

OECD/CERI ICT PROGRAMME

A Case Study of ICT and School Improvement at I.T.C.S "E. TOSI" Busto Arsizio - MILANO - Italy

5th - 7th December 2000

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-
- [Overall view](#)
 - [The history](#)
 - [The present](#)
 - [Hypotheses and conjectures](#)
 - [Projection to the future](#)
 - [Appendix A](#)
 - [Appendix B](#)
 - [Appendix C](#)
-

Overall view

"...the school, particularly a commercial school, is an enterprise and in that way has to be considered and organised. We think people should be stimulated to do always new things because school needs changeable resources having critical analyses and research as aim of their life. How can we favour such a thing? A traditional school invests the only available resource – time – in the constant repetition of some actions. In 1983-1984 our starting goal was to free these resources." (From the interview to the manager)

"An organisation aiming at functioning better in order to save work and to devote energy to jobs giving the chance to "grow"..." (from the interview to the responsible for ICT)

For some time the Department for Public Function ("Dipartimento per la Funzione Pubblica") awards a prize to 100 projects of Public Administration that distinguish themselves in efficiency, innovation and effectiveness in the different fields of public services. Through these

prizes the "young" Ministry tries to indicate model initiatives that could allow to improve our country. Indeed it is generally characterised by the contradiction between originality, fantasy and entrepreneurial inventiveness on the one hand and unsuitability, unreliability and lack of services on the other hand. State Commercial and Technical High School "Tosi" (<http://www.itctosi.va.it>) has been awarded this prize twice, in 1995 and 1997.

The first time it was awarded the prize because of its class register (<http://www.itctosi.va.it/prog95.htm>).

Thanks to the efficiency of educational secretariat and to an intelligent program developed "at home" by the responsible for ICT in the school, every morning teachers and students find on the desk a paper with the indication of service notices, the memo on students that should show the excuse note for the previous day, a greeting card for eventual birthdays and other messages of interest. A bar code corresponds to each student. At the end of the school day the secretarial staff is able to register absences and delays of the day by means of an optical pen.

In 1997 (<http://www.itctosi.va.it/prog97.htm>) the awarded innovation was the starting point for the "Centre for self-learning".

The Centre is equipped like a book-video-tape library and is open to students for the entire morning until early afternoon.

Together with materials (books, videos, CD-ROMs) there are use cards that, besides describing the content, indicate the difficulty level, the required propaedeutical knowledge and so on. Among materials there are tailor-made software developed by teachers.





Thanks to an identification card (smart card) each student can reach with no problem all kinds of resources or surf the net. The use of this card enables to keep record of the work done in the centre. It will be an integral part of the personal record book with "educational credits"¹ acquired during the years spent at the school.

Within the technical high school the organisation efficiency of Tosi school allows today to experiment extremely individualised educational routes. At the beginning these routes puzzle parents that are obliged to cope with the complex architecture implemented by the "Technical School for guidance". Their children do not belong anymore to a class, they do not study the same programme, they are not assessed anymore by means of the traditional mark. As a result they are divided into "Homogeneous level groups" according to flexible and variable modes. They follow different "educational modules" and for each subject they have a complex of assessment related to different "progress indicators". Students like this

kind of class and these "open" programmes. During an interview they state: *"During a module we are divided according to groups of the same level after an intermediate test. In this way we can work better. There are three groups of the same level out of three classes, each one with three teachers. In each group there are less people and we are able to work in a better way."*

Parents appreciate the managerial-like setting up and the rich educational offer. The school is considered as springboard for the introduction into the work market (about 70% of diploma's holders find a job during the first year after getting the diploma).

Students show their satisfaction above all due to the large presence of technologies and services offered by the school (gyms, canteens, self-learning centre, Internet connection at school; during this year about 300 students have asked for and used school server as provider at home) and due to international exchanges. With the target to facilitate students' settling in work market exploiting curricula in a better way, Tosi high school prepares its students for exam sessions of international qualifications both as regards foreign languages (diplomas of Goethe Institut and of British Council) and as regards informatics (European Computer Driving Licence, ECDL).

The school agrees also to several European projects in the field of the different actions by Socrates Program. Among the many projects some concern information and communication technology. In particular they have to do with the participation into the creation and experimentation of self-learning modules using multimedia systems (Learning Through Multimedia) and with the implementation of a web-site and the introduction of learning modules on the net (EURO WEB).

The school has taught students to respect its materials. This allowed to save maintenance costs in such a way that it has been possible to place at



school's disposal what the headmaster calls "the main funding source".

[index](#)

The history

The first innovation was aimed at school's administrative management. It has been strongly demanded and carried on with the spur of the headmaster and of deputy headmistress.

ICT were introduced in the school since early 80s in order to automate secretariat work and to simplify the handling of students' personal data. At the beginning their main function was to reduce time spent in generally repetitive actions.

The better organisation of secretariat work enabled teachers to be better supported from a teaching point of view. It even managed to influence basically not only organisational aspects, but also the quality of students' assessment processes by teachers. Organised data can be communicated in a more effective way and their complete and prompt communication results in a change in the assessment by teachers.

At the beginning there was only a homemade software used by few testers. With the application, demands grow and this leads to a request outside the school (Software-house, often made up of former students) in order to have a more complex software to be run regularly within the school.

Thanks to new technologies there is also the chance to guarantee the maximum freedom of use of each resource present in the school and at the same time the control over every action carried out. Smart card allows to control students when they use ICT or the photocopier, or when they borrow books or CDs. It enables also the school to know exactly by whom, when and with which result a computer or another equipment has been used.

Each innovation has been introduced through a gradual and limited experimentation process. Then the subsequent organisational refining and that one of tested equipment have taken place before the complete introduction into the school. The continuity of the actual managerial team, which has been present in the school for 20 years, allowed to hoard experiences, to develop a common culture and to guarantee the training of "apprentices" through apprenticeships.

One of the most significant innovations of this school is the record on a computer of assessments expressed during assignments of marks. Data related to each student are input in a database of educational secretariat by 80% teachers.

Within the commercial school the innovative teaching method requires the engagement of teachers both as regards the organisation of subjects in modules and as regards modules' assessment and auditing.

Teachers input every assessment through the Intranet.

With this target a Web-register has been set up. It stores the different students' learning steps and is able to record results reached in educational units. For each student and for each educational unit acquired competence/knowledge/abilities are recorded. The identification of the need for remedial is in this way extremely simplified.

Families will be able to enter school's Intranet through the Web in order to check constantly the progress of their children.

Web Registro Virtuale

WEB REGISTRO VIRTUALE

Benvenuto, Prof. ROSARIA RAMPONI

Inserimento Giudizi, Moduli e Descrittori

Classe : 1 LB

Materia : EC. AZIENDALE E TECNICHE OPERATIVE

Votazione Finale [Quadrimestre](#)

[Modulo 1 - Il sistema azienda \(prima 99/00\)](#)

[Modulo 1 - Il sistema azienda e le sue rappresentazioni attraverso il bilancio \(prima 98/99\)](#)

[Modulo 2 - La attività aziendale e il bilancio \(prima 99/00\)](#)

[Modulo 2 - Organizzazione e funzioni aziendali \(prima 98/99\)](#)

[Modulo 3 - Le funzioni aziendali e i rapporti organizzativi](#)

[Modulo 3 - Lo scambio economico e azienda \(prima 98/99\)](#)

[Modulo 4 - Lo scambio economico, il mercato e la azienda \(seconda 99/00\)](#)

[Modulo 5 - Le modalità di regolamento degli scambi \(seconda 99/00\)](#)

[Modulo 6 - I mezzi di regolamento dello scambio \(seconda 99/00\)](#)

[Modulo 7 - Il finanziamento della impresa \(seconda 99/00\)](#)

[Inserimento/Modifica Modulo](#)

[Inserimento/Modifica Descrittore](#)

Torna alla [scelta classe e/o materia](#)

Torna all'ingresso del sito

During the school year 1984/1985 an experimental law-economic-business course was started in this school. Subsequently it established itself at a national level until it was comprised in the system in the school year 1996/1997. This date marks the beginning and the multiplication of experimentation and special courses as answer to the need for new vocational figures.

In 1997/1998 this school enjoyed an initiative by the Ministry of Education. This initiative involved about a hundred schools on the entire national territory and set up the Liceo Tecnico Gestionale (Managerial Technical High School), according to actual school's reform trend.

[index](#)

The present

"TOSI" TECHNICAL SCHOOL INFORMATION CARD

School name and address	Enrico Tosi Viale Stelvio, 173 Busto Arsizio 21052
Municipality, province, region, country	Busto Arsizio - Varese - Italy
Location	In the suburbs of the town
Web site	www.itctosi.va.it
Kind of school	State commercial school
Number of students	1384: 489 boys and 895 girls. Foreign students: 3
Budget	6,933,816,797 Italian lire
Budget allocated to ICT	226,797,137 Italian lire (3%)
Financial sources	Ministry of Education, students' contributions. Province, Authorities (contributions for collaboration agreements).

School staff	Teaching body: 114 permanent teachers (42 temporary teachers) Non-teaching body: 16 permanent staff (15 temporary staff)
Average number of teaching hours	15
School schedule	From 14 th September 2000 to 9 th June 2000. Weekly schedule: from 33 to 36 hours, 6 days per week.
Assessment methods	At the end of each period of four months. Modular didactic structure during the two-year guidance course of study and the three-year autonomy course of study.
Total number of multimedia computers connected to the Internet	177
Total number of other computers	2
Computer location	1 computer in each class 75 computers in 4 information technology laboratories 12 computers at the self-learning centre 8 computer in the hall 27 computers in the offices and teachers rooms 5 portable computers

"Enrico Tosi" Commercial and Technical High School is a State School belonging to secondary education of 2° Grade. It is placed in the suburbs of Busto Arsizio in the province of Varese. In this school there are students coming from the same district and from others and belonging to low-middle classes (parents' profession: about 30% are clerks, 30% workers, 10% handcrafts). The 179 multimedia computers of the school with the connection to the Intranet and the Internet are distributed in this way: one in almost every class, 75 computers in 4 labs, 12 computers in self-learning centre, 27 in administrative offices, 3 in the teaching room and 3 in each of the two classes given to teachers who care about international projects and initiatives promoted by the school. 5 available lap-tops are given on demand to students and teachers. Until the last year one lap-top was used by a handicapped student in order to study at home.

Eventually some "islands" have been equipped in halls; each one has 8 PCs and connection to the Internet open to all students.

The smart card that each student has, traces any use of photocopiers and computers enabling in such a way to control intentional damage. Each teacher and student has a personal folder on school's server. The system administrator only, that is to say the responsible for ICT, can handle such resources.

There are 5 video projectors that can be connected to computers in classes. This allows to spread the use of displays both by teachers and students.

Self-learning centre is open everyday until 2 p.m.. It is used as resource and source of materials for students' research. Besides 12 multimedia computers with connection to the Internet, there are 6 TV sets with video recorders for "viewing" activities, for information collection, self-observation and listening. Available materials are made up of a software; more precisely about 400 CD-ROMs on the different subjects, about a thousand video tapes, 300 tape cassettes, 22,000 reference volumes (encyclopaedia, handbooks, journals and so on), slides, transparencies and about a hundred tests of the different subjects stored into a PC with the related solutions at students' disposal for self-correction and assessment. The Centre has been set up to promote self-learning processes by students and to use school's educational resources completely.

However the Centre is already under-exploited; now 7-8% only of teachers stimulate its use. Often it turns out to be a safety valve, a moment to escape or an occasional occupation. Within P.O.F. (Training Offer Plan)² of this year there are two projects on management of self-learning centre and the production of remedial multimedia materials for self-learning and assessment relating to Italian and History.

The first project aims at continuing and improving the activity carried out in the last few years, increasing daily attendance in the Centre and favouring study autonomy and school remedial. The second project has as object the production of hypermedia that could serve as stimulus for the study and for the in-depth study through books.

Information technology is present as a subject by itself in the different courses and years of school record: 2 or 3 hours of texts and data handling in ordinary first and second classes, 2 hours of information and communication techniques in the five-year period of experimental high school, 5-6 hours of information technology in the three-year period of programmer course.

Mathematics and business economy contain in their programmes theoretical and practical aspects on information technology with weekly hours in labs.

