

# New Technologies in Teaching Paleography

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## Abstract

After a short introduction describing the instruments that the authors created for research and teaching in Latin paleography and disciplines studying ancient books, the problems detected during last two years with students attending the course of Latin paleography are reported.

The description of the inquiry made all over the nation on paleography teaching is then reported and the lecturers' answers are discussed. Soon after the results of a survey on the students attending the Latin paleography course of one of the authors are analyzed.

In the conclusion some hints are given to introduce positive changes in the teaching of Latin paleography and, what is more important, in the students' performances.

**Key words:** history, information system, paleography, teaching.

## Introduction

During last years many instruments for teaching and research in paleography have been planned and carried out; they mostly were dynamic web sites based on information systems, which were used to manage bibliographical data on medieval manuscripts and to implement the processes usually adopted from researchers for the collection of information.

The online systems helped scholars in better analyzing the bibliographical data they collected, and produced relevant effects on research and teaching. The educational effects described above mostly depended on the involvement of the students attending paleography courses, who accepted to contribute to the analysis and description of ancient manuscripts and to collect the bibliography concerning those manuscripts.

Furthermore, the comparison of former experiences with the studies on communities of learners (CoLs) and communities of practices (CoPs) involving IT/ICT use, led hypothesize the presence of new features for the use of Information Systems in educational contexts. Management Information Systems have proven in fact useful to define a new pedagogical paradigm, which could

help students to better and deeply develop their knowledge and skills and to easily face complex phenomena and problems. The instruments and methods the authors pointed out in the "implementation of practices by means of the IT/ICT", led to a new educational paradigm strongly based on IT/ICT use and to the proposal of its introduction in higher education.

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## Teaching Paleography

To get an idea of the structure of the learning environments the students were engaged with, a short description of the web sites created in last years is reported below.

*Women and written culture in the Middle Ages* (Cartelli, Miglio, & Palma, 2001), manages two different types of data:

- a) women who wrote manuscripts in the Middle Ages,
- b) manuscripts written by them.

The online information system underlying the web site let also people see the women's handwriting styles by means of suitable images (whether they were available). The database with the data on manuscripts and women can be accessed only by the authors and allowed people for the input and correction of the bibliographical data; on the contrary, the information contained in the database can be queried by everyone.

The *Open Catalogue of Manuscripts of the Malatestiana Library* (Cartelli & Palma, 2002, 2003; Cartelli, D'Altri, Errani, Palma, & Zanfini, 2008), is the best example of a complex information system created until now (it is derived from the more general idea of an Open Catalogue and has been made up by the staff of the Malatestiana Library). Once again the online information system underpinning the site has different sections (i.e., every library can activate one or more sections depending on its resources), and each section is an autonomous system managing different kinds of information: a) first, there are documents concerning the library and its manuscripts (the history of the library, the persons who worked at the construction of the collections of the manuscripts etc.), b) the second section reproduces the manuscripts (possibly all the folios of all the books), with a resolution high enough to let scholars and scientists obtain any visual information they could like on the library materials, without being forced to physically go to the library and getting the manuscripts at hand, c) the bibliography of the texts, the journals and all printed materials on the manuscripts in the library is managed in the third section, d) special communication subsystems like forum, chat etc. to be used from people studying the manuscripts in the library follow; they all aim at creating communities of interest, study and practice and helping people in these communities to share ideas and information, to propose suggestions etc.

*BMB on line* (Cartelli & Palma, 2004), is a pure bibliographical information system which manages the quotations of Beneventan manuscripts (i. e. books written in a particular script used in Southern Italy during the Middle Ages). People engaged with the collection of the quotations of those manuscripts are grouped into three categories: a) contributors, who can access web forms by writing, modifying and deleting bibliographical data; b) scientific administrators, who can manage all data and write, modify, and certify bibliographical materials (i.e., only certified materials can be queried by general users); c) the system administrator, who is allowed to do all operations, including the modification or deletion of certified data. General users can only access bibliographical materials in the site according to different query pages: a) by author's name, b) by manuscript, c) by contributor, d) by one or more words or part of them concerning title, location, or bibliographical abstract of a given publication.

The online information influenced much more than expected the educational environments and, when the effects they produced on students were compared with the results of North American researchers working on technological constructivist learning environments, produced the following remarks (Cartelli, 2007):

1. the information systems contributed in the creation of constructivist learning environments and helped students develop cognitive apprenticeship strategies (Jonassen, 1994), very useful for the improvement of students' learning and performances,

2. the features of communities of learners (CoLs) and fostered communities of learners (FCL) were detected in the classes involved in the use of the described systems (Brown & Campione, 1996); otherwise stated, the online information systems, while supporting and extending traditional learning strategies, induced the creation of special communities, never detected in traditional paleography courses,
3. new skills emerged in the students while working on the information systems described above (Scardamalia & Bereiter, 1996): a) talent in working in a group, b) easier facing of complex tasks (thanks to the help each student could have from colleagues) and c) raising of the individual's peculiarities within the community,
4. new cross competences were detected: a) better computing skills with respect to those of students attending traditional computing literacy courses, b) development of meta-cognitive strategies.

