor)

**General description**

A4 drawing partially coloured, frontal depiction occupying less than half the sheet. The screen is drawn as a single square, with horizontal lines representing a text, and an arrow-cursor. A CPU (named "drive") very small as regards the screen comprises a floppy and several buttons. It seems to join the screen through a cable. The keyboard (legend: the keys) is a grid with no special key or numeric keypad. This keyboard is not connected to any other part. The mouse (purple with yellow buttons) is wired to the screen.

**Comments on the drawing**

The CPU ('named Drive') is what allows one to switch on or off the computer, which apparently is the screen + the keyboard, in Hakima's mind. The disks that can be put inside the drive are similar to CDs except that they contain "things for computers", for instance "some exercises, but that are more difficult".

**Hakima's text: "What is to me the usefulness of a computer"**

Words: 19

Sentences: one

Nouns: *stories, games*

Adjectives: none

Verbs: *work, learn, write, playing games*

Main argument: "The computer can be used for working, learning and writing stories, and also to play games."

**Comments on the text**

Hakima does not remember having ever been demonstrated Internet. She knows very little about CD-ROMs and their use. She is not able to specify further the games she alludes to in her text, and drawing seems to be her preferred one



### 3.2. Interview 2: Elodie

**Age:** 10 years old

**Gender:** F

**Nationality:** French

**Brothers and sisters:** one little half brother aged three

**Parents:** divorced. Father = works in computers. Mother = secretary (uses a computer at work)

**Family situation:** Elodie lives with his mother, and goes regularly at her father's.

**Hobbies:**

➤ tennis

**Game consoles:**

She has a console at home but she cannot use it since it misses the pad.

#### **Use of computer at home**

Sometimes, Elodie uses her father's portable computer, mainly to play games.

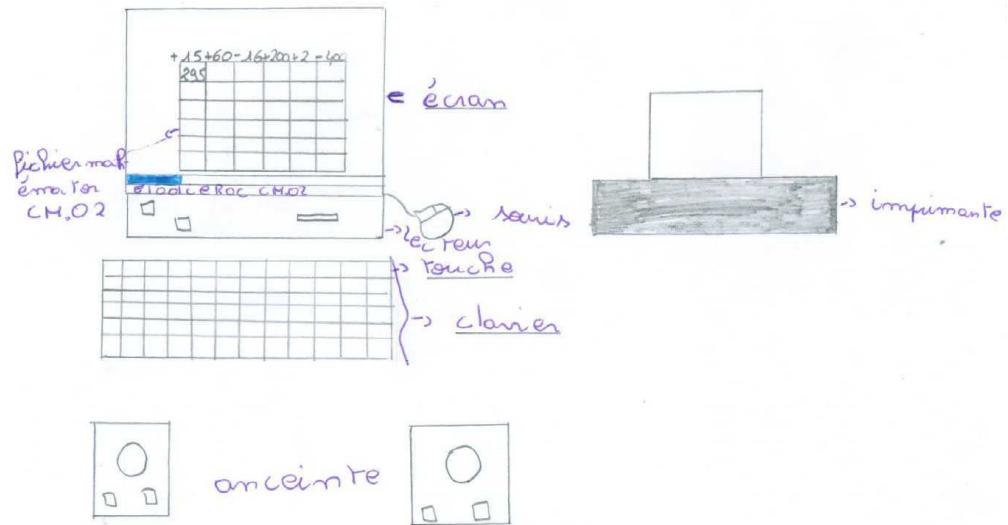
#### **Use of computer at school**

Elodie participates in the school journal, for which she sometimes types texts with Presswork. Presswork is what she prefers when she uses computers at school. She estimates to have no problem with computers, but set of actions she describes performing autonomously seems very poor. Internet is seen as a means to join fan clubs, and to send letters to other fans (impossible to determine if Elodie actually does that). Elodie would like to use the computer in order to compose, collectively, a poem. The main function of computers she perceives is that of being taught by the computer itself (e.g. other language, or how do computers function). It is one of the points that distinguish computers from consoles, one cannot learn and write with a console. In the future, computers will be smaller, like portable, but will allow one to type in the name of a friend and to get automatically a telephone talk with this friend.

#### **Use of computer in other/special places**

None

**Elodie's drawing**



**Depicted parts**

- Screen + Mathemator.
- CPU with floppy and buttons.
- Keyboard
- Loudspeakers
- Mouse wired to the screen
- Printer

**Texts**

- “screen” + ”Mathemator file”
- “drive” (for the CPU)
- “loudspeaker” (misspelled)
- “mouse”
- “keyboard”, “keys”
- “printer”

**General description**

A4 drawing, black and white, frontal description, occupying two third of the sheet. A screen, settled on a desktop CPU with buttons and floppy drive, displays one of the options of WallonSoft. The loudspeakers are in front of the keyboard, as if they were in the place of the user. A printer is depicted aside. The only cable that can be seen is the one that connects the mouse to the screen.