In the last few years the combined use of media has largely spread out into other subjects. In Italian and History courses hypertexts (also created by teachers and students of the school) and CDs are used. In language courses CDs, the Internet and transmissions via satellite are utilised, and finally during law and economy courses researches are carried out on the Internet and on databases.

For long time the school has organised annual courses for teaching personnel and for students besides for administrative personnel and students' parents.

CDs and software supporting teaching are continuously updated and completed; technological facilities are kept by labs assistant or by a



specialised company in the case of more complex actions. Unfortunately this efficient school's availability does not correspond to an attractive demand by teachers: indeed the call for the purchase of educational journals and software is very limited.

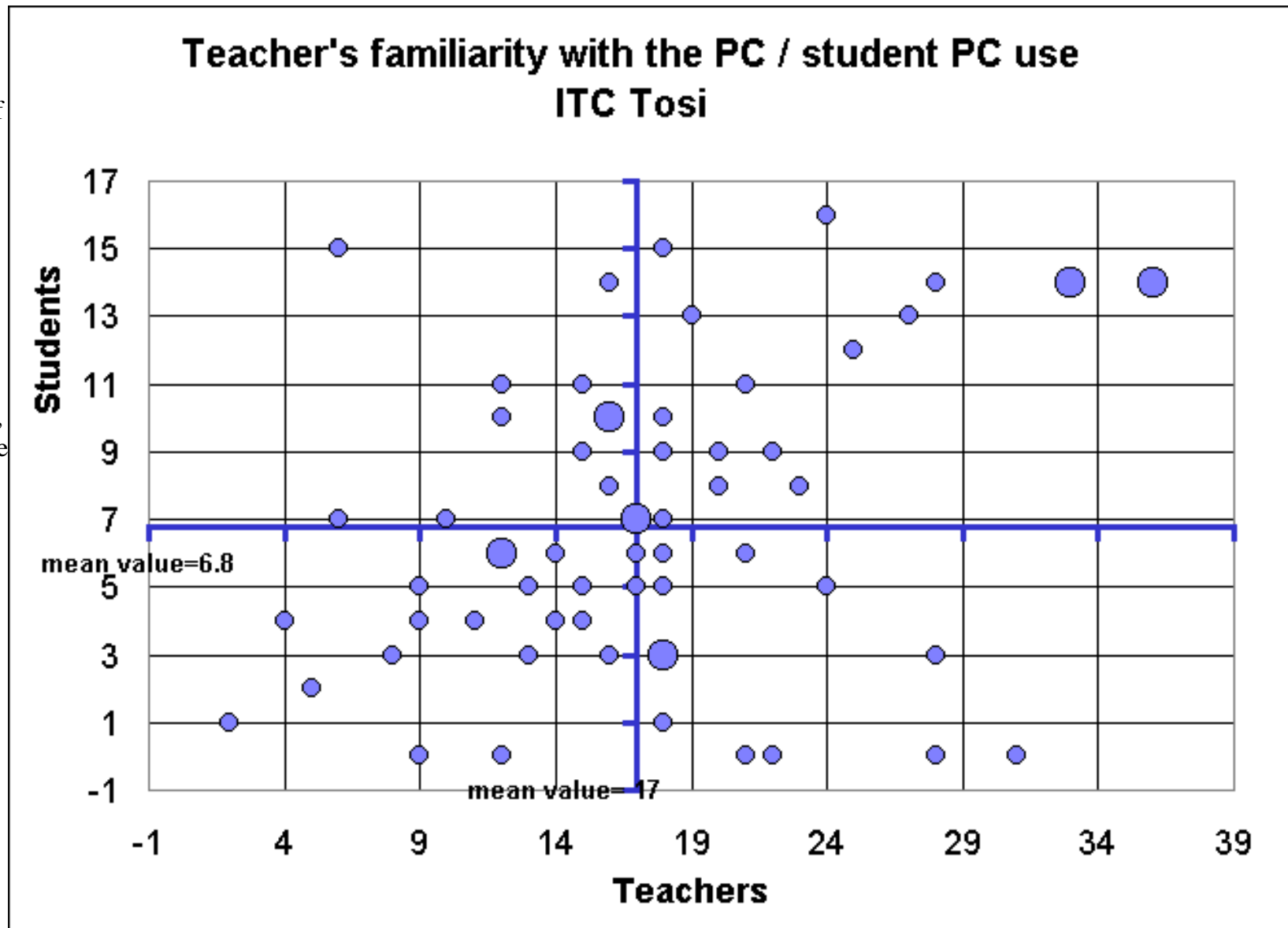
The large availability of technologies pushed teachers to widen the range of tools used in their work but this did not automatically turn into a didactics' improvement. The headmaster states: "A guy coming from this school is different from other ones. He has lived into an environment where he could see and experience new technologies even for some time. It has not been however an aware event... Students' behaviour changes according to school's atmosphere but it is not due to an aware and wanted event." (From the interview to the manager)

These words reveal the awareness of having assured an "educating" environment to students that "breath" ICT at each corner of the school. But they reveal as well a disillusion on educating action, "an aware and wanted event". Such a gap between engagement for facilities' efficiency and trust into teachers' action has probably been a burden to the absence of a group of innovative teachers that could work well together. The school is like a well functioning mechanism, a well-organised enterprise which, however, "misses a soul", just like a student has complained. Students acknowledge the efficiency of the school. On the other hand they feel themselves hyper-watched, isolated and hyper-made aware of their responsibilities. In the graph showing the link between the familiarity of teachers with ICT and their use by students in classes what strikes is a high level of the first one that however does not correspond to a differentiated use by students.

[index](#)

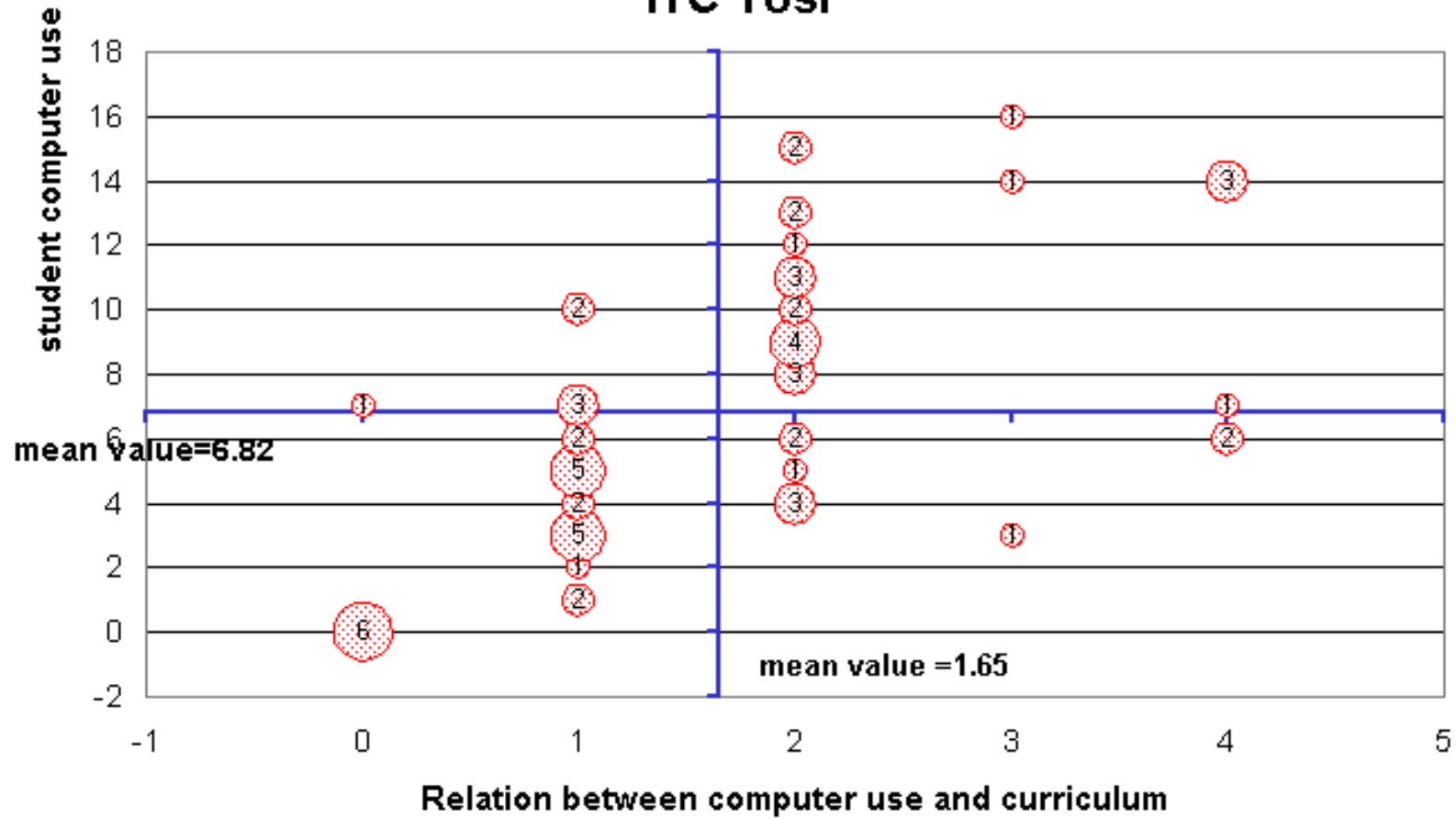
Hypotheses and conjectures

1. As for Tosi the first hypothesis seems to be valid: the introduction of new technologies has been useful in the innovation process. The improvement of school organization and management through ICT use has been the main, irreplaceable cause for the institute innovation extension. In this way everyone can use these technologies: secretarial staff (first users), teachers and students. This survey has pointed out that the widespread presence of technological infrastructures doesn't necessarily trigger off a teaching innovation. The questionnaire data show a good



percentage of ICT
introduction in
subject teaching,
but this doesn't
automatically
trigger a revision,
innovation process
of the same
subject teaching.

Relation between computer use and curriculum / student computer use ITC Tosi



2. The decision to adopt an innovation

process
in
the
school
has
been
taken
by
few
people
who
had,
moreover,
a
leading
role
within
the
school
(the
headmaster
and
his
most
direct
cooperator).
This
led
to
a
situation
in
which
there
was
no
other

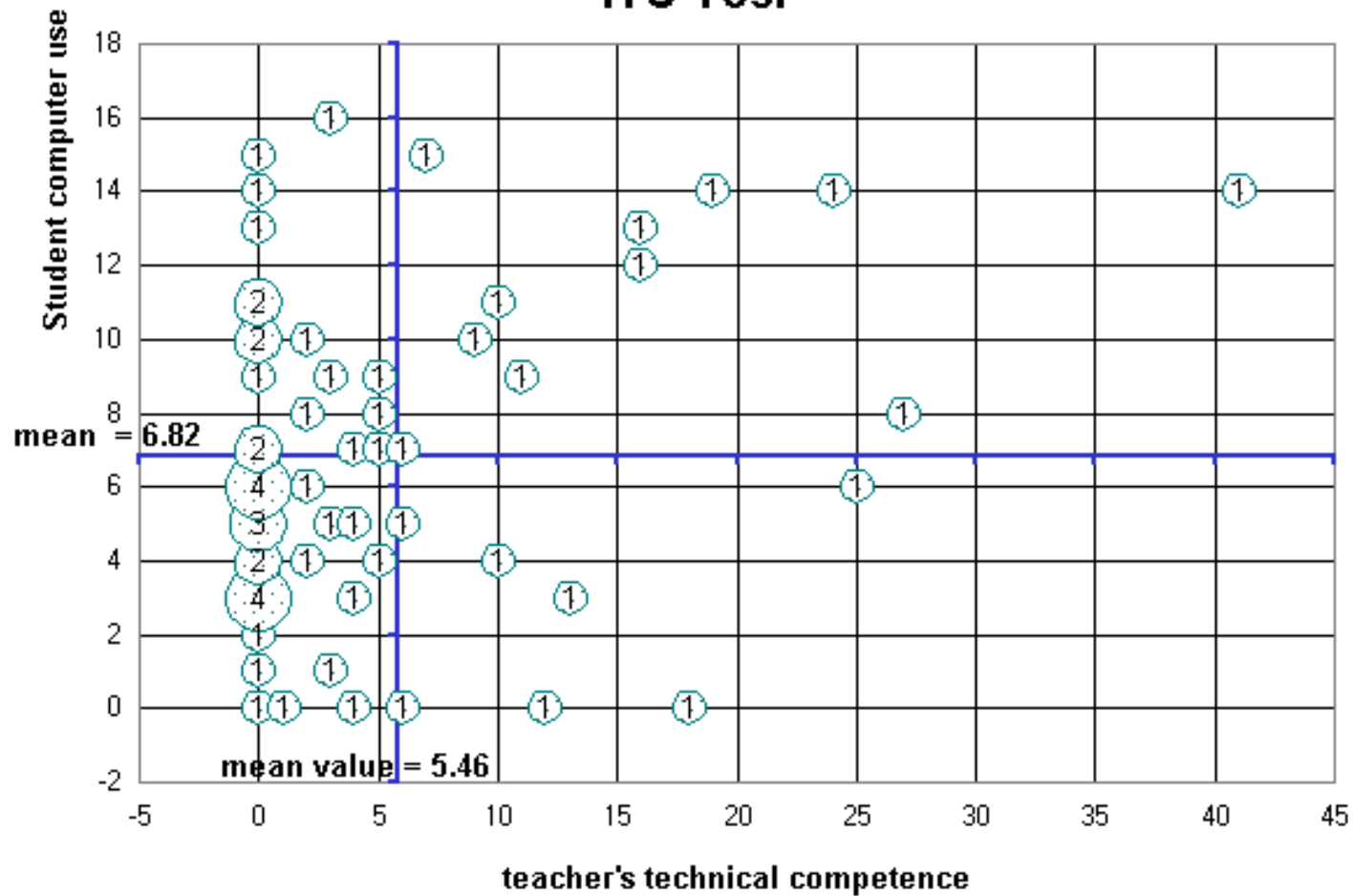
alternative:
school's
personnel
has
not
freely
decided
to
adopt
the
innovation,
but
he
had
to
conform
to
it.
It
is
indeed
not
possible
to
talk
about
a
diffusion
process
according
to
the
route
of
Rogers.
As

