

D5 School portrait Sint-Pieterscollege – Sint-Jozefshandelsschool Blankenberge

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1 General characteristics of the school

A school that dares to go against the flow

Identification

The name of the school (Sint-Pieterscollege-Sint-Jozefshandelsschool) indicates that the school is the result of a merger between two schools in the coastal town of Blankenberge. Because the school is located in the centre of the town, the available space is limited. Administratively, the school consists of three schools at one location: a comprehensive school and two upper schools (final years of secondary school), one with a Humanities profile and the other with a Commercial College profile. They provide the three forms of education ASO, BSO and TSO, with a team of 100 teachers instructing 930 pupils. Despite its location in the town centre, the school successfully built a completely new infrastructure over the last 15 years. The new building complex is characterized by extended ICT facilities, two open learning centres and one floor with a workroom and meeting room for teachers.

The history of ICT in the school

ICT was introduced at the school in 1983 when the school started programming its own software package for the school administration. The school opted for the Apple Macintosh platform, even though at that time most schools in the cluster to which this school belongs started teaching Information Science on the MS-DOS platform. This characteristic choice launched the school on a specific course that has greatly influenced both the infrastructure and the implementation of ICT, which is explained in more detail below. During the entire process, the school allowed for the possibility of having to switch to the Windows platform. After all, Macintosh had been using Microsoft Office-like packages for years before they were launched on the Windows platform and captured the market. When Microsoft established a quasi monopoly in the PC world with its Windows operating system, it became evident that a switchover would not be necessary.

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Annual costs

Over the past ten years, the school has spent a total amount of EUR 383,878.33 on its ICT infrastructure. A limited share of this amount (EUR 85,059.59 – that is, 22.16%) involved financial resources that the government had given to the school in the context of PC/KD, while the remainder was financed with resources from the working surcharges.



In total, EUR 303,345.64 was spent on hardware, EUR 42,503.07 on software and EUR 41,029.62 on other costs. The school Management has therefore clearly invested a lot in these technologies.

Educational philosophy and ICT: challenges for the future

The school's educational philosophy with respect to ICT is based on four aspects. Firstly, due to the ever-growing amount of available information, pupils will need to be able to learn extra skills throughout their lives. The learning strategy must therefore be based on learning to formulate problems, collect information, estimate the value of that information, formulate goals, specify pointers and indicators, and build in verification systems. Only pupils who possess these skills will be equipped for life-long learning in their future careers. Furthermore, the aspect of self-sufficiency is important so that pupils themselves learn to study under the supervision of instructors rather than just listen to instructions.

The second aspect involves the teamwork. Working together, being able to empathize with others, learning to communicate, discuss and believe in the power of shared ideas are attitudes that lead to an ability to distribute tasks, schedule and plan activities, and be able to depend on fellow-pupils. In this way, pupils are able to tackle more complex situations in which the different perspectives can be understood more rapidly.

Thirdly, the growing importance of utilizing information on a screen, learning to efficiently and analytically use search options on the internet, and learning to conscientiously create texts or presentations are basic skills that will enable pupils to cope with and benefit from the new technologies.

Lastly, being able to continually work in a motivated way is an important element in the approach to learning. This motivation is increased through greater involvement in the learning process, where pupils become responsible for their own learning development in a structured and systematic way.

Description of the ICT plan

From the start, it was the school's intention to position the Information Science applications in a number of domains: the school organizational domain, the administrative domain, didactic-pedagogical applications, the pupil monitoring system and public relations. Thanks to the compatibility of the school's software with the software used in the printing sector, all publicity and information distribution is prepared in the school by means of prepress. This results in significant savings. For the school organization, the school developed software for distributing teachers' tasks and creating lesson timetables. In addition, a number of administrative applications were designed in the school: the complete personnel administration, the layout for documents to be sent to the Ministry of Education, the layout for diplomas and references, the roll call (system for verifying whether pupils are present or absent), the creation of student cards, etc. The didactic-pedagogical applications are discernible for pupils on three different levels: finding, processing and presenting information



particularly in the context of projects involving supervised independent learning and working, the integration of Information Science in the majority of the subjects, and writing reports. In addition to its own reporting program, the school has also developed software to follow the school career of every individual pupil in a 'pupil monitoring system'. The software can be used to analyse the results of individual pupils, class groups and subjects. For the teachers and especially for the class functionaries, this means that the purely administrative work related to reporting is kept to a minimum: all they have to do at the school is type in the marks. In the near future, the school also wants teachers to be able to do this at home through the internet.