**Comments on the drawing**

Elodie conceives the screen and the CPU (that she never names as such) as distinct parts, although they are joined in her drawing. She did not depict cables, but when interviewed, she tells that “Everything is joined to that”: “the computer, or the screen”. The CPU is named “drive” because one of her class friends told her so.

**Elodie's text: "What is to me the usefulness of a computer"**

Words: 26

Sentences: only one, but long

Nouns: *computer, things*

Adjectives: none

Verbs: *write, play, learn, know how, function*

Main argument: The computer allows one to write, to play, to learn, and to do things that cannot be performed with other things.

**Comments on the text**

No special comment. During the interview, describing the "things" performed (e.g. drawing), Elodie talked about files (but there was no explicit mention of the existence of programs). A file is what can be run. "It is a square that is inside the computer, and that we get with the mouse, we click and it runs images, readings, or games".

### 3.3. Interview 3: Chahrazed

**Age:** 10 years old

**Gender:** F

**Nationality:** French

**Brothers and sisters:** Two little brothers (twins) aged 4

**Parents:** Father = truck driver; Mother = social worker

**Family situation:** Chahrazed lives together with her mother, father and brothers

**Hobbies:**

- reading
- drawing
- judo
- football

**Game consoles at home:**

Super Nintendo, which she is allowed to use only on Wednesday and during weekends.

**Use of computer at home**

There is no computer at home.

**Use of computer at school**

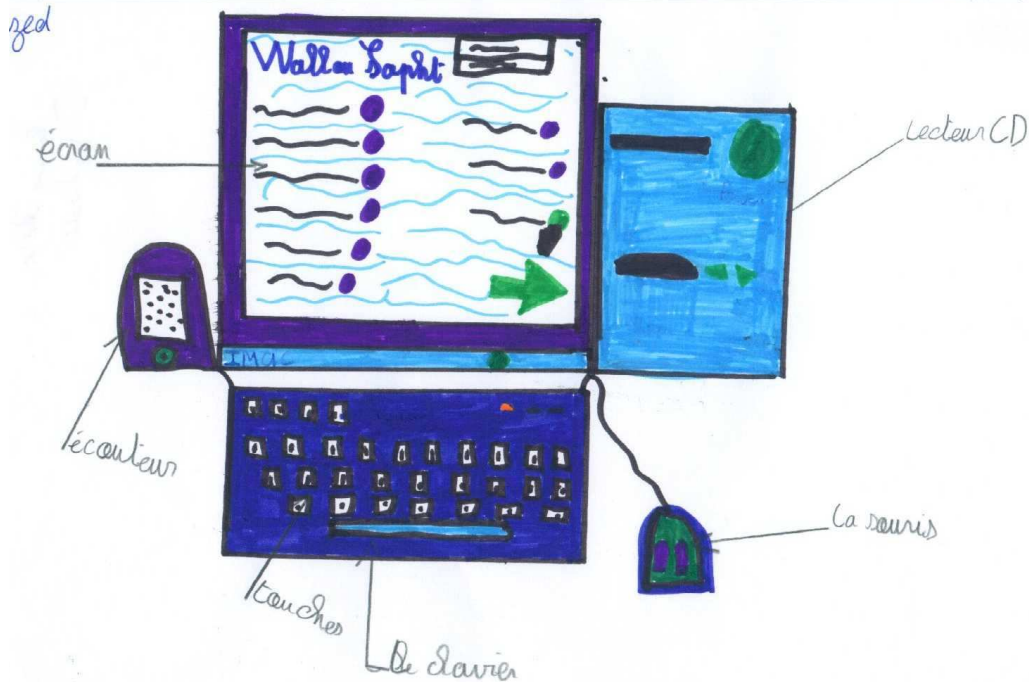
As is the rule in this school, she mainly uses the computer during the sessions of work with the WallonSoft software (see above). When she has completed the school exercises, she is allowed to play some games (solitaire, chess). She also participates in the school journal, for which she sometimes types texts with Presswork.

Chahrazed would like to use the computer to be taught history. She thinks that in the future, the computers will be much smaller, and with less wiring problems.

**Use of computer in other/special places**

She sometimes uses a cousin's computer, mostly in order to play, but also to make drawings and type texts.

**Chahrazed's drawing**



**Depicted parts**

- Screen (WallonSoft)
- CPU (with CD-Drive)
- Keyboard wired to the screen.
- Loudspeaker with buttons
- Mouse wired to the keyboard

**Texts**

- “screen” + “WallonSoft” + “IMAC”
- “CD-Drive”
- “The mouse”
- “loudspeaker”
- “keys”
- “the keyboard”

**General description**

A4 drawing with colours, in frontal presentation. A screen (named Emac, with misspelling) displays the main menu of the educational software the children regularly use at this school. A CPU (with power button and place for floppies), named CD-ROM Drive, sticks on the screen.

