

D6 School portrait Koninklijk Atheneum + Middenschool (Royal grammar and middle school) Geel

www.gogeel.be

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1 General characteristics of the school

Identification

The middle school (first level) and the upper school (second and third level) of the Koninklijk Atheneum are situated on the same campus in the centre of Geel. They form an educational unit and share a secretariat, the same buildings and personnel.

The parents and the pupils consider the school to be a single whole. The school has 521 pupils (first level: 200 pupils; upper school: 321 pupils) and offers the following three types of education: general secondary education (ASO), professional secondary education (BSO) and technical secondary education (TSO).

The history of ICT in the school

The school has developed from a situation in which there were few ICT facilities, in part because the computer classroom was owned by a third party. It is therefore not surprising that the use of ICT was at a low level and that only very little digital communication existed between the school and external bodies (schools, the ministry, and the local authority).

The position now:

Further additions to the technical equipment: an additional ICT classroom for the Cognosco project (second school year, level 1) and realization of the 'Open learning centre'.

ICT support at school, from 1 full time to 1.5 full time assignment.

ICT management in the open learning centre: one full time assignment?

The realization of an ICT equipped classroom for the General Subjects Project (PAV).

Annual costs

At the policy level, the realization of an ICT environment has been a priority for the last five school years. To keep costs under control, work was carried out systematically:



School year	Investment	Cost price
2000-2001	Realization of the network + equipping of three information sciences classrooms	60,000 Euro
	Computerization of the administration	15,000 Euro
2001-2002	Realization of an additional PC classroom for the information sciences + a small PC room for smaller classes	20,000 Euro
2002-2003	Realization of a Cognosco classroom 1st year (Cognosco is a project that addresses self-directed learning)	20,000 Euro
2003-2004	Realization of a Cognosco classroom 2nd year	20,000 Euro
	Realization of an open learning centre (OLC)	60,000 Euro
Total		195,000 Euro

Educational vision and ICT

Both the middle school and the upper school, have a well founded and structured vision of the integration of ICT in both the short and longer time frames.

Using ICT, because it is a must

The school is well aware of the regulations concerning the integration of ICT. The final attainment levels¹⁴ of the first and second levels are clear about this. For instance, the government demands that at the first level, all pupils can take a critical attitude with respect to all sorts of information sources and that they know about means of improving communication and that at they can use them at their level.

The school will also anticipate the evolution of society and industry in the direction of the new economy (the knowledge society) of which ICT forms an integral part. It feels therefore that it has the obligation or task to prepare the pupils for this new society. Integration of ICT, because it makes sense

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The use of ICT can make sense at various levels:

- ICT as provider and trainer of educational content (for instance in teaching language);
- ICT as a means for specialization;
- ICT as a means of allowing pupils to learn and work independently (for instance the Open learning centre);
- ICT as an instrument for evaluation.

The school experiences the lack of suitable procedures and/ or instruments for investigating which ICT applications can sensibly used at which level and the degree to which the use of ICT should be sensibly integrated to be a restraining factor. Integration of ICT is sensible, but...

ICT is not an objective in itself but a means of making education more efficient. This requires (as applies to all other media) a serious estimate to be made of when we should use ICT for which component. For this reason the integration of ICT must mainly be aimed at usability and efficiency. With respect for the teacher (including his/ her capabilities, experience ...) and teaching efficiency, we must question how we can make ICT serve the existing (and frequently efficient) methods.

¹⁴ The final attainment levels are minimum objectives that must be achieved by all pupils.

Integration of ICT has an influence on what goes on in school

At school this means that the rapid expansion of ICT hardware must immediately precede ICT training for the personnel and the gradual integration of ICT in teaching. As in the initial phase ICT will be more likely to be technically oriented (installation of hardware and technical training), a gradual shift will be made to more didactic work and the integration of ICT will receive a more pedagogic focus.

Description of the ICT plan

The *ICT policy plan* of the school contains five main lines.

- The teaching staff are offered technological facilities to integrate ICT in teaching activities (classrooms with PCs, OLC, etc...).
- Internal refresher courses are organized for the staff (these are not obligatory, but there is strong pressure to participate).
- The teaching staff are offered technical and pedagogic support when ICT is used in a traditional classroom situation. A full time ICT coordinator keeps the computers in the school up-to-date and provides software training (Office, Dreamweaver). In the 'open learning centre' a supervisor is permanently available to help teachers with software problems.
- The teaching staff are indirectly obliged to use ICT: filling in reports, computerizing the creation of annual plans, making test materials and the extension of the pupil tracking system.
- There is a desire to learn from each other by internally using the "good practice" model.