The infrastructure

At present (November 2003), the school has 211 computers, 30 of which are used for the school administration. There are 145 computers distributed over 18 classrooms that include four computer classes and two open learning centres. The science classes have a computer with a data projector. One computer is used for the pupils' wall poster, the teachers' workroom has several computers, 10 computers are currently being prepared for use, and 26 laptops can be used as a mobile classroom. Twenty-five older Macintosh Performas are mainly used to teach pupils how to type. Except for these older computers, all the computers are connected to a network. Moreover, the laptops can also be used to connect to the internet through the school's wireless network. The entire cable network is controlled by four servers. Given the number of pupils at the school (930), this means that the school is far above the Ministry of Education's norm of one computer per 10 pupils.

Back in the MS-DOS era, the school had already opted to use the Macintosh operating system. As far as user-friendliness is concerned, this immediately gave the school a significant advantage. When ICT was introduced, one remark often made was that pupils would be unable to use MS-DOS because they were accustomed to using the Macintosh. However, after the first Windows versions appeared, it soon turned out that this fear was unfounded. In the meantime, pupils were well able to use that essential aspect of computers: the application software. During the entire process of ICT integration, software packages have often changed from one day to the next. It was the school's intention from the start that pupils would be able to work with computers without becoming specialists in one software package or another. The growing similarity between the Windows and Macintosh software ensures that the pupils can also use the most common application software (Office) on the school computers. The Mac version of this software differs very little from the Windows version. The main difference is the lack of the Access database program on the Mac, a problem that is solved by the use of Virtual-PC, which means that Windows programs are just as fast on a Mac. The same solution is used if specific software for a particular subject is only available for Windows. The great advantage of the school's choice of the Mac is that the machines are easy to use and are very stable. They rarely require repairs or new parts. In addition, once the software has been installed properly, it requires no maintenance and is very resistant to virus attacks. The use of Mac OS X-servers means that there is a network of around 150 fast and very stable computers.

The laptops can log on and surf in wireless mode, although this reduces their speed somewhat. Pupils can use the network to access their own files from every computer.

2 Changes for pupils

Pupils are themselves largely responsible for the learning process

Learning process and ICT

Through the introduction of ICT, the school has gradually initiated a number of radical changes in the learning process.

The launching of the first open learning centre and then the second a year later has had an impact in three different areas.

In the First Grade, one of the open learning centres focuses on 'supervised independent learning'. In the context of the 'learn how to learn' and 'social skills' final attainment levels, for three hours a week during the first year the pupils can themselves complete a number of learning units for French, Mathematics, ICT, Dutch and Latin. Good timing ensures that the pupils can now use the skills they learned in the 'contract' and 'hoekwerking' in primary school to independently learn certain parts of the lesson material. And because several classes are working at the same time, teachers can be deployed flexibly to coach pupils, give individual remedial lessons, keep the logbooks up to date and prepare new assignments. The differentiation in tempo and level of difficulty means that teachers can give positive feedback more easily because the main point of focus is the pupils' own advancement.

A second area in which the open learning centre is used is in 3rd Grade ASO. This is where pupils complete group assignments for projects within specified goals, in which the group organizational structure, implementation and processing are the most important aspects. Here too the final attainment levels 'learn how to learn' and 'social skills' are the focal point. In this case, the methodology explicitly focuses on independence and pupils' responsibility for their own work.

In the integrated test in third Grade TSO, in addition to the two-day introductory traineeship in October and the 14-day block traineeship in January the open learning centre is used to support the review of traineeship places, distribution among the specific branches of study and the course of the test with the necessary ICT skills.