**Comments on the drawing**

Chahrazed has forgotten to draw the printer, which she initially wanted to depict. She wrote IMAC but knows that it does not look like an Emac. The CPU (never named as such) is used to put in floppies and CDs (but at school they never use them), and is to be switched on with the computer (that she apparently assimilates to the screen). The CPU does not really stick on the screen, and is probably wired to the computer (the screen) for “if not, if we put a CD, and if it does not join the computer, it would be useless”. His cousin said her that there is a hard disk “wherein you have to put the games on”

**Chahrazed's text: "What is to me the usefulness of a computer"**

Words: 21

Sentences: one

Nouns: *text, games, Internet*

Adjectives: none

Verbs: *work, write (text), play, surf*

Main argument: A computer allows to work, write a text, play games, and surf Internet.

**Comments on the text**

She is almost an exception in her class since she evokes Internet, but she had mainly heard about Internet from advertising. Once, an assistant of the computer-teacher has helped her to find information in a WEB site, but she apparently never has surfed by herself. Her text is written using a conditional tense, expressing what could be the usefulness of a computer, if she had one at home.

### 3.4. Interview 4: Moussa

**Age:** 10 years old

**Gender:** M

**Nationality:** French

**Brothers and sisters:** one big brother, two little brothers, and one big sister.

**Parents:** father = unknown profession; mother = unemployed

**Family situation:** Moussa lives together with his mother and his mother's friend. He never sees his father. His brother and sister live in another place

**Hobbies:** football, basket, tennis

**Game consoles at home:** Megadrive.

#### **Use of computer at home**

There is no computer at home, but if he had one, he would like it to be "with many games, and many other things that come from computers".

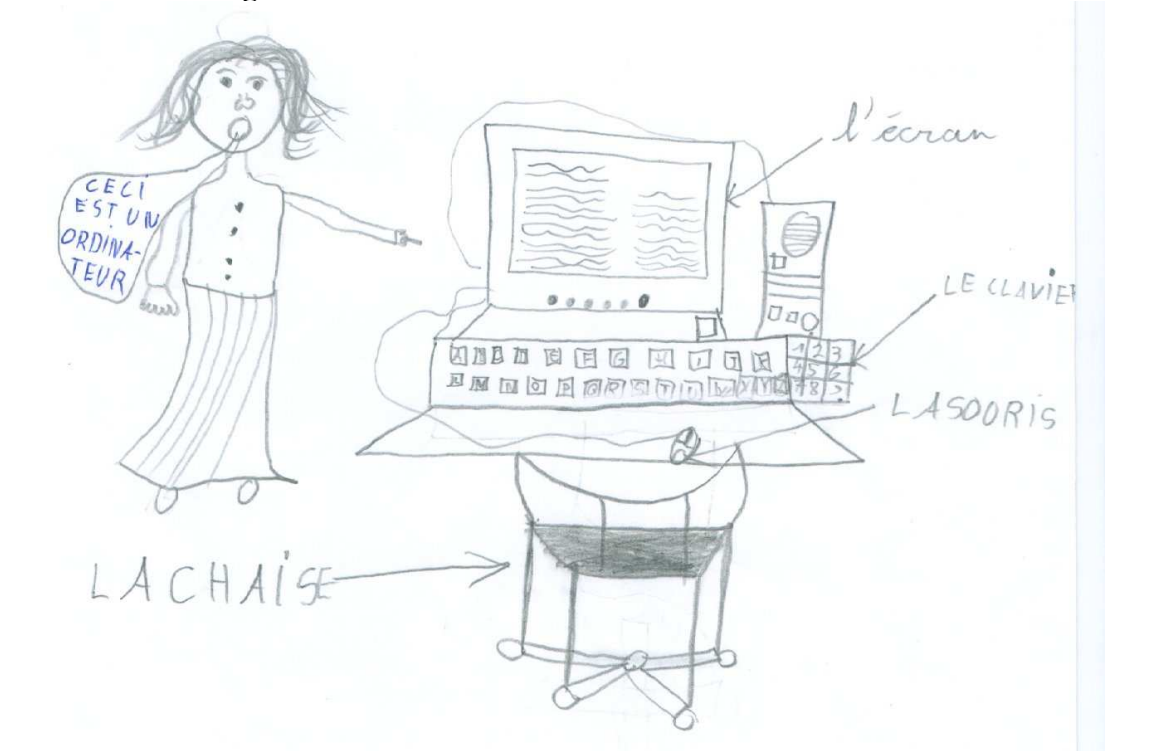
#### **Use of computer at school**

Moussa begun to use computers at school past year, to make exercises in French and mathematics. Now he uses computers "to do verbs" (exercises in the WallonSoft program) and for typing, drawing, or colouring. This year, he has been particularly impressed by the geometry software developed in his school.

#### **Use of computer in other/special places**

None

**Moussa's drawing**



**Depicted parts**

- Screen with horizontal lines, and buttons
- CPU with (internal) speaker and buttons
- Keyboard
- Mouse + cable
- Desk + chair + woman

**Texts**

- “the screen”
- “the mouse”
- “the keyboard”
- “the chair”
- “this is a computer”

**General description**

A4 black and white drawing, occupying half the sheet. The description is frontal, with an attempt to give a 3D view for the chair. Every component is connected to the screen. The keyboard is divided into two parts, with a simplified numeric pad and an alphanumeric part which is unrealistic (see the letters disposition on the keys). No function key is depicted. A woman points at the screen and says: “this is a computer.” The screen displays horizontal lines organised in two columns. The tower CPU is smaller than the screen and is not provided with any legend.