far
as
some
fields
were
concerned,
that
is
to
say
those
ones
related
to
organisational
structure,
the
school
as
a
whole
has
been
assailed
with
the
innovation.

3. Organisational efficiency is the jewel of this school. In this context it was ICT-infrastructure that played a fundamental role. The large presence

of technologies
caused a spread
use by students.
No sufficient
evidence has been
found to state with
certainty that ICT
use improved
learning by
students.

Teacher's competence/ student computer use ITC Tosi



survey
since
more
than
70%
students
has
a
PC
at
home
and
they
all
attend
courses
having
as
subject
the
use
of
computer
and
application
programs.
In
addition
the
large
availability
to
use
a
PC
provided
by

the
school
in
classrooms,
in
labs,
in
self-learning
centre,
in
corridors'
halls
(the
so-called
Islands)
and
the
chance
to
take
lap-tops
at
home,
guarantees
a
spread
use
of
the
computer
by
everybody.

5. Within the school
great attention is
paid to multimedia
materials used by

teachers. Smart card allows to control sites and materials looked up in; teachers themselves prepare materials that will be consulted by students. In this way products' quality is very checked and, as a consequence, very high.

[index](#)

Future projections

With no doubt there is a high level of innovation implemented within the school concerning administrative management. In this regard the school is strongly convinced to go on.

ICT responsible foresees the technological facilities' enlargement in order to provide users with more and more services and administrative, assessment clearness; computers in every class, video projectors, computers' updating in some labs. *"Our goal is to have an overview of absences in class, without having a secretary that passes an optical pen on a bar code but having a teacher who records attendance, documents and marks in a calculator. We want all parents to have the chance to watch their children progress and interviews to teachers on the Internet, to get in touch with teachers on the Web, to look at what classes do, that is to say opening teachers' plans to the public. Moreover parents could know when students will have tests in class, what is at disposal in the centre and so they could make reservations via the Internet. In short, the goal is to make school more clear from home. We hope to be able to provide families with such services as soon as possible."* (from the interview to the manager of new technologies).

Leading staff seems however to be aware of the limited involvement of teachers into the innovation process. The last resolution by the school council foresees the setting up of a team made up of internal and external experts in order to monitor and impartially evaluate the school with the object to identify weaknesses.

Since last year no updating initiatives for teachers have been started on didactics through ICT.

[index](#)

Appendix A – "TOSI" SECONDARY SCHOOL

As for other schools selected, "Tosi" secondary school was first contacted by the Italian research group's co-ordinator during the period June-July 2000.

In November 2000 the interviewers contacted again the principal to arrange and set the interviews schedule.

Two interviewers carried out the survey in the school; they worked separately or in couple in the various interviews. All the interviews were recorded except for one because of non-consent by the teacher; for the class interviews, notes were taken using the forms suggested after July workshop.

Meetings schedule - December 5th

Interview (first part)	Principal	1h 15'
Interview	Teacher involved in ICT	45'
Interview	Teacher involved in ICT	45'
Interview	Teacher involved in ICT	45'
Interview	Teacher not involved in ICT	45'
Class observation	4A secondary school specialized in technical studies (Information technology laboratory)	1h
Class observation	4C secondary school specialized in technical studies (Information technology laboratory)	1h
Interview	Administrator	30'
Interview	Responsible for ICT	45'

Meetings schedule - December 6th

Class observation	1A secondary school specialized in technical studies (in the class)	1h
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Class observation	4C IGEA (in the class)	1h
Class observation	2A secondary school specialized in technical studies (information technology laboratory)	1h
Class observation	2B secondary school specialized in technical studies (information technology laboratory)	1h
Interview	Students from the 1 st to the 5 th year of the various courses of study	30' x 5 = 2h 30'
Interview	Parent (son in the 2 nd year of secondary school specialized in technical studies)	30'
Interview	Parent (son in the 4 th year of secondary school specialized in technical studies)	30'
Interview	Parent (son in the 5 th year of modern language school)	30'
Interview	Parent (son in the 4 th year of information technology programmers)	30'
Interview	Parent (son in the 3 rd year of modern language school)	30'

Meetings schedule - December 7th

Interview (second part)	Principal	1h
Interview	Teacher involved in ICT	45'

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[index](#)

Appendix B – "TOSI" SECONDARY SCHOOL

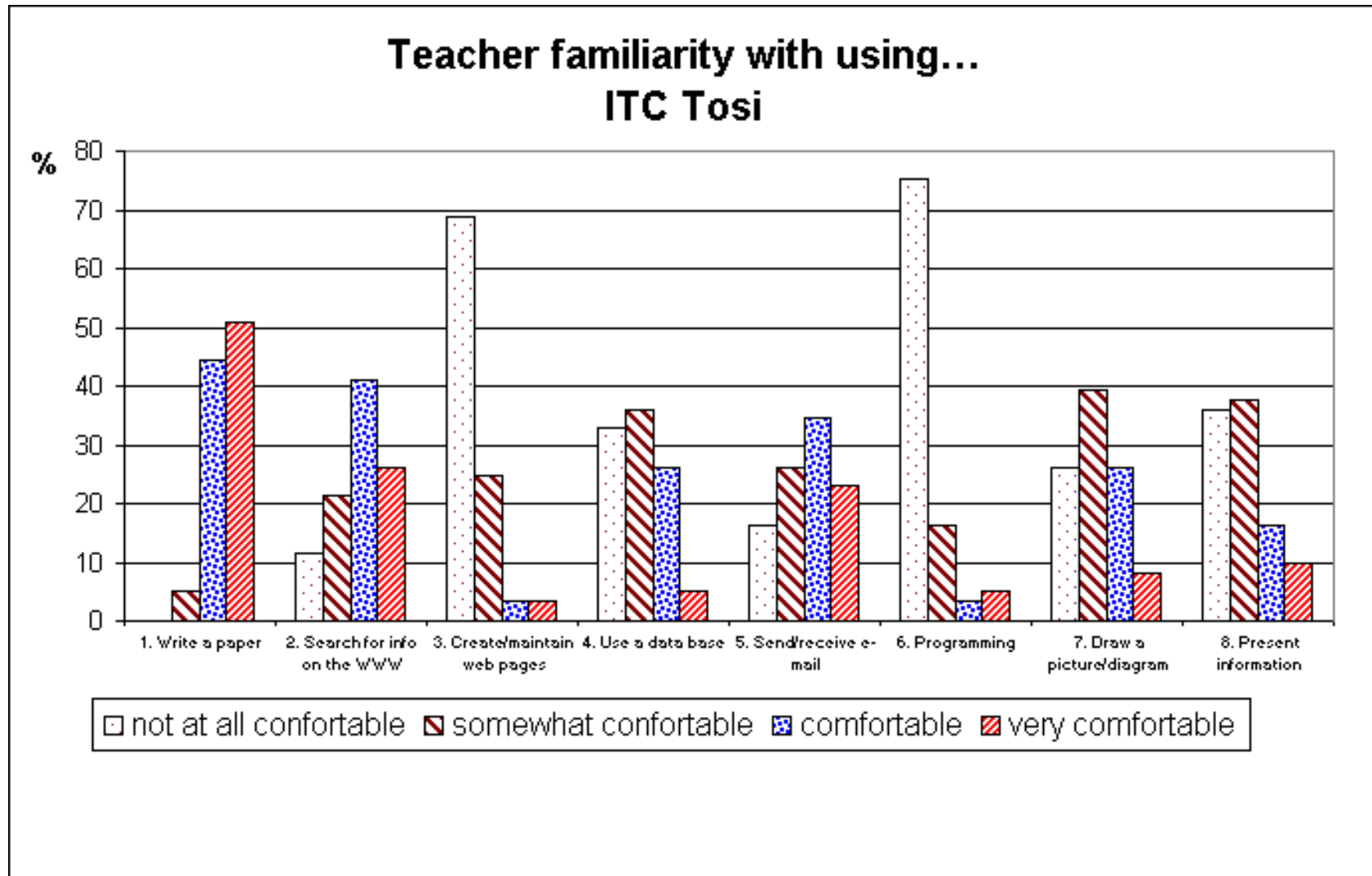


Figure 1

Per cent distribution of the answers to 1–8 questions concerning the teachers' familiarity with the computer use in different contexts. The situations where no response was given as regards to a specific application were not taken into account.

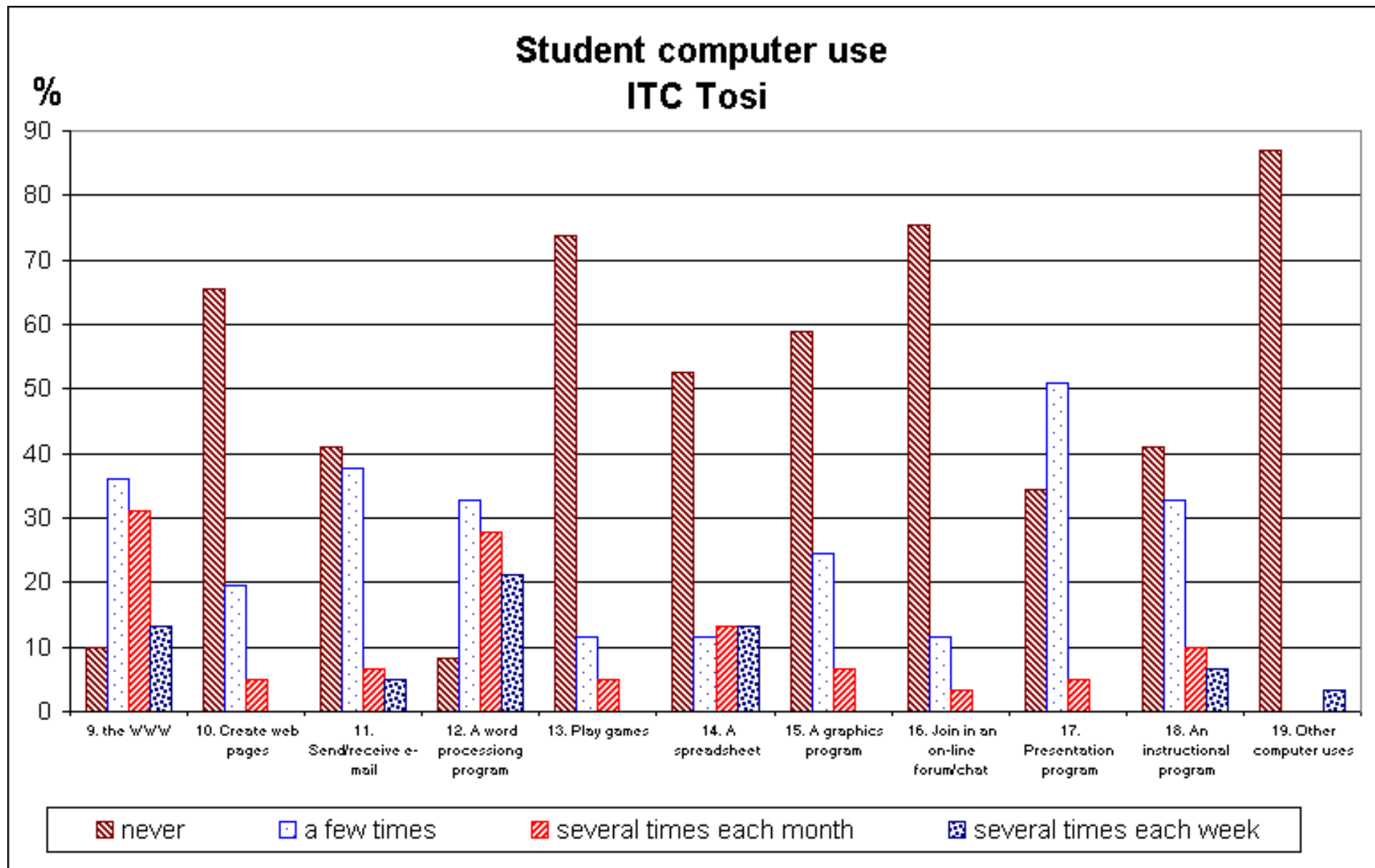


Figure 2

Per cent distribution of the answers to questions 9-19 concerning computer use by students in the class. The situations where no response was given as regards to a specific application were not taken into account.