The 7th Year Office Automation BSO and 6th Year Secretariat Languages TSO organize commercial activities in a virtual office from a computer classroom or from a specially constructed office classroom. Virtual practice firms are contacted at home and abroad, thanks to the co-operation with EUROOPEN, the Worldwide Network of Practice Firms, via COFEP, the national centre for practice firms. The school works with a partner company to create a catalogue with a range of goods. All transactions are 'real' and take place with real documents; just the actual flow of goods is missing. The commercial

communication (written and oral) in Dutch or in the modern foreign languages takes place using modern means of communication with the focus on the electronic flow of data.

In the Mathematics lessons in 3rd Grade ASO, the pupils use Excel in the Statistics lessons, Cabri for geometrical constructions, TI Interactive, Curvus Pro, PowerPoint and VU Stat.

For the Information Science lessons in 2nd Grade ASO, the pupils work with assignment fiches. Every assignment consists of a reiteration and a new task. For the reiteration, pupils use an on-line-course referred to in the assignment fiche. After completing the assignment, pupils can compare their own results with a PDF file and, if necessary, make corrections before printing their own file.

Furthermore, the school very often makes use of a whole series of projects. Information Science can be used as a tool in all of these projects. In the Schoolnet project, for example, volunteers from 4th, 5th, 6th and 7th Year BSO create a video news magazine for the PAV lessons with a monthly report on all school activities. During the lunch break, the video report is projected on white glass in the playground for all the pupils. In the Mini-GIP project (which integrates PAV, English, French, Dutch, Applied Information Science and General Development), the pupils in 4th Year Office and in 4th year Sales form company. In a presentation pupils must show that they satisfy a number of criteria for each of the subjects involved. In the Bookkeeping-Information Science-Mathematics integration project, the pupils in 2nd Grade Commerce and Commercial Languages no longer receive frontal lessons but process the lesson material in smaller groups, with one pupil leading the group for a number of weeks. In the fourth year, the group leaders can be given lessons by the teachers and then go and explain the lessons to their group. At the end of the school year, Mathematics is also partly included in this project. In the Mini-company for 5th Year Office and 5th Year Sales, the pupils work during the seminar and PAV hours on expanding it into a real company with five departments: financial, administrative, commercial and technical departments and a department with a delegated Board of Directors. In the level groups Mathematics 2nd Grade ASO, all pupils that have been at the school for one year are subdivided into different level groups for one lesson hour per week, either to expand the lesson material with extra exercises or small units of extra theory or to complete remedial and repetitive assignments that support the lesson material. In the Modules for Preparing for Higher Education projects (Modules voorbereiding Hoger Onderwijs), the pupils in the last years of ASO, instead of the extracurricular projects described above, can also choose a subject – Mathematics, German, Economics – and for one semester prepare a higher education topic in a group and fill in the gaps in their preparatory education under the supervision of a coach. Lastly, for a particular subject the teachers and pupils of 3rd Grade ASO and TSO can use the internet mainly at home to access the Smartschool Information Science network in order to communicate with each other or carry out certain assignments.

The pupils' results

For the Bookkeeping-Information Science-Mathematics integration project (see above) that started in September 2002, the school assesses pupils in two domains: 60% for their daily work (in this project, split into 40% for the 'product' and 20% for 'attitude') and 40% for the test. The interesting thing about this is that the 'attitude' percentage is achieved on the basis of a number of minus marks and/or plus marks. Pupils who do not co-operate well, talk in class about things other than the subject, or look at the solutions before they are ready with the answers, will lose four marks out of 20 ('minus' marks) each time. However, if they submit good work or score well in the test (90% or higher), they can earn back two marks ('plus' marks). The pupils' results for Bookkeeping have definitely improved: the daily work, which used to be worth 60% and is now worth 40% plus 20% for 'attitude', produces more or less the same result as in the past. However, the test scores have definitely improved even though the subject involves the same lesson material, the same level of difficulty of the questions, and two lesson hours less. For Information Science, the results have dropped somewhat, but this is because teachers are correcting and evaluating more strictly than in the past. For Mathematics, no marks were yet available.