**Comments on the drawing**

Moussa originally wanted to draw the computer-teacher and did not manage to do that (“and I forgot”). The chair is represented with casters, like the ones the computer-teacher and the school director have. Moussa does not know how the CPU is named; the functions he perceives for this component are the sound and the switching. He believes that it also can be used to put things (floppies or disks) in it. His description of the functions of the mouse reveals a bag metaphor: “When you click on the square, you can see what there is in”. He had heard about CD-ROMs, but does not really know what it is.



**Moussa's text: "What is to me the usefulness of a computer"**

Words: 51

Sentences: 2, long

Nouns: *things (that are inside the computer), drawings, exercises, games*

Adjectives: *new*

Verbs: *know, perform (exercises), learn*

Main argument: "It can be used to discover new things, comprising drawings, exercises and games"

**Comments on the text**

Moussa seems to be quite aware that there are a lot of things "inside" the computer (he talks about "a plenty of other things") that can be done, but he doesn't give any example. The text is quite long (as regards those produced in this class), but there is a repetition of the same point, the possibility to discover.

Moussa has already heard about Internet, but had no experience of the net within or without school, and he is unable to talk about it.

### 3.5. Interview 5: Kevin R

**Age:** almost 10 years old

**Gender:** M

**Nationality:** French

**Brothers and sisters:** one little brother, aged 6.

**Parents:** father = storekeeper. Mother = checkout operator.

**Family situation:** Kevin lives together with his parents and his brother.

**Hobbies:**

Bike, rollers

**Game consoles at home:**

His brother has had a Playstation for Christmas, but Kevin does not like very much games consoles.

**Use of computer at home**

Kevin has been offered a mini-computer (game) that allows him to make exercises and “to learn things” in French and Maths. He does not seem to perceive a real difference between his mini-computer and a PC. In his computer “they give you an operation and you must solve it”...

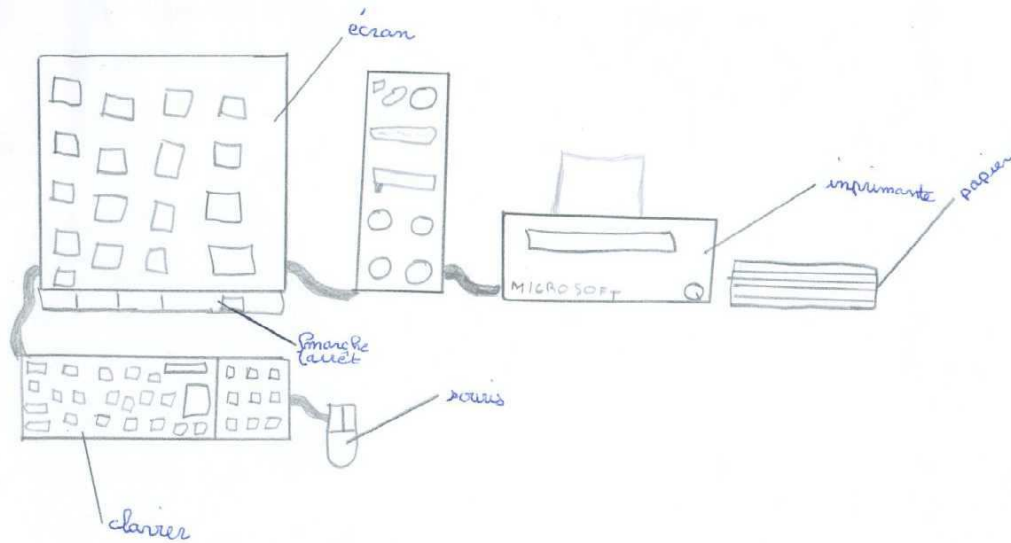
**Use of computer at school**

Kevin began to use computers with Mr. Monteil 3 years ago. He uses computers for practising, mostly in French. He also writes texts for the school journal: “I like typing the keys of the computer”. He would like to learn history with computers, and describes (rather imprecisely) a picture description task that could be use to learn about medieval or antique times.

**Use of computer in other/special places**

Very rarely, with a relative who makes him makes exercises during holidays.

**Kevin's drawing**



**Depicted parts**

- Screen, with on/off button
- CPU, with floppy and CDROM drives
- Printer (with button) + stack of sheets of paper
- Keyboard with cable
- Mouse with cable

**Texts**

- "screen"
- "on/off"
- "keyboard"
- "printer" + "Microsoft"
- "paper"

**General description**

A4 drawing, black and white, occupying a third of the sheet. The screen is provided with a button. It only displays squares. A tower CPU (that is not provided with legend), with buttons and drives, is wired both to the screen and to a "Microsoft" printer. The keyboard representation distinguishes the numeric keypad from the remainder. Within the alphanumeric area, some keys are differentiated from the others (control keys). The keyboard connects to the screen, and a two-buttons mouse is wired to the keyboard.