Summary of the policy plan

School year	Phase
1999-2000	<p>The information phase.</p> <ul style="list-style-type: none">- After an extensive round of consultations, at policy level choose a technical and pedagogic ICT concept.
2000-2001	<ul style="list-style-type: none">- The realization of a LAN network with three PC classrooms.- Make a person (a teacher with technical leanings) available half-time who is responsible for ICT, and have available the help of a staff member trained in ICT in response to a simple request during the lessons in an ICT environment.- Set up a series of in-house modular courses in ICT use.
2001-2002	<ul style="list-style-type: none">- The further expansion of the technical equipment: an additional ICT classroom.- Establish an information sciences course 1st school year, level 3.- The assignment of a person fulltime to be responsible for ICT.- Set up a series of in-house modular courses in ICT use.
2002-2003	<ul style="list-style-type: none">- Further additions to the technical equipment: an additional ICT classroom for the Cognosco project (first school year, level 1).- Test case: to what degree is it possible to integrate ICT into the first school year of the first level?- Establish an information sciences course 2nd school year, level 3.
2003-2004	<ul style="list-style-type: none">- The preparation of coached independent learning with the integration of ICT.- Further additions to the technical equipment: an additional ICT classroom for the Cognosco project (second school year, level 1) and realization of the 'Open learning centre'.- Test case: to what degree is it possible to integrate ICT into the second school year of the first level?- Coached independent learning in 1A- Preparation for the Cognosco project (first school year of level 2).- ICT support at school, from 1 full time to 1.5 full time assignment.- ICT management in the open learning centre: one full time assignment?- The realization of an ICT equipped classroom for the General Subjects Project (PAV).

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The infrastructure

All computers are in a network and can communicate with each other and the outside world. Internal connections using glass fibre, UTP cables and switches, external connections via one or more fast connections (ISDN, cable). The PCs are grouped together in specific classrooms and are not distributed as solitary units to all classrooms. Information science classrooms are used for information sciences and typing but in addition, at least one classroom is available (can be reserved) at all other times for another subject or teacher.

Moreover, there are additional ICT facilities available for pupils that participate in the 'Cognosco'¹⁵ project and in time also for the PAV pupils. The establishment of a new branch of study 'TSO information sciences management' in the upper school is certain to accelerate the increase in the number of computers available.

¹⁵ Cognosco: a school project related to self-directed learning in a powerful learning environment where the task of the educational provider is mainly aimed at coaching. The project is modelled on, among other things, the 'Study house' in The Netherlands.

Data and software can be made available centrally for the entire network. The computer equipment is added to and maintained using the BPT¹⁶ hours of several employees.

The school does not concentrate in the first place on developing software itself, but on the purchase and use of existing didactic programs.

The infrastructure can be extended using older equipment from the school and via gifts of written-off equipment from private companies for those applications that place less demands on the equipment (surfing and word processing).

In time, the extension of external connections will become more important. Pupils and teachers must be in a position to use the Internet from home to exchange assignments, news, memos and corrections via a server at school that we will administer ourselves.

2 Changes for pupils

The learning process and ICT

The use of ICT makes it possible to put the more self-reliant pupils to work. Many sources of information are available to them and by using a 'learning by doing' approach they learn to find their way around the material on offer. The pupils in the second Cognosco year are already familiar with the program 'Mindmapping' and some actually use it to schematize information. Of course this can also be done without using the PC, but the program often provides additional stimulus.

The pupils increasingly use the computer to carry out assignments. The content is offered visually, and so is in line with how they perceive their environment.

The pupils' results

It is difficult to determine in black and white whether the pupils' results have actually improved as a direct result of using ICT, as this depends on a combination of factors. However, it is clear that the pupils' motivation has increased considerably. Spelling training, searching for information, and making presentations using presentation software (PowerPoint,...) demands considerable effort from the pupils, even so they start working on these assignments without complaining. In this respect, ICT plays an important role. The pupils still consider the computer a pleasant thing to work with. For some subjects and components, the computer facilitates learning. For instance, a program such as ACE (foreign languages) and a spreadsheet (Excel to study word-lists) simplify studying and make it more attractive. Software and Internet sites

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The following software is used by pupils and teachers at school:

Cabri géometre 2 (mathematics);

Microsoft Office;

Encarta (sciences, dictionary);

Meridiaan 1,2 (geography);

Geschiedenis van A-Z (history);

Ace (foreign languages);

Netwerk Nederlands (spelling);

Mindmapping.