Generally, it was found that the results were clearly higher than in the past and that, thanks to the change from the normal pattern of lessons, the pupils' enthusiasm does not drop off during the course of the school year.

Software and internet sites

The open learning centres contain a media library equipped with the classic sources of information (magazines, video library, specialist library and reference works) and a powerful ICT infrastructure with internet connections. It is from these open learning centres that the start page of internet is determined for every computer. The navigation structure used is the SISO system with a search engine based on 13,000 search terms in the program. This tool is being continually developed, and it contains a mass of logically structured internet bookmarks for education - for pupils, teachers and parents as well as for other interested parties. Most of the bookmarks are accompanied by critical remarks.

This basic structure includes the following sections: de mare digital (digital version of the weekly contact magazine for the teachers at the school), projects for supervised independent learning (bookmarks specially for these projects), Web of the week (a thought-provoking website in the viewer), the catalogue of the open learning centres, SISO (collection of internet bookmarks based on the classical lending library), educational sites (interesting Flemish and international sites for teachers dealing with didactic and pedagogical subjects), library catalogues (internet addresses of the most important libraries with their search engines), periodicals (internet addresses of magazines and daily newspapers), publishers (websites of publishers in Flanders, the Netherlands and some important publishers in France, the UK and Germany), search indexes (70 search engines on the internet), a literature network, a guide to writing a dissertation, information for pupils in their final year, and the Mediargus pay site that provides access to almost all the Flemish and Dutch newspapers and magazines.

The use of ICT

The ICT applications in the school can be subdivided into five sections: the internet as an information source for search assignments, CD-ROMs containing data of an encyclopaedic nature, didactic CD-ROMs with content related to the learning units, application software, and materials (hardware and software) for processing images.

Thanks to ICT, the pupils can be monitored individually through the pupil monitoring system. The use of computers at the school has become a normal activity for pupils and teachers. In one way or another, every modernization project makes use of the ICT infrastructure. Searching for information using the computers has now become a very normal activity at the school. Stimulated by the school Management and thanks to the support of a group of teachers who each possess one kind of competency or another related to the use of ICT, the school has gradually grown into a learning environment in which all the participants have started to use computers. The pupils also use their newly acquired ICT skills at home. For example, for their extracurricular projects, pupils in 3rd Grade ASO must use the on-line-course on the school's website to learn at home how to write a dissertation and to how to make a PowerPoint presentation.

3 Changes for teachers

"I used to give lessons; now I supervise pupils in their learning process."

The above description shows that teachers use ICT at the school in two different ways: when the need arises (occasional use) or in a structured way. Occasional use is characterized by use of the open learning centres for looking things up (with or without the pupils) or for an assignment that the pupils have to complete using the computer, or by the use of specialist software for a particular lesson subject.

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Structured use occurs when the use of computers is scheduled in the school timetable. The computer is then a tool for independent learning, and pupils learn how to use this tool efficiently in the entire school curriculum. It does not make sense to have everybody do everything with the computer. It is only when pupils and teachers discover that the computer can offer added value that it is practical to use the computer.

Two important problems related to this approach are, on the one hand, the fact that pupils sometimes become the instructors when it involves the use of computers and, on the other hand, that the available number of computers is sometimes not sufficient. Based on their own experience and perceptions, pupils are more comfortable than teachers when using computers. This means that some may have developed bad habits that are difficult to correct. Because of this, it is necessary to properly structure the learning processes to achieve tangible results. The school is responsible for training the teachers. The pioneers of the innovations follow external training courses. They then pass on the knowledge by giving internal refresher courses, since they can

estimate which information their colleagues need. In this way, Management makes a distinction between three groups of teachers: the Information Science teachers, the teachers who want to learn to be comfortable with the computer so that they can use it to support their work, and the teachers who participate in structured integration.