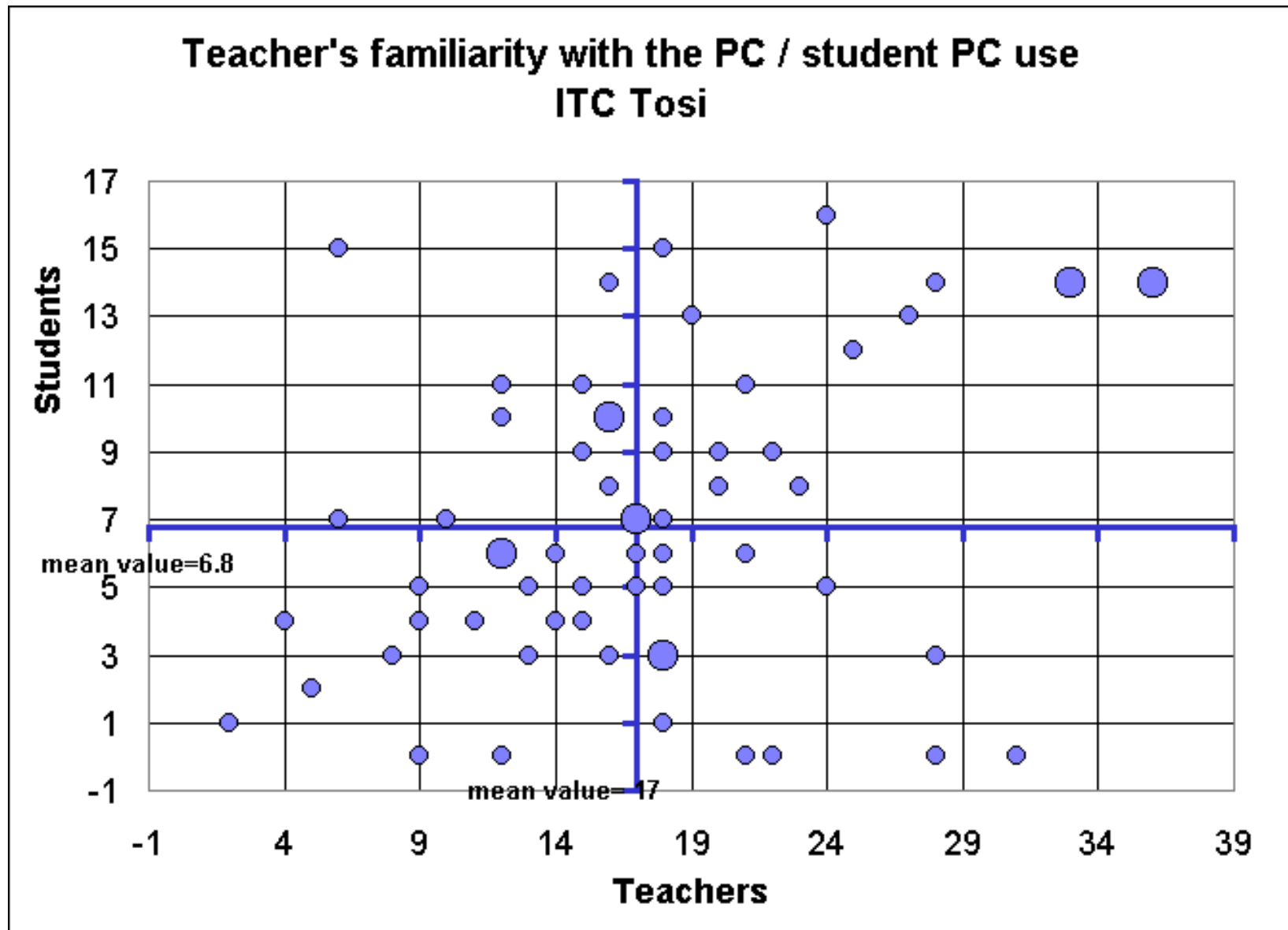


Figure 3

Relation between the familiarity of teachers with the computer (questions 1-8) and their use by students in classes (questions 9-19). The answers 1-8 were assigned a score from 0 to 3 for the possible values of answer (no familiarity, a little, enough, much). Furthermore, these scores have been weighted according to the statistic relevance pointed out by the answers to these questions (as shown in the histogram of fig. 1). The most frequent answers were assigned a double score. The bubble size indicates the datum frequency. It is interesting to notice that there is a high use of computer by teachers and students, but it is difficult to point out some relation between the two variables. It would be possible to draw a sort

of bell-shaped curve around the straight vertical line corresponding to the mean value of the teachers use. In this case it seems that the structures supply (large availability of computers even outside the classes and laboratories over a wide schedule) plays a relevant role in the computer use by students.

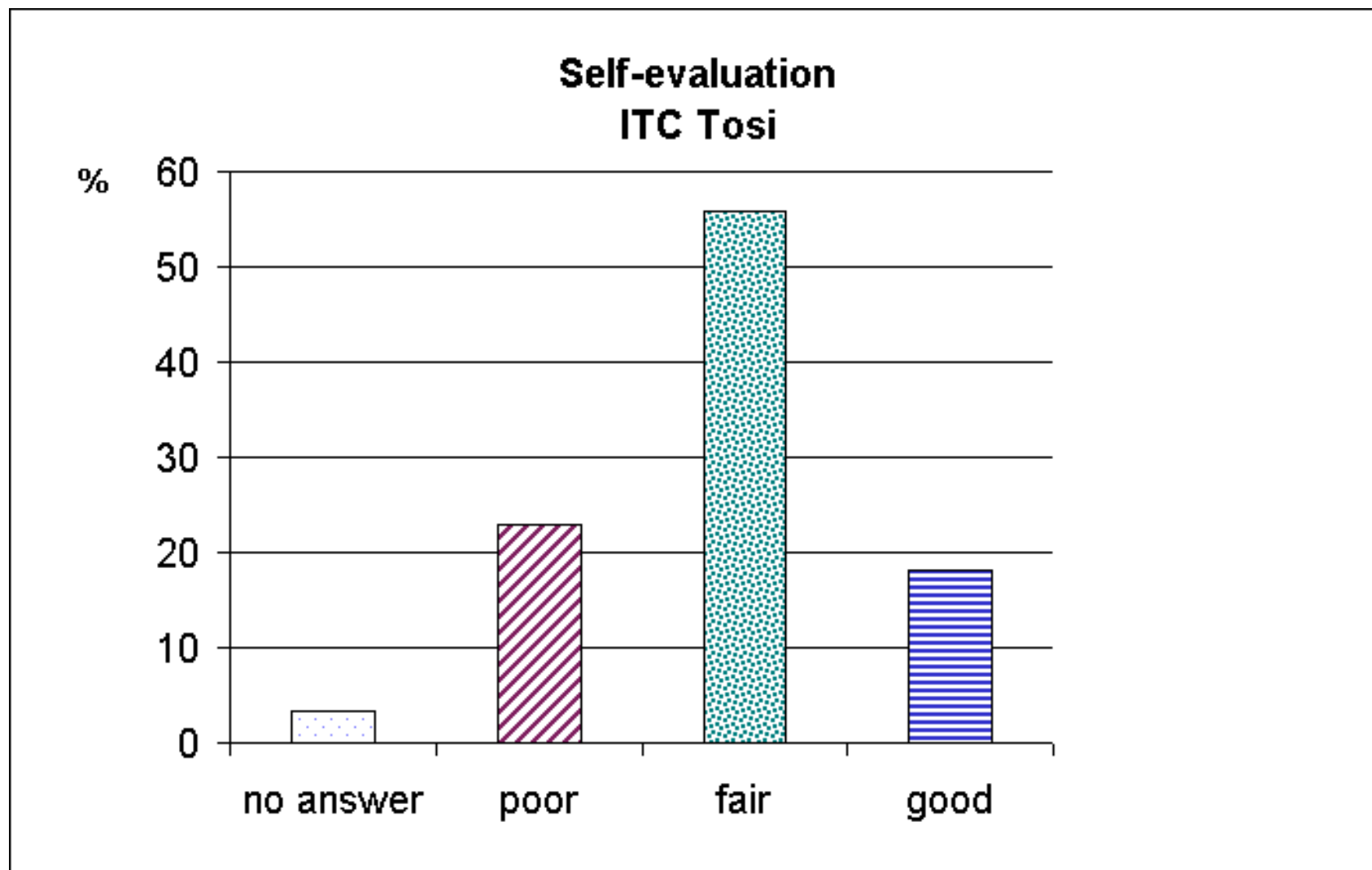


Figure 4

Per cent distribution of the answers to question 20 concerning the teachers' self-evaluation about their computer use skill (How would you rate your ability to use a computer? Choices are: good, fair, poor).