**Comments on the drawing**

If he could, Kevin would add a table and a chair on the drawing. The squares drawn on the screen represent programs. "There is the arrow somewhere, and whenever you want Presswork, you search in the squares and click on its". The CPU, that Kevin cannot name, is used "for switching on activities" and for putting floppies in.

The brand name on the printer is chosen arbitrary by Kevin, because he has seen it on the bottom of the screen, and also because he does not know any other brand name.

**Kevin's text: "What is to me the usefulness of a computer"**

Words: 12

Sentences: one

Nouns: *computer, things*

Adjectives: none

Verbs: *learn, entertain*

Main argument: "The computer allows me to learn things or to entertain"

**Comments on the text**

Kevin imagines that he could use computer to learn, but also to help his children learning. He also talks about playing with computers, but apparently has very few experience of playing. He just knows that one can put CDs in the computers to play.

### 3.6. Interview 6: Rachid

**Age:** 10 years old

**Gender:** M

**Nationality:** French

**Brothers and sisters:** 2 little brothers (aged 8 and one) and one big brother (aged 19).

**Parents:** father = site foreman. Mother = unemployed.

**Family situation:** Rachid lives together with his mother, father, and brothers.

**Hobbies:**

- foot
- playing games with the console

**Game consoles:**

Nintendo, with which he plays sport games and action games, mostly during weekends.

**Use of computer at home**

No computer.

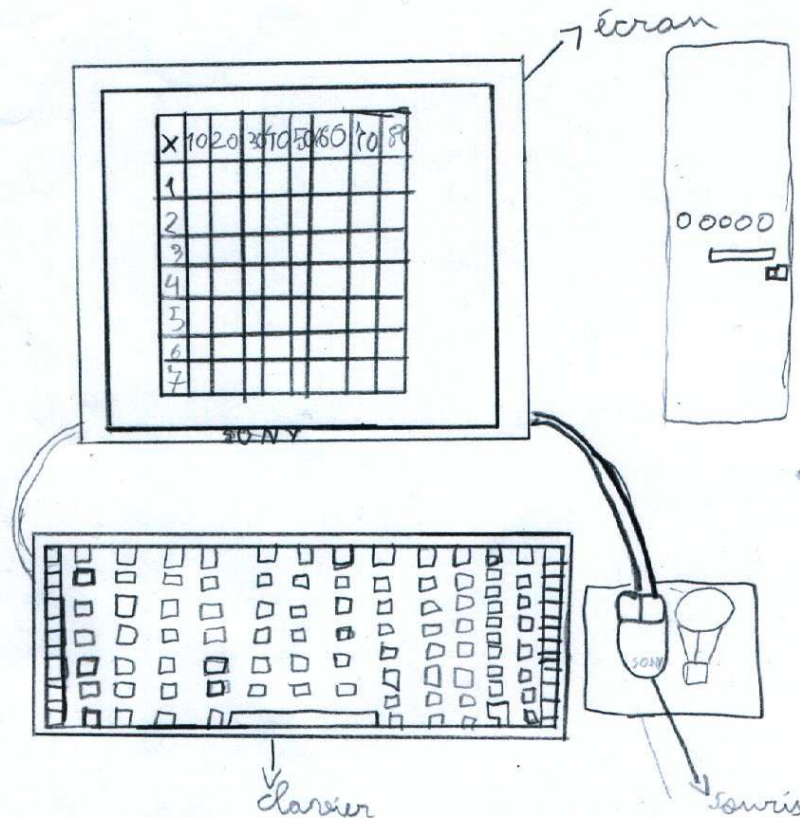
**Use of computer at school**

At school, Rachid only uses computers during the computer sessions, mostly in order to train in grammar and mathematics. Sometimes he also plays games or makes drawings. Rachid does not long for any other activity with computer that could be made at school.

**Use of computer in other/special places**

At his cousin's, Rachid can play many games (that he is not able to name) on a computer. When Rachid goes there, he just plays.

**Rachid's drawing**



**Depicted parts**

- Screen “Sony” + Mathemator
- CPU with floppy and buttons
- Keyboard with cable
- Mouse with cable and mouse mat with a logo

**Texts**

- “screen” + “Sony”
- “keyboard”
- “mouse” + “Sony”

**General description**

A4 drawing in black and white, presenting a frontal description that occupies almost all the sheet. The screen is depicted with a mark on it, corresponding to the mark of the screen of Rachid's cousin. Connected to this screen are a mouse (with the same mark as the screen) and a keyboard. The mouse is on a mouse mat on which logo of a series of software seems to be represented. The keyboard presents more or less as a grid of undifferentiated button, except the symbolised spacebar. The CPU, not provided with legend, is not wired to any other component.