The program 'Dreamweaver' is only used by the teachers.

The following internet addresses are some of the school's favourites:

<http://home.wanadoo.nl/r.driedijk/>

<http://www.jacobus.nl/geschiedenis3/>

<http://www.kinderen.be.tf/>

<http://www.memo-malmberg.nl/secure/leerling/lesmateriaal/opdracht/MEBoer/MEBoer.htm>

<http://www.jacobus.nl/geschiedenis3/>

http://home.worldonline.nl/~cb005214/ontleden_zinsdelen.htm

The pupils mostly use the sites and software for background information. They use them as sources for the subject they are studying. The pupils are supervised in their use of the software and the Internet. They are free to search for information, but the teacher clearly keeps an eye on what they are doing when they use ICT.

The pupils save their work on a 'Handy Steno' (a memory stick). This makes it impossible for other users to delete their work, and they can easily take the sticks home so that they can consult or add to the data they contain.

The use of ICT

The pupils' reports are made using the program 'EVALUON'. This program is installed on a central computer. The teachers fill in the data after which this data is centralized by the system manager.

The Cognosco pupils consider the use of ICT as something very natural, because they are in a position of always having a PC available. Sometimes the computer is used during the lesson for a very small subtask, in the same way as a dictionary, an atlas or another reference work would be used. Furthermore, the pupils are very familiar with forwarding tasks through e-mail, the computerized submission of assignments, etc.

At certain moments, the pupils choose themselves whether or not to use ICT.

For instance, there are spelling exercises available on the computer, but the pupils can also just do the exercises that appear in their course material. This makes learning flexible.

The infrastructure and the hardware available in the Cognosco classrooms ensure that the pupils are in a room where they can work on the PC without being disturbed, while other pupils carry out other assignments. The school confirms that the available

software is still rather limited, because this is only the second year that they have been working in this way and that they are still actively searching for useful material. For the pupils, ICT is a pleasant way of carrying out assignments, consulting sources and doing exercises. This is a fact that appeals to them, as they are surrounded by computers the entire day.

Most assignments are carried out during the lessons. Of course this does not mean that assignments are not also worked on at home. The pupils often work in groups and e-mail is an ideal means of communication for them, it is often used to forward sub assignments to peer pupils or to the teacher. The advantage of using ICT is that most pupils can easily continue with an assignment at home, if they have access to a computer. This is now the case for the majority of our Cognosco pupils.

3 Changes for teachers

The use of ICT in the classroom has the effect that the teacher acts more like a coach who gives clues than a teacher who explains everything. The pupils discover much more themselves. Of course this means that when preparing lessons, the teacher must visit sites, and try out software. Because there is so much on offer, it is however not always easy to make the right choice. Maths software such as Cabri, Derive and Mathcad have many features but have the limitation of only being suitable for specific parts of the curriculum and for specific target groups. The same holds true for sites and applets that can be found on the internet. The availability and usability of software sometimes inhibits and sometimes acts as a catalyst for ICT integration. Of course, we will provide specific ICT support if we feel that it will make it easier for the pupils to learn a subject. However, the use of ICT must never become the goal itself. It forms part of the didactic structure of a lesson.

All teachers have basic knowledge of the office packages. Starting this year, they will start to learn the 'Dreamweaver' software. Refresher courses are being followed (Networking and Working online in the classroom).

The introduction of ICT demands that the teachers spend considerable time searching for useful material. The majority of teachers are 'followers'. If good material is supplied, it will be used.

A disadvantage of ICT in the classroom is that some teachers have difficulty giving the pupils a degree of freedom. You do not have full control if pupils search for things themselves. However, the great advantage is the increased motivation of the pupils, the interest, and the development of the ability to learn independently.

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4 Organisational change

The realization of new PC classrooms and the setting up of Cognosco has led to numerous organizational changes, including:

Reorientation in the use of classrooms;

the changing of hourly timetables based on the number of PC classrooms available;

reorientation of the criteria of the recruitment policy;
reorientation of the investment policy;
reorientation of the employment of personnel (official acts) for Cognosco.
ICT has in particular simplified internal communications because of the ease of being able to send e-mails to each other and to forward external messages. The teachers are gradually and subtly increasingly encouraged to produce points, reports, annual plans and exams in an electronic format.