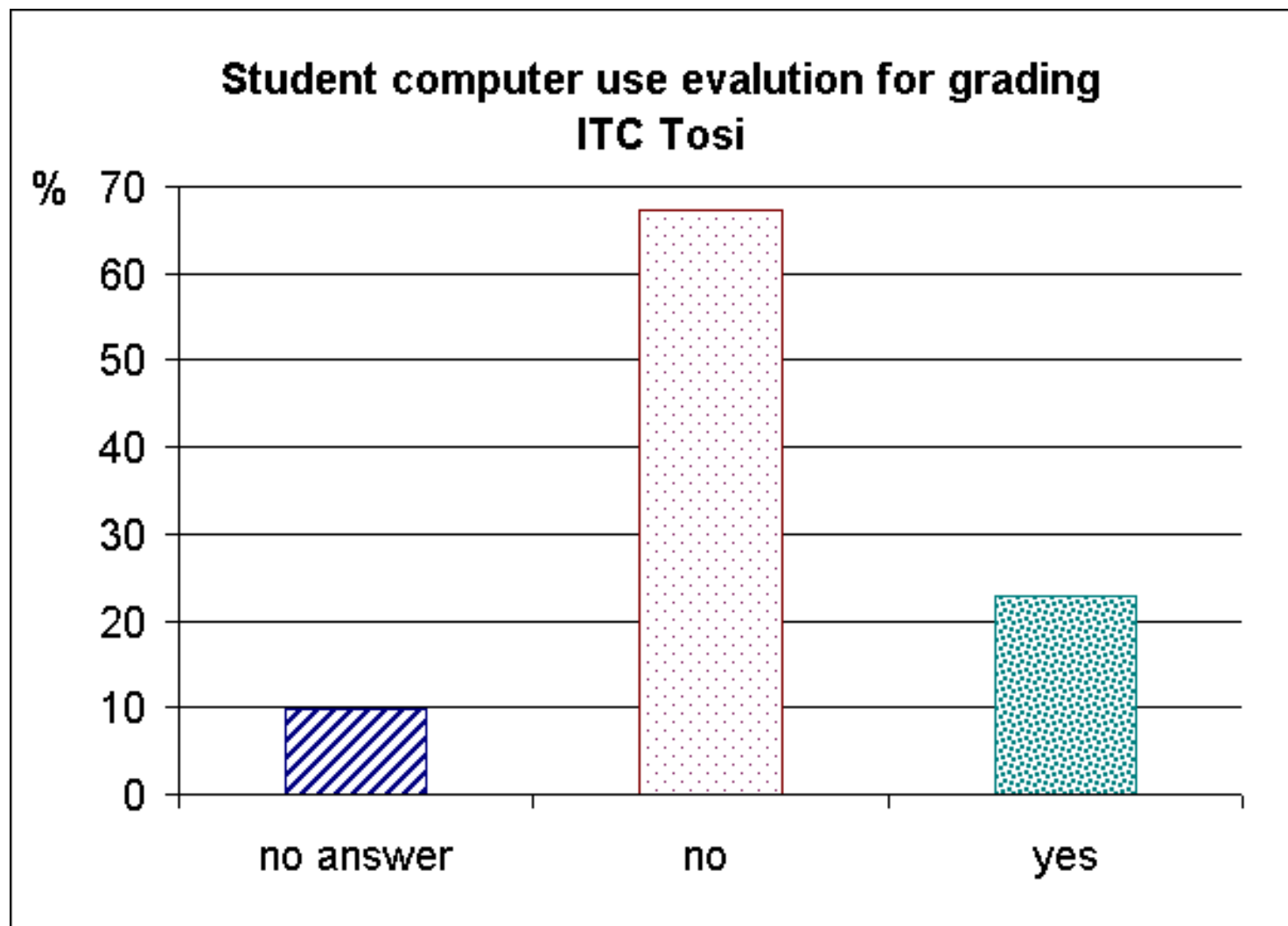
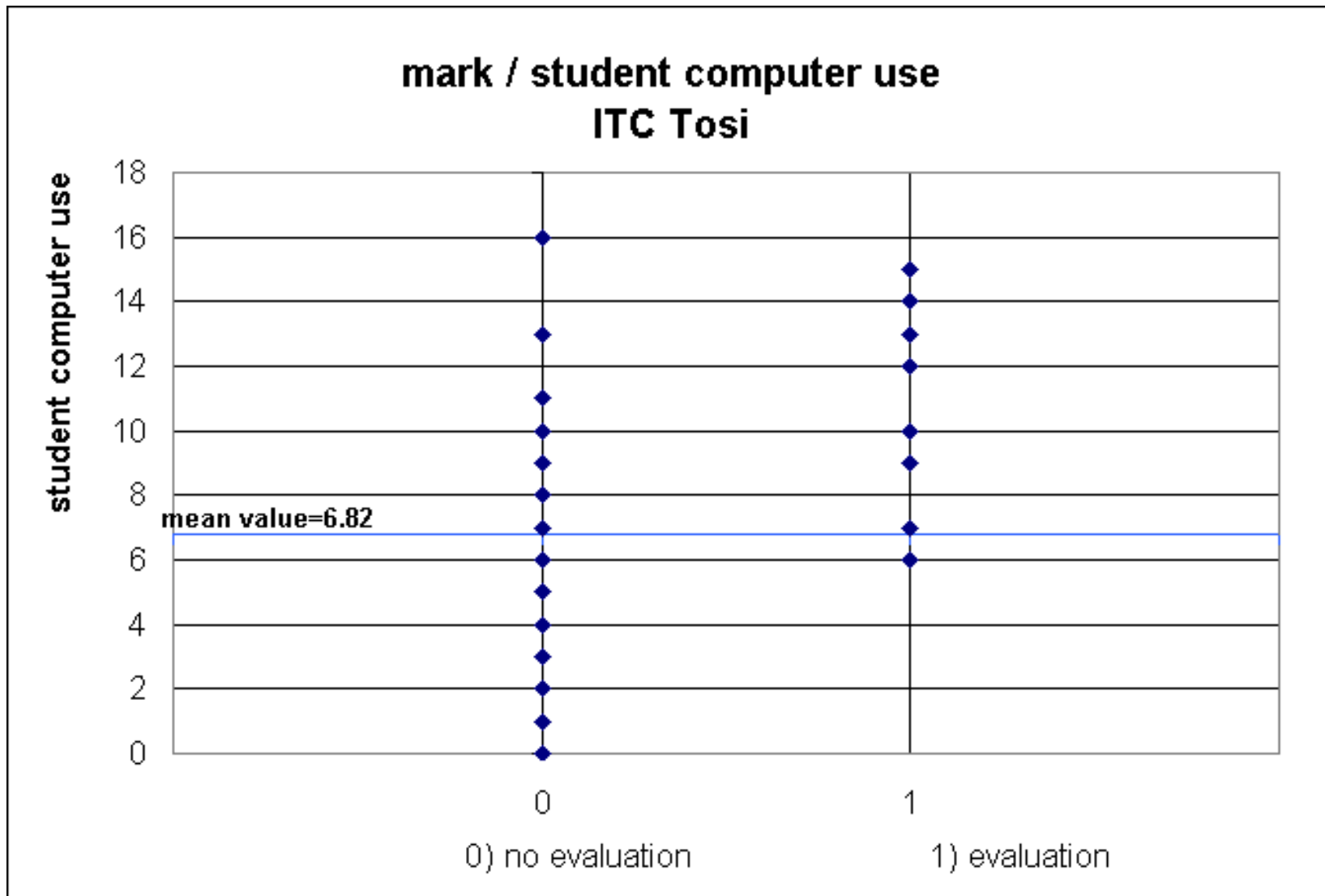


Figure 5

Per cent distribution of the answers to question 21 about the importance of computer use at the moment of students assessment. (Was student computer use ever evaluated for grading? Yes – No).

**Figure 6**

Comparison between ICT applications suggested to students in class (questions 9-19) and the computer work assessment in giving marks (question 21). On abscissa, 0 means lack of evaluation and 1 means evaluation. The sum of scores concerning the uses of computer suggested to students is on ordinate; their values range from 0 = never or no answer to 3 = many times per week. Almost all the values corresponding to the assessment presence (points of abscissa 1) lie above the horizontal line which indicates the mean value. When the computer-assisted activities are taken into account, the use suggested is likely to be greater.

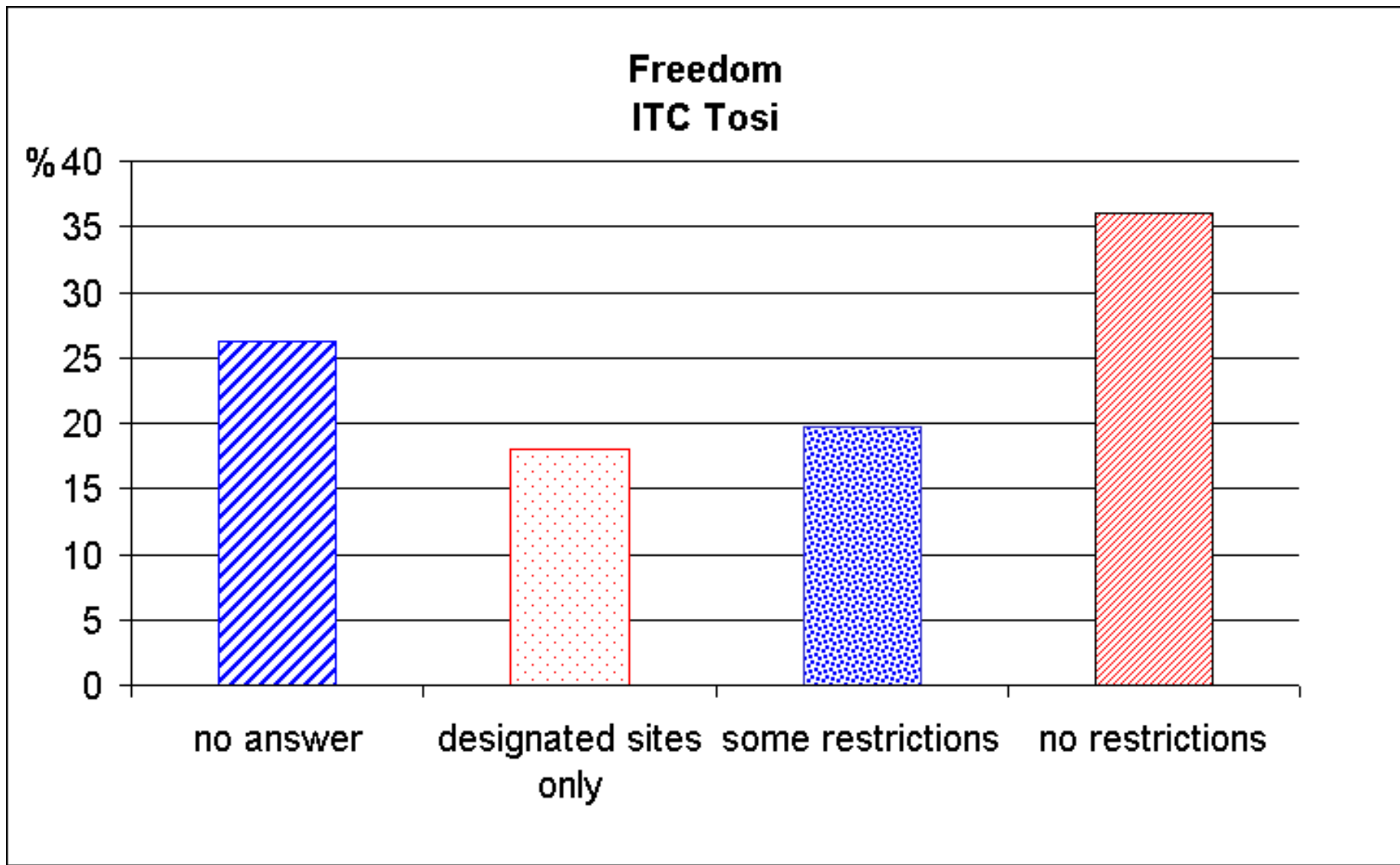


Figure 7

Per cent distribution of the answers to question 22 concerning the restrictions imposed by teachers as to the Internet access by students (if you assigned World Wide Web searching, how much freedom did you allow students in locating sites to visit?): no restrictions, some restrictions, designated sites only.