**Comments on the drawing**

During the interview, Rachid told us that I would like a computer “which has everything” as the one he drew. The CPU (never named so) is what is used to put the floppies and to switch on the computer. Rachid confess he has forgotten the cable that joins this CPU “to the computer”. The keyboard is what one writes on, “there are letters on, and you type on the buttons”. There are two buttons on the mouse, “this one, we move it more than this one”. Rachid has seen the drawing of the carpet at his school computer room, but he does not associate it with any meaning.

**Rachid's text: "What is to me the usefulness of a computer"**

Words: 12

Sentences: one

Nouns: *persons*

Adjectives: *foreign*

Verbs: *play, learn, know*

Main argument: "computers can be used to play, to learn, and to know foreign people"

**Comments on the text**

Playing games, in first position in the text, is also the major theme in Rachid's interview. He thinks that computers are good to learn because completing exercises with the mouse is more enjoying and easier than with a pencil, but the learning function seems to relate only to programmed exercises. The way to know other people (that Rachid evokes in his text) is Internet, but Rachid has only heard from this from advertising at the TV, and he has no experience with the net. When asked, Rachid knows what is a CDROM ("you put games and exercises on"), although he never has used one. The only difference Rachid perceives between a computer and a robot is that one needs a remote control to operate a robot, whereas it is not necessary for a computer. Both can think, but the computer thinks with the screen, "its brain is what it has inside the screen".

### 3.6. Interview 7: Kevin G

**Age:** 11 years old

**Gender:** M

**Nationality:** French

**Brothers and sisters:** two little brothers aged 8 and 6.

**Parents:** father = (no reliable information, but his father seems to have a good position, and to work in relation with laboratories). Mother = unemployed.

**Family situation:** Kevin lives together with his parents and brothers

**Hobbies:**

- playing soccer
- using his computer

**Game consoles:**

Kevin has had a console for Christmas. He uses it as often as the computer for playing games.

**Use of computer at home**

Kevin has a computer at home, that he is allowed to use half an hour a day the days when there is school. When there is no school, he keeps “inside [the computer] to work” for 3 hours a day. His computer is not connected to Internet. His father has also a computer that is newer than that of Kevin. This computer connects Internet, and Kevin’s father you can watch the TV with it, and connect his bank. Kevin is not allowed to use his father’s computer.

**Use of computer at school**

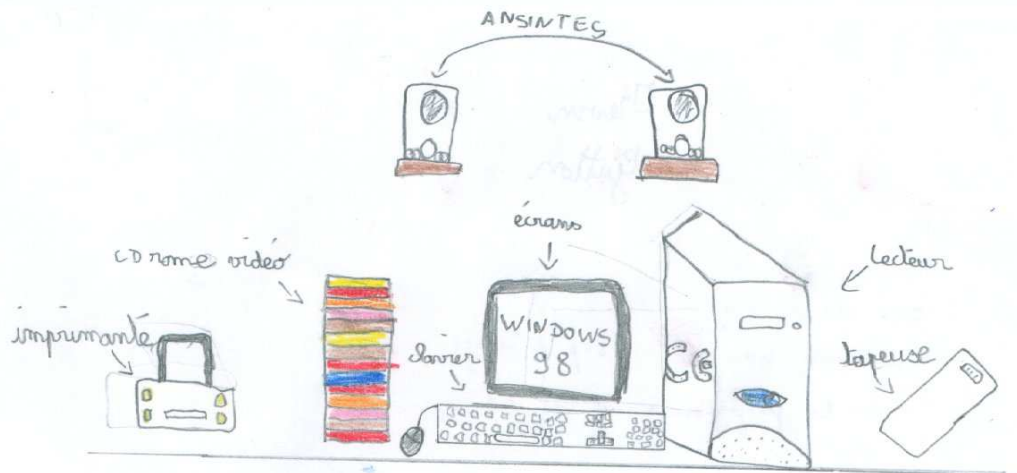
Kevin tells that he has always used computers at school. This year, he uses the computer to write poems (with Presswork), or to draw (for playing). He would like “to install video games” on the school computers in order to play. His description of how one can buy a game reveals a big lack of vocabulary related to computer use.

**Use of computer in other/special places**

At his cousin’s, Kevin has used Internet, but seemingly only to communicate via email with friends.



**Kevin's drawing**



**Depicted parts**

- Screen with Windows 98
- CPU with floppy and buttons
- Keyboard
- CDROM tower
- Loudspeakers with buttons
- Printer
- Mouse + cable
- Scanner

**Texts**

- “screen” + “Windows 98”
- “drive” (for the CPU) + “CE”
- “keyboard”
- “Video CDROM”
- “loudspeakers” (phonologically spelled)
- a neologism for the scanner (“tapeuse”)

**General description**

The A4 (mainly black and white) drawing, presenting a frontal description with an attempt to give a 3D view only for the CPU. This CPU, bigger than the screen, comprises a floppy drive, a coloured logo, and a CE mention (a detail of his own computer, where ventilating holes form this letters). The screen only displays the name of an operating system. The keyboard is quite realistic, with a numeric keypad, control and arrow keys, and space bar depicted. A highly coloured CD-tower, two loudspeakers, a printer and a scanner are represented. None of these components are connected either to the screen or the CPU. The only component provided with a cable is the mouse that is connected to the keyboard, which does not seem to be wired otherwise.