Without doubt, it is clear that ICT is used at all levels: administration, accounting, reports, e-mail, timetables... This school can no longer work without ICT. Its use has in particular freed up time for pupil coaching, time, which in the past would have been used for time-consuming administration. After all, the mentoring and coaching of pupils is a much more important task for the school than administration. ICT has given them the time to concentrate more on these aspects.

The driving force behind the ICT initiatives is a small group of motivated staff members and managers who are freed up to devote time to ICT. The most striking organizational changes are the reorientation of the use of buildings and classrooms and scheduling ICT classrooms in the timetables for classroom occupation. In order to be able to evaluate the use of ICT, every teacher maintains an ICT inventory, in which he/she records the subject, the time spent and the software that was used. In order to organize the selection, purchase and management of software, the policy ensures that a positive response is almost always given to teachers' demands concerning these issues. Developments are followed up by the management and the teachers are informed. The personnel are encouraged by the management to take refresher courses. The hardware is managed by the people who are responsible for ICT.

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The integration of ICT has accelerated in recent years, and there were several problems. In fact, several members of the personnel still request more ICT. Here the problem often concerns the common use of resources, and the fact that the management refuses teachers' requests to invest in more ICT facilities in their own classrooms. School management is trying to strike a balance between ICT and non-ICT investments. Often the ICT suites are used for training ICT skills, leaving non-ICT subjects with too little computertime. There is not enough budget to provide both ICT suites and classroom computers. Moreover, the infrastructure is also used for evening classes, meaning that this must also be taken into account.

The use of the Internet also means that additional attention must be given to security. The school claims to be a pupil-oriented school. As a result, we give the pupils a large degree of responsibility. We opt for self-aware behaviour, based on the sincere desire to learn by experience. Furthermore, the technical facilities are sometimes a source of irritation and/or problems. Every year we increase the number of PC classrooms, but we still receive comments/criticism, because teachers still do not always succeed in reserving one. Moreover, the fact that the personnel have to computerize a number of administrative tasks (such as the pupil tracking system, annual promotion plans and exams) is not gratefully received by all staff members.

An important role in the implementation of the ICT policy is that played by the non-teaching staff. Without their efforts (execution of activities under own management) and the efforts of the Technical Consultant Co-ordinator (who co-ordinates the internal activities), the computerization of our school would never have reached the current level.

5 Changes in working with the local community

First and foremost, ICT is set up as a facility for the entire campus, therefore a facility for four schools that as a result must closely co-operate.

In particular, the school observes other schools: how do they handle problems and what can we learn from them? This co-operation works in both ways: the school provides advice and sometimes sends personnel to provide support.

During the starting phase, co-operation with the CIPAL company, based in Geel, was of particular importance. They supported us during the crucial phase when we were extending the network. They supplied hardware, software and humanware (supervision). Support in money and time will be of primary importance when extending the network and making it more robust. The current ICT facilities are only a small part of what we actually require (and actually invest).

6 Reflection and ambitions

The computers that they acquired should have been more uniform to make the maintenance easier. Maintenance guarantees from companies must be strictly specified to prevent unpleasant surprises.

The set up and use of a remote access server will become important in the future.

Finding the financial resources to replace and modernize the computers and the continual investment of the time of the people assigned to ICT (who are exempted from teaching) will remain problem areas. Even a small reduction in the amount of time can result in major problems.

It appears to be important that work is done according to the policy and in a planned way, and that the entire process is supported by a computer scientist who has in-depth knowledge of ICT and some school experience.

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7 Appreciation

We have seen that this school integrates ICT in an constructive, straightforward and child friendly way, within the boundaries of what is achievable both financially as form a organisational point of view. The way in which this school uses the possibilities of ICT can be an example for others, and can act as a catalyst for educational change.

8 *Lessons for others*

To achieve the effective integration of ICT schools increasingly need a educational ICT coordinator to work side by side with a technical ICT coordinator. The first has to focus on the pedagogical and didactical dimensions of ICT use.

The problem is not that teachers lack knowledge of how software works, but rather the lack of didactic knowhow to integrate ICT successfully. The use of ICT implies other teaching methods which in their turn imply new ways of testing and evaluation, moving from productevaluation to procesevaluation. This is clearly the biggest problem and especially local authorities should pay attention to this.