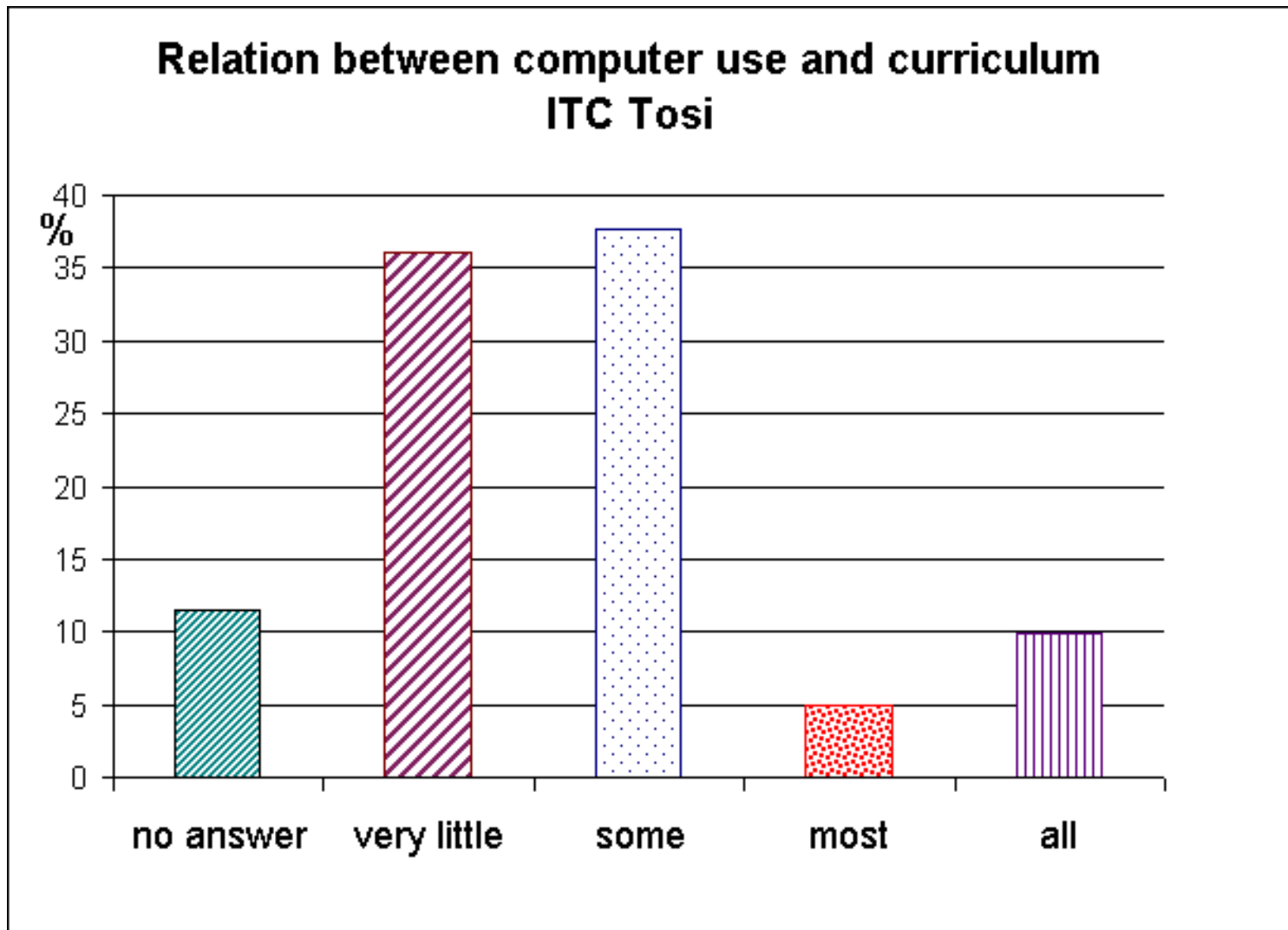


Figure 8

Per cent distribution of the answers to question 24: at what extent computer use is directly related to the didactic planning (what portion of the computer use in your classes was directly related to the course content): all, most, some, very little.

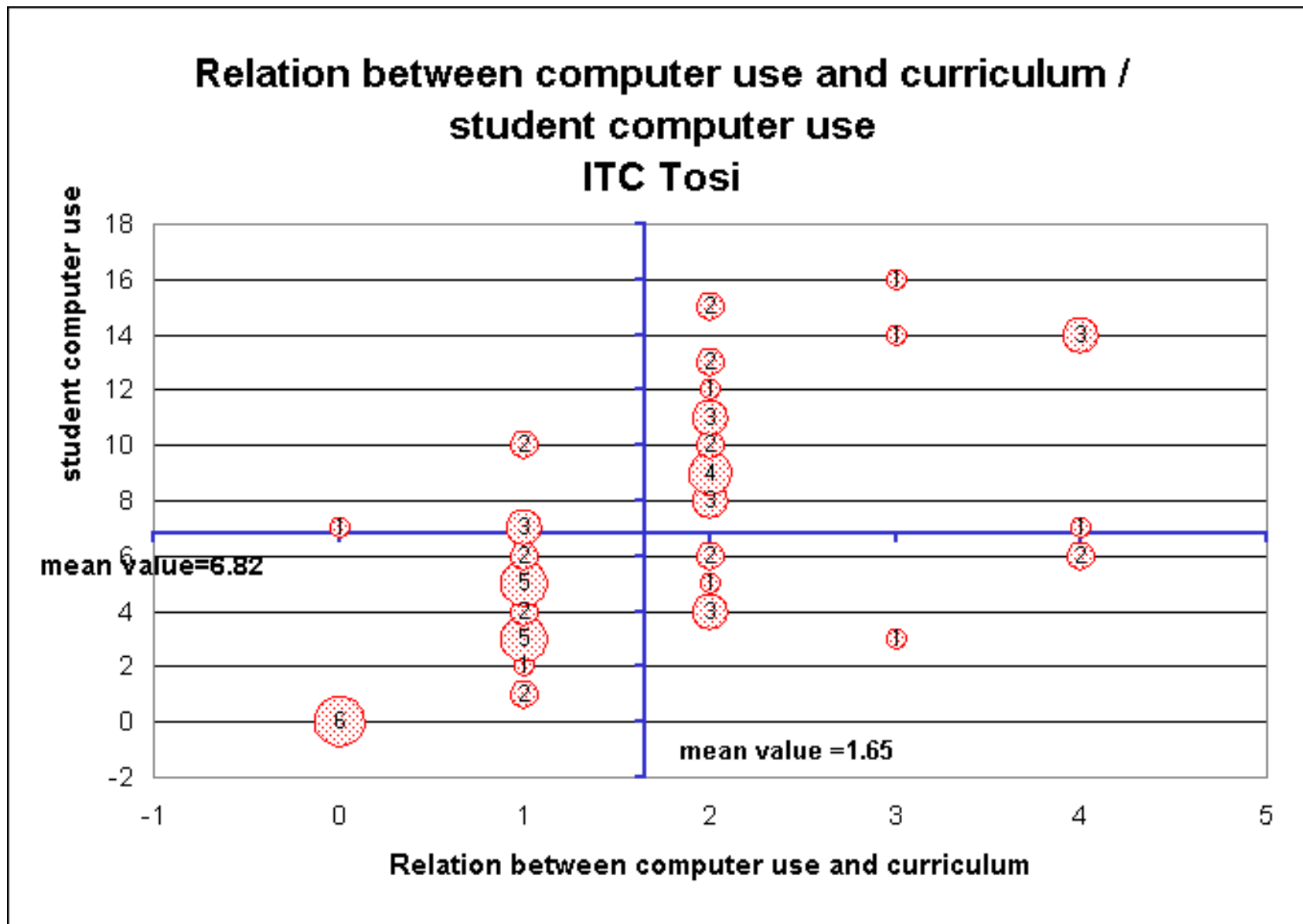


Figure 9

Comparison between ICT applications suggested to students in class (questions 9-19) and their correlation with curriculum (question 24). The answers concerning ICT integration in curriculum are given on abscissa. Values range from 0 = no answer, 1 = very little to 4 = completely. The sum of the scores given to answers 9-19 is on ordinate, that is 0 = never and 3 = many times per week. The bubbles size shows the frequency (the number inside the bubble) of the given value. The sum of these frequencies corresponds to the number of teachers who have answered the questionnaire. The points are mainly arranged in the first and second quadrants thus suggesting a positive correlation between ICT integration in

curriculum and variety of the uses proposed to students in class. The points in the fourth quadrant where the high correlation with curriculum is combined with a limited computer application suggested to students in class could be an indication of the attitude of some teachers of the scientific, technical area who confine the didactic use of ICT to the traditional applications of their programs (for example the Pascal programming for mathematics teachers).

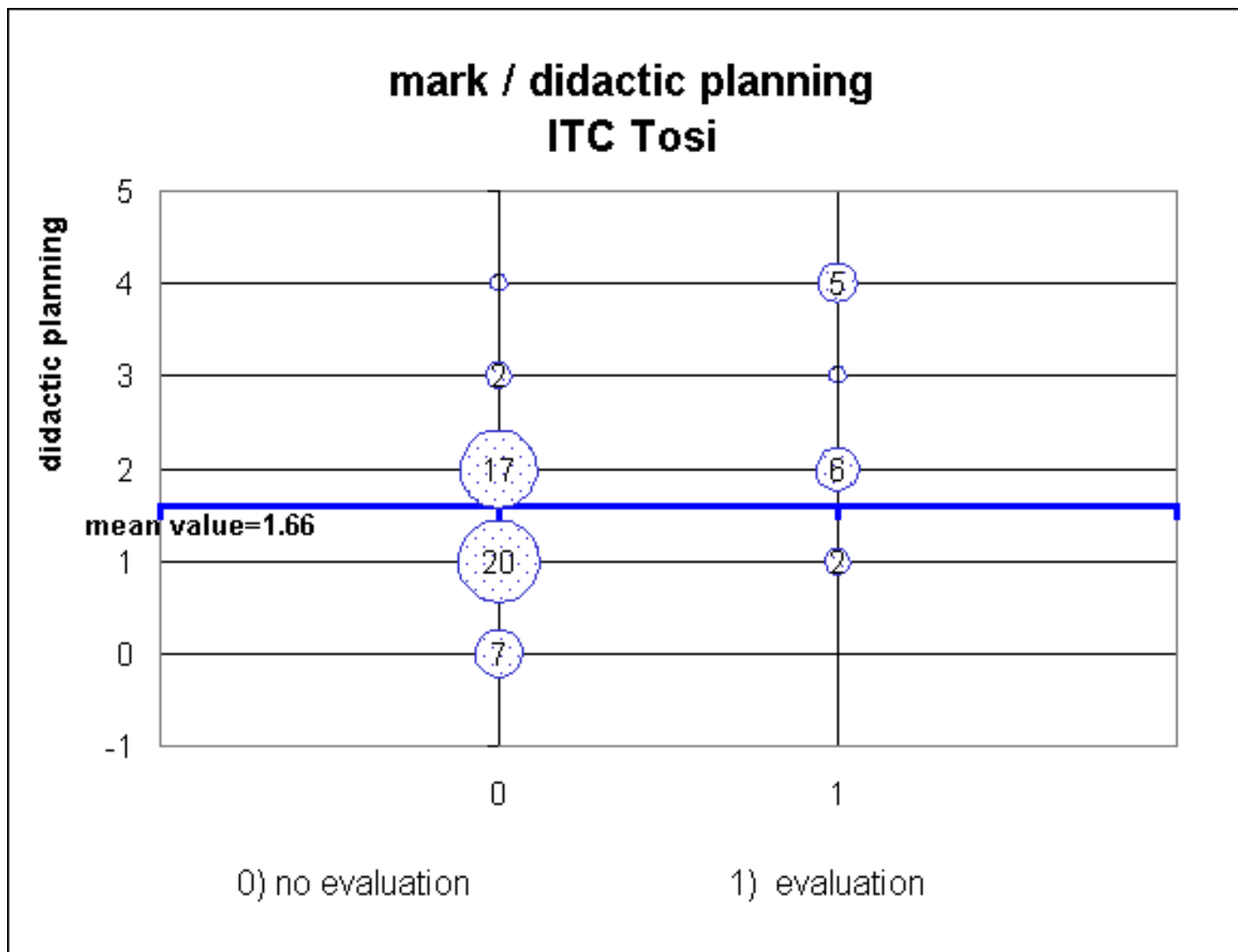


Figure 10

Comparison between computer use assessment in the assignment of marks (question 21) and link between computer use and didactic planning

(question 24). The presence or absence of assessment are shown on abscissa (yes/no = 1/0), while on ordinate the values range from 0 = no answer, 1 = very little, up to 4 = completely. The bubble size shows the frequency of the given value. The sum of the values given in the bubbles correspond to the number of the answers obtained. As we have already seen in Figure 6, the higher number of values corresponds to an absence of computer use assessment. This could mean that information technology is not a teaching subject but only one of its tools.