The second problem arises as soon as teachers really start to enjoy working with computers. Despite the extensive infrastructure, it still happens that teachers still cannot gain access to the computers they want. The use of the laptops is often a solution to this problem.

Due to the general use of ICT in the school, the entire team of teachers is busy with computers. None of the teachers are reticent about taking part in this development, although some teachers are more advanced in occasional use than others.

4 Changes in the organisation of the school

“Without the computers and our own software solutions, it would no longer be possible to organize this working method.”

Due to the evolution from frontal lessons, with a strict number of lesson hours and lesson timetables with fixed classrooms, to modernization projects in which teams of teachers work with groups of pupils in a project-based and extracurricular way, there arose the need to create a more flexible school organizational structure. A structure that must provide large groups of pupils with appropriate classrooms and coaches who are responsible for assignments and for providing support. A very powerful database was needed for this. This entire modernization approach is being directed by the Management team together with the ICT team and the teachers interested in educational innovation. They first develop an idea or concept and then translate it into concrete initiatives. These initiatives are therefore based on an educational, organizational, financial and infrastructural policy.

The concept is based on the principle that pupils must be stimulated to learn independently and exploratively. It involves constantly searching for methods and resources to support the pupils in that growth. In terms of infrastructure, the approach involved building two fully-fledged open learning centres. Plans for a third open learning centre are already in preparation. Given the limited surface area (see Identification above), this means constantly weighing up priorities and relocating. Moreover, cables for network applications were installed almost throughout the school.

Software is selected after being reviewed, taking account of the project objectives. A great deal of software (including software for the administration and the pupil monitoring system) is developed inside the school itself. At the specialist meeting, educational or teaching software is selected and tested, with added value as the basic principle. The hardware is purchased and configured by the person responsible

for the system. The hardware and software are maintained by the ICT co-ordinator and the school media librarian.

Didactically, the introduction of ICT in a number of lessons has resulted in a different approach – that is, a less frontally didactic and more group-oriented approach in which pupils must themselves complete the learning process by a specified end date. In addition, the extracurricular work with several groups of pupils together gives rise to another work form: there are often several coaches working with a larger group of pupils. This is only possible due to good organization at school level.

5 *Changes in co-operation with the environment*

Due to the choice of operating system, there was little support from or co-operation with the cluster or with other schools. However, the school did work together with the companies at which pupils followed their traineeships, and this provided the school with valuable feedback. The contacts with the various third-level teaching institutes that are very interested in the modernization projects and are following them closely is perceived as very valuable. For example, those third-level institutes are collecting the modernization projects on a CD-ROM to provide their own students with more information and therefore reduce the number of fact-finding visits to the school. There are also contacts with a number of publishers in connection with supervised independent learning, and the school can also rely on the local hardware suppliers.

6 *Reflection and ambitions*

Because every step in the modernization process is based on a particular concept, the school does not feel that it should be using another approach. The slow process of growth, during which the concept is worked out into concrete initiatives and linked to external and internal refresher courses, has guaranteed a sufficiently gradual development. The success of the pupil monitoring system is prompting the school to make it available to the primary schools for the following reason: all too often there is useful information available in the primary school, but it is not possible to build on that information in secondary education because the data is not passed on. The financial contribution from the government in the past for the purchase of computers and software was just a welcome addition to the budget that the school was already spending for that purpose. Now that this money is no longer being contributed, expansion of the ICT equipment will be a slower process, even though the school wants to launch a third open learning centre in the short term.

7 *Appreciation and Lessons for others*

The main advantage of the entire course mapped out by the school to promote the efficient use of computers is that the pupils are responsible for and regulate their own learning process, which is not possible with classical, usually frontally-oriented education. To ensure that this process of growth continues to flourish, a number of important conditions are necessary. The stimulating role of Management, which is breaking new ground without losing sight of the teachers who need a longer induction period, and the teambuilding among the group of teachers, are important catalysts behind a successful implementation of ICT at this school. The strengths of this school team lie in their conscious choice to base every step on a specific concept and the need to find their own solutions because they are using a less conventional operating system.