**Comments on the drawing**

Kevin is almost an exception in this class, since he has a computer at home. Then it is not that surprising that Kevin is the only pupil to give a complete description of the material. It is worth noting that Kevin is in fact the sole child (in the French data) to represent a real multimedia computer. The only parts that are coloured are those that are very relevant to this multimedia aspect (speakers and CD-tower).

The scanner is named “tapeuse” which is a neologism that seems to be derived from the French equivalents of typewriter and photocopier: “You put a sheet of paper in the ‘tapeuse’ and when you press Enter, it comes out from the printer”. Video CD-ROMs are completely assimilated to games. The unique function of loudspeakers is gaming. Kevin knows that every component is wired to the CPU, that is essential to the computer, and which use is “to read programs”.

**Kevin's text: "What is to me the usefulness of a computer"**

Words: 14

Sentences: 1

Nouns: *schoolwork, things*

Adjectives: none

Verbs: *perform (schoolwork), play, learn*

Main argument: "It allows me to perform my schoolwork, to play on, and to learn things."

**Comments on the text**

Kevin's father has installed programs named 'French', 'Maths', that allow Kevin to perform his schoolwork. Learning things is associated with exploring an atlas (for instance for discovering animals). Internet does not appear either in this text or in the drawing, although the interview reveals that Kevin knows Internet and has already used emails. Kevin does not talk about the WEB, that is not perceived as a source of information.

#### 4. Collective work: “What might the computers bring in the future?”

##### **Introduction of collective work**

The collective work has carried on Friday June 18 afternoon (from 13.30 to 15.00). It took place in the pupils' usual classroom, where no computer was located. The circumstances of realisation of the work were not very advantageous. The class teacher was missing, and during the end of the school year school activities are somewhat disregarded, and cede progressively the place to various activities that prefigure holidays (sports, promenades). Consequently, not all the pupils the participated in the first phase of the study were present for this work. Five grade 5 pupils were recruited by Mr. Monteil in order to complement the group. They took part in the activity without having choosing it.

The eighteen pupils have been submitted the following question: **In your opinion, what might the computer bring us during the future years?**

##### **Elaboration**

###### The computer, its characteristics

Inasmuch as the pupils were somewhat agitated, the teacher chose to have them reflecting solitary and taking notes before the beginning of the collective phase. Afterward, every pupil who had one proposition could communicate it to the rest of the class, and answer the questions of his/her fellows. At the end of each proposition, the whole class had to vote. The teacher inscribed on the board the propositions that gathered the most suffrages:

- A computer commanded by voice, and that can be asked questions
- A computer with a screen as big as in cinemas
- A computer that would be protected by a fingerprint recognising system
- A computer that could be used by several persons simultaneously (e.g. with two mice)
- A computer with an integrated printer
- Another portable computer that would be enough miniaturised for always keeping it with us

###### The computer, what one would do with it

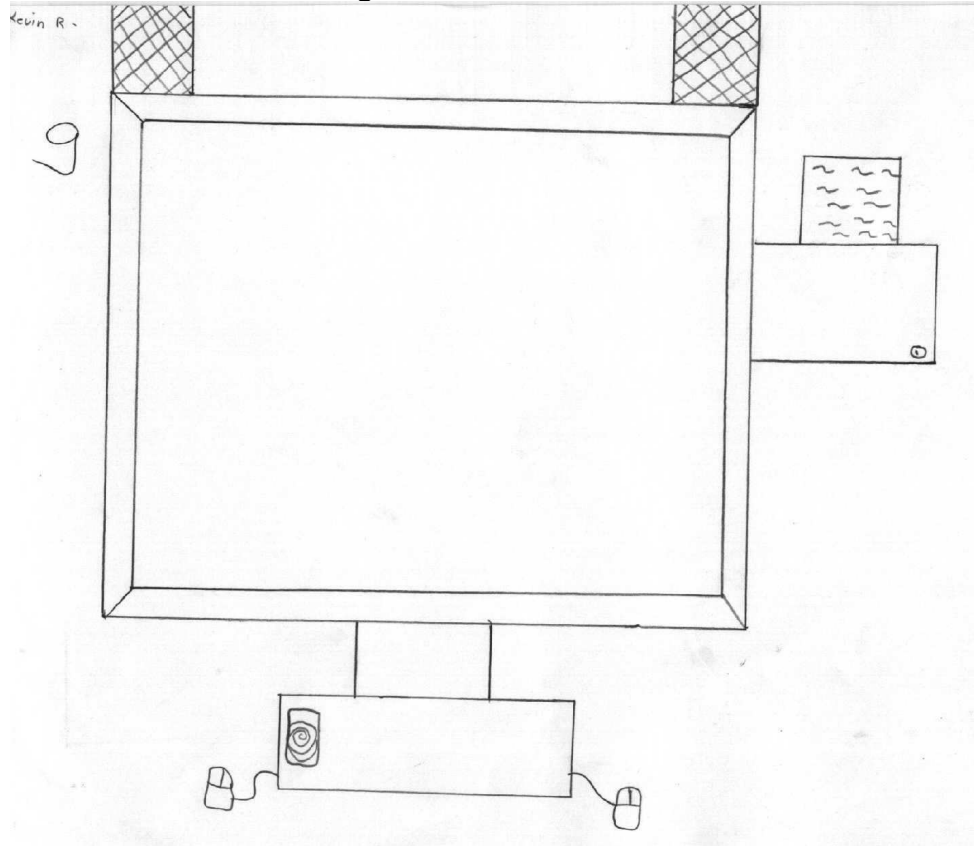
The pupils' propositions were mainly centred around external properties of their imaginary computer. Therefore, in order to enrich the descriptions, we asked them to reflect on what could be done with the computer they had just described. The same procedure, with collective presentation of ideas and vote was again adopted. The following propositions obtained the most voices:

- More adventure games with heroes who can talk, and the possibility to download games via Internet
- The computer would pilot the car for us, with an orientation map for not loosing oneself
- Computers would teach us sports (for instance Karate)
- It would be possible to create one's own movie with the computer help
- One could read a book with the computer
- The computer could be our house guardian

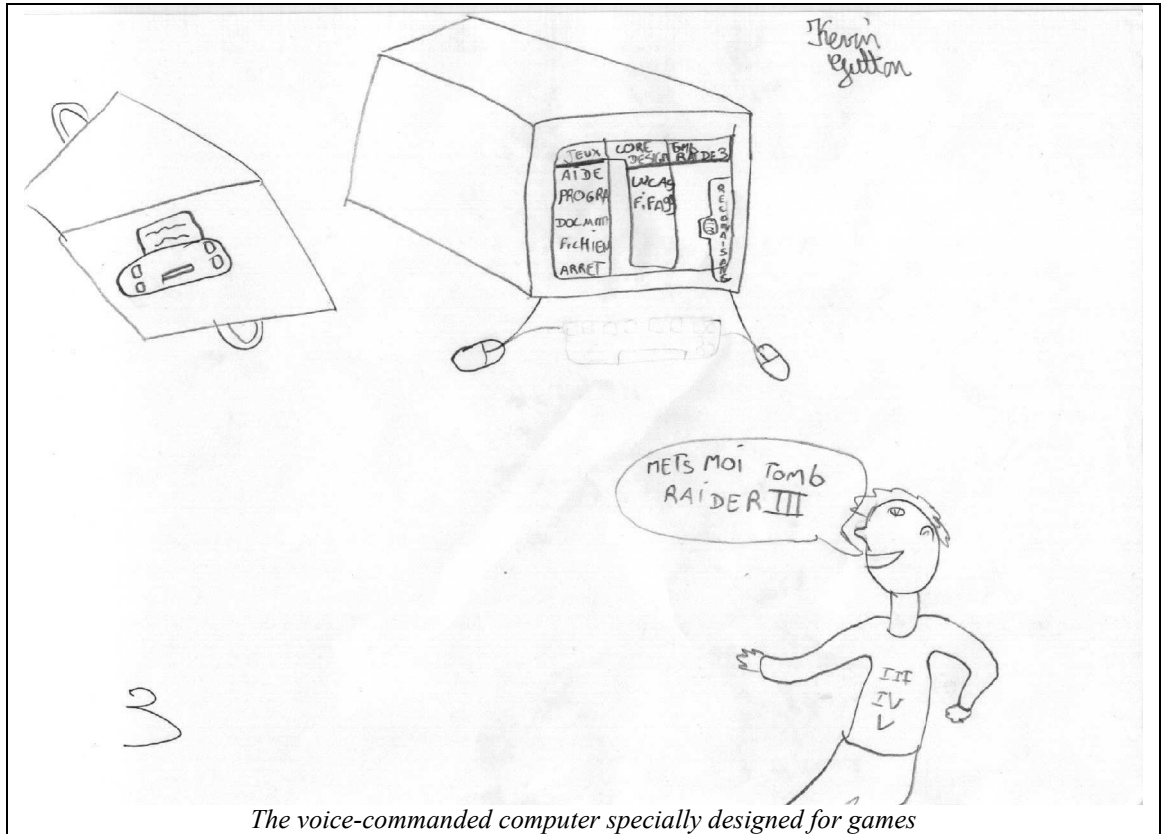
The computer, what it would look like

Afterward, the teacher asked the pupils to draw the computer they chose. All the drawing were exposed, and the pupils have been again asked to vote for three drawings that would seem to them the most representative of their own vision of the computer in the future.

The three winner are the following :



*The computer with a very big screen and an integrated printer,  
that could used by two persons simultaneously*



*The voice-commanded computer specially designed for games*