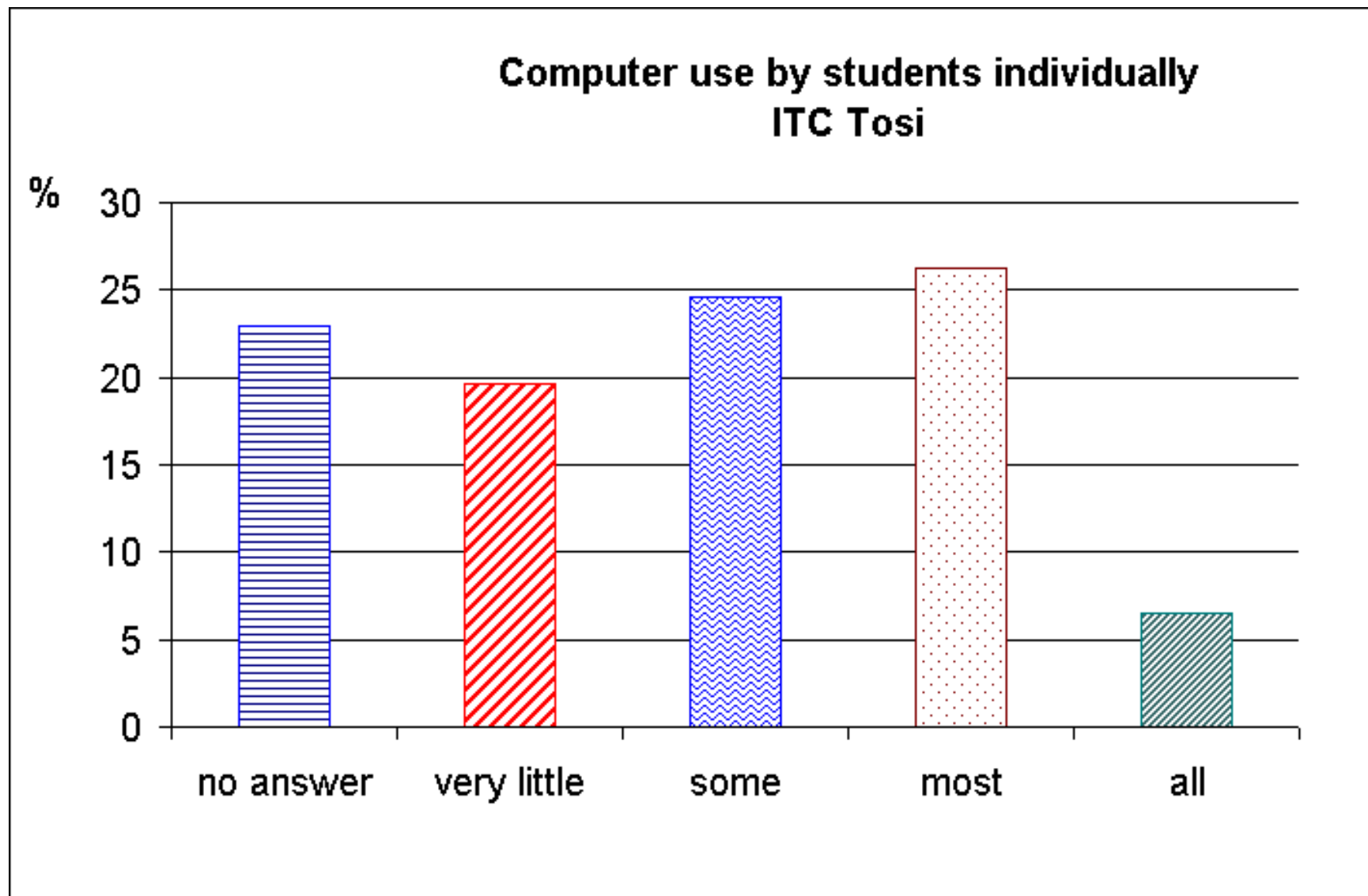


Figure 11

Per cent distribution of the answers to question 25 concerning the individual computer use by students in the class (what portion of the computer use that you assigned was done by students individually?): all, most, some, very little.

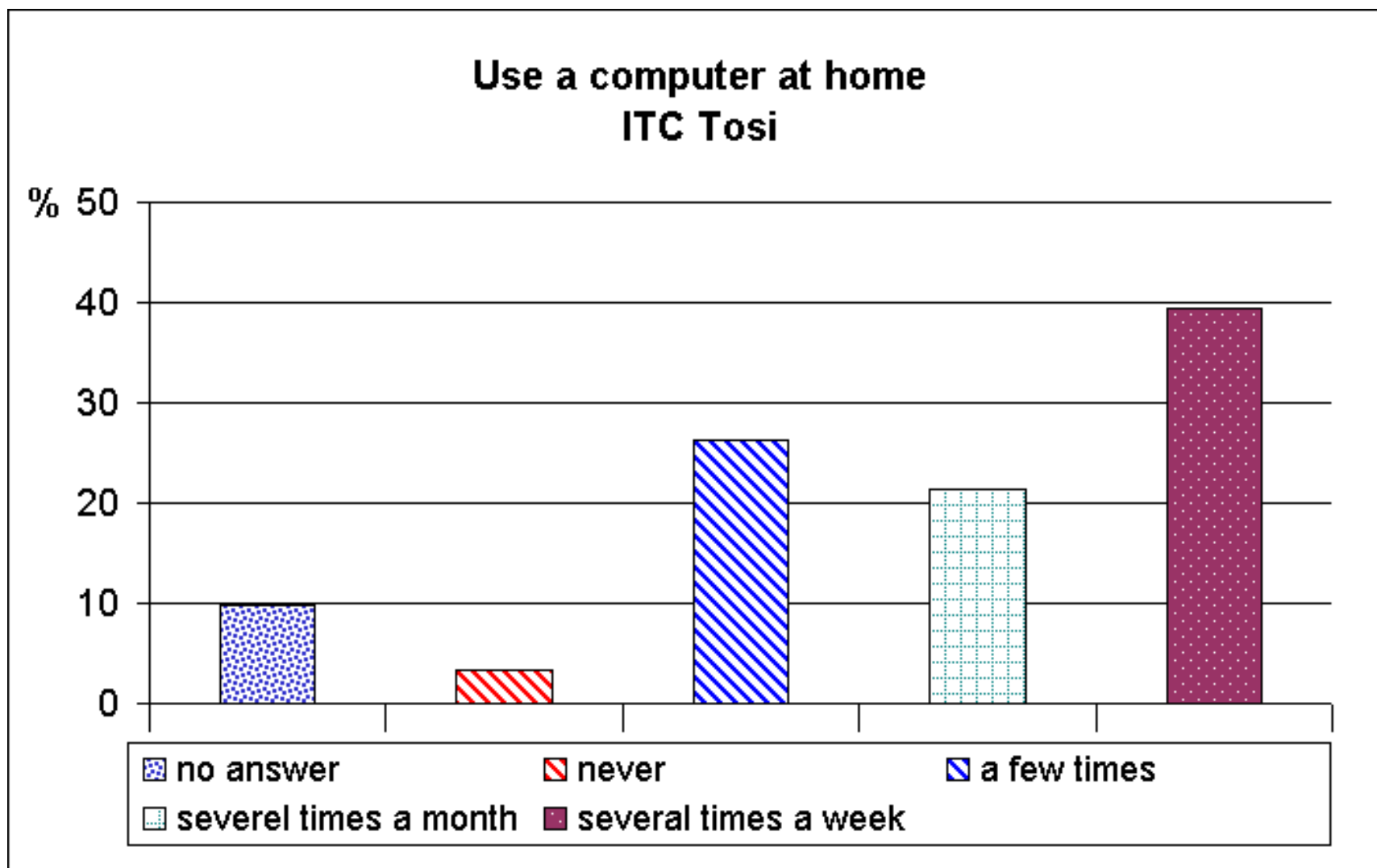
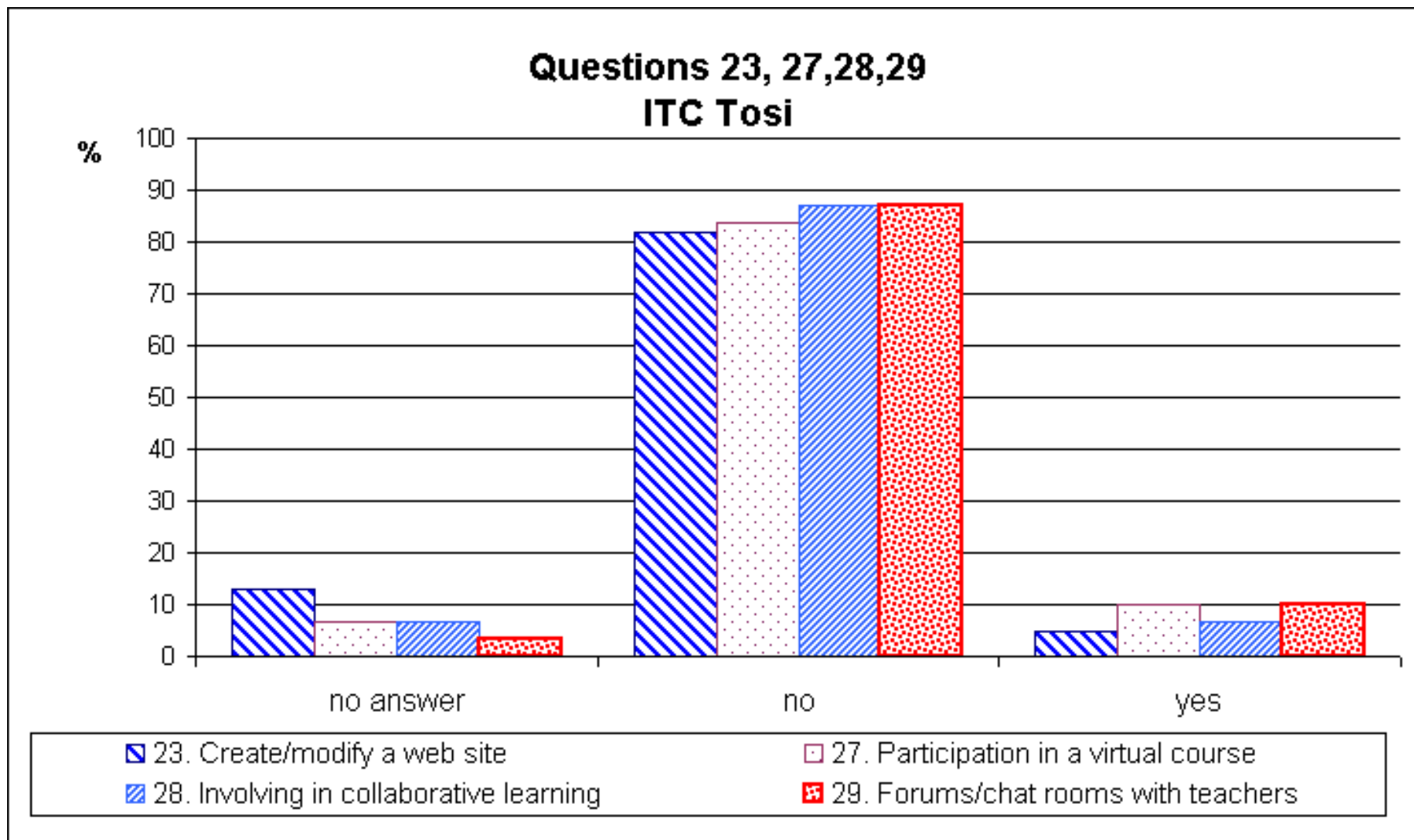


Figure 12

Per cent distribution of the answers to question 26 concerning the teachers' computer use at home to prepare their lessons (how often did you use a computer at home for preparing for teaching?)



Per cent distribution of the answers to the question about ICT activities by teachers within their professional training courses (question 27 and 29) or about their work with the classes (questions 23, 28).

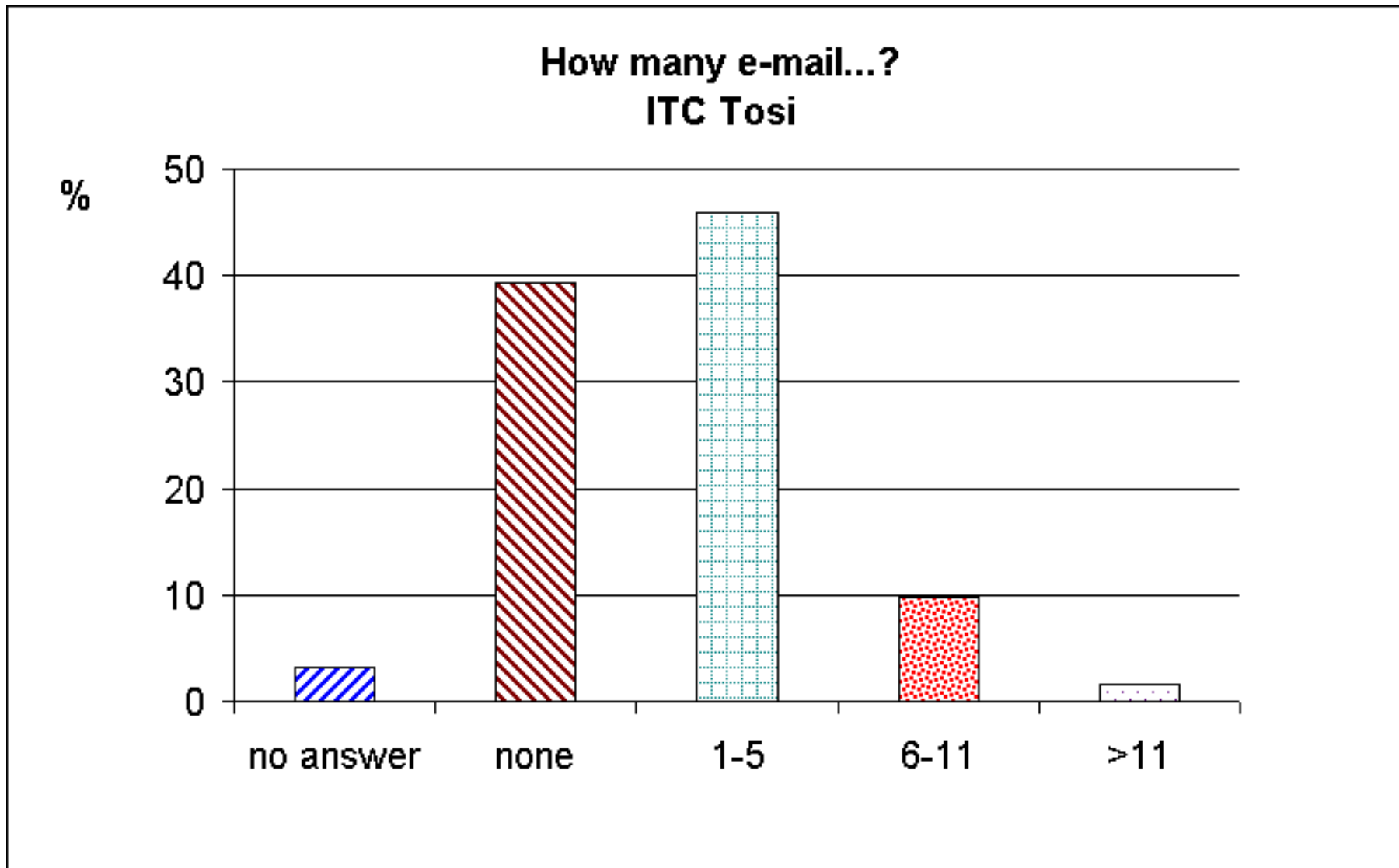


Figure 14

Per cent distribution of the answers to question 30 concerning the daily e-mail messages received by teachers (how many e-mail messages total do you send each day on average).

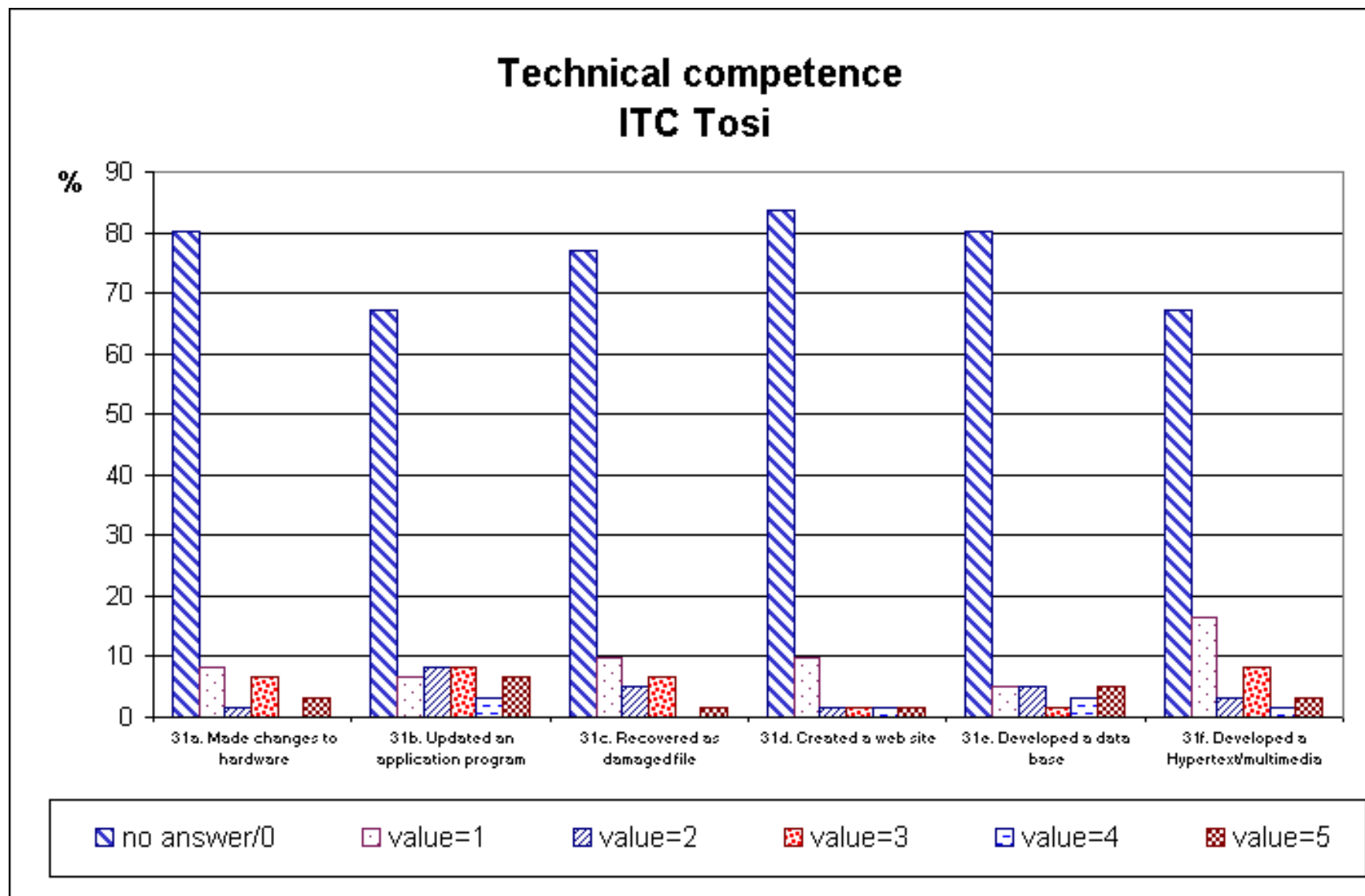


Figure 15

Per cent distribution of the answers to 31a – f questions concerning the teachers' technical skills and uses. The questionnaire suggested to answer giving a score from 1 to 5.

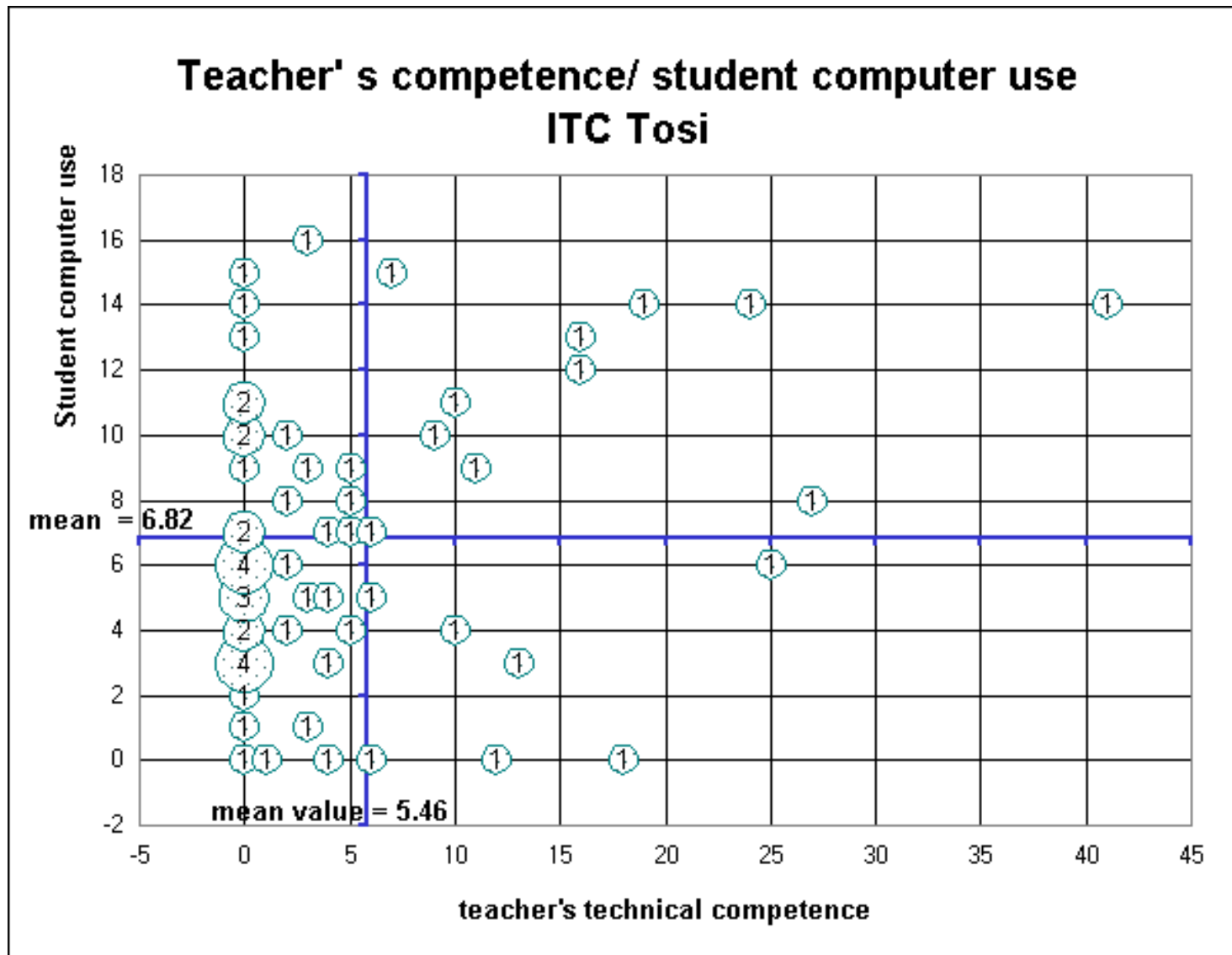


Figure 16

Relation between the technical competence and experience of teachers in the computer use (question 31a – f) and its use by students in classes (question 9-19). The bubbles size shows the frequency of the value which is also indicated by the number inside each bubble. The sum of these numbers corresponds to the answers obtained. On ordinate, there is the sum of the points given to the answers 9-19. The score for each question ranges from 0 = never or no answers to 3 = more times per week. On abscissa there is the weighted sum of the answers concerning the teachers' competence. The "weight" is obtained by an analysis of frequency of the answers 31a – f (fig. 15). The answers to questions 31b ("updated an application program – word processor, graphics programs, etc."), 31d (created a web site") and 31f ("developed a hypertext, a multimedia with

your class", a special question added by the Italian research group) have a double weight.

It is evident that few teachers have technical skills, but this doesn't seem to be an important variable compared to the variety of computer use suggested to students in the class.

[index](#)

Appendice C – "TOSI" SECONDARY SCHOOL

"Tosi" secondary school is fairly known at a national level because of its role as pilot school in the experimentation of the projects carried out in the last years: i.e. "IGEA" concerning Business, Economic and Legal Course and "ERICA" linguistic studies. These projects are now part of the Italian school system. Tosi has monitored, for the Ministry of Education, the Development Program of the new technologies aiming at spreading information and communication technologies in the Italian schools (http://www.istruzione.it/innovazione_scuola/didattica/pstd.htm) and (http://www.istruzione.it/innovazione_scuola/didattica/mon_3.htm).

The person responsible for ICT provided us with a wide press review of the latest articles published. Most of them are published in local newspapers and illustrate the various projects, open competitions for students and initiatives which "Tosi" school agreed to in the last few years. Two articles concerning the prizes won by the school in 1995 and 1997 about the 100 projects for the public administration, are published in the monthly review "100 projects at the service of citizens. How to improve public offices and to spread innovation in the public administration", by the Presidency of the Council of Ministers – Public Function Department - published by the State Printing Works and Stationery Office – State Mint in March 1995 and May 1997. Further material is available on the web at the following addresses: <http://www.itctosi.va.it/prog95.htm> and <http://www.itctosi.va.it/prog97.htm>

[index](#)

¹ Educational credits are credits gained by students doing some activities outside traditional school subjects. They give further points during state exams at the end of the High School.

[back](#)

² Training Offer Plan is schools' "ID": within this plan each school presents families, and generally public opinion, its own particular educational project, the started courses, strategies to guarantee the training success of its own students, school's facilities and so on.

[back](#)