The above issues led to the hypothesis of the pedagogical paradigm: "implementation of practices by means of the IT/ICT". The features of this paradigm are similar to those described from researchers in IT/ICT fields, when trying to explain the transfer of knowledge and expertise in people (Rickard, 2007), but are mostly based on human and social factors with respect to former ones.

More specifically, by introducing information systems in learning environments, students are forced to build new knowledge in three different ways:

1. individually, by interacting with the environment they are immersed in (natural or virtual, populated or not by other subjects etc.),
2. in the community developed around the information system; or by using Wenger's words (2004), they contribute to the construction of the identity of the communities as autonomous social environments, where people have common aims and motivations and share a repertoire of instruments, made of signs, symbols, processes and strategies,
3. interacting with the society knowledge (but it is better to say scientific knowledge), which is well codified, approved by the scientific community and implemented in the information system.

## **Students' Problems and the Analysis of Teaching**

It has to be noted that the online information systems described in the introduction have been planned to answer research questions, but have also been used for teaching; on the contrary, the web site "Teaching Materials for Latin Paleography" has been made up only to support teaching. This site still used in basic and advanced academic courses aims at: a) making available to the students the materials for the understanding of the ancient writing styles, b) letting them better face the final examination in Latin paleography (Cartelli & Palma, 2005).

The site is made of three sections continuously evolving and enriching for the addition of new documents:

- a. plates, reproducing folios of ancient manuscripts (texts written in the different medieval scripts); together with the images, the transcriptions are reported (i.e., digital full texts where symbols, special signs and abbreviations are clearly written). All the documents are organized on a tree structure, based on the writing styles used in the plates,
- b. texts, containing full or partial documents reproducing papers, presentations and articles in conferences, catalogues and books, on different discipline topics like book archaeology, scripts, cataloguing, history of paleography etc.

- c. work in progress, hosting special documents; usually they are simple archives created with office automation programs (like MS Excel or MS Access), which are managed both by professor and students (work in progress to be operated collaboratively, to be downloaded from the site etc.).

The site started the first time in 2001 and helped students develop competences for reading and understanding ancient handwriting styles, learning the history and the evolution of European national languages (especially Italian) and for approaching the processes, the strategies and the policies for the preservation of ancient manuscripts.

A relevant change in the way the students accessed the materials in the site was recently detected and especially from 2007 till now. By observing students' behaviors and collecting information at the end of the courses it clearly emerged that the increase in the quantity of the materials available online did not correspond to the increase in students' performances; it was detected on the contrary, that the more the materials online, the more the difficulties the students had in managing those materials. The following opposite behaviors emerged from the following reports the authors made at different times:

- a) at the beginning when the site was just made (i.e., when only a few documents were available), the students read all the texts and autonomously transcribed almost all the plates (then compared the texts they produced with the professor's solutions),
- b) now, when more than 86 documents and 300 plates (with their transcriptions) are available in the site, the students mostly limit to the texts the professor suggests in his lectures and analyze only the plates they discuss during the lectures.

On the basis of these first results the idea of further instruments and processes to be used to help students develop a better knowledge and skills came out. The online information system *Digistylus*, similar for its features to the systems in the introduction, looked suitable enough to hit the above target (Cartelli et al., 2009).

In the meanwhile, to have a clear panorama of what could be more useful for helping students, a survey was made on the people attending the Latin paleography course in academic year 2008-09.

A questionnaire made by the two questions reported below was submitted to the 12 students attending the course.

**Question 1:** some lines of folios in three manuscripts are reported below. Put them in the right chronological order and explain your choice.

**A** Sed quotiens partes  
singulas ad legendū sumes. sēp reduce  
ad memoriā eā quā proposui. cuius ori  
ginē stude. Quia et p̄batū iob qui do  
lens dicitur. passiones dñi cuiusq̄ corpo  
ris idest scē. ecclē designant. et amicitia  
hereticorū tēnere spectem.

**B** Qui amittit splendore & figura sub  
stantie ei. portansq̄ omnia uerborū  
tuas sue. purgationē peccatorum faci  
ens. sedet ad dexteram maiestatis in  
excelsis. Tanto melior angelis effectus.  
quanto differimus pre illis nomen here  
ditauit.

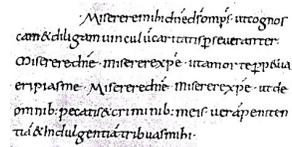
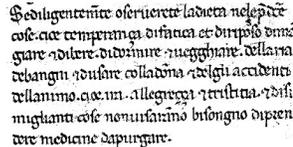
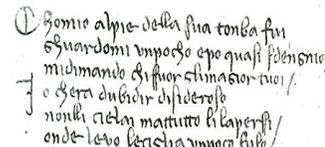
**C** Os quoniam non taceret. doctus confer  
retur. annua beate confessoris. tollem  
nitate locustiar. presta q̄ tunc allidabatur  
Incur non eua. sicutur. tate de uicta. per  
uenire ad gaudia. ipso inter. ecclesie  
mere amur. eterna. p̄clm̄ Sep̄oñl.

Only 8 students answered the question (66,67%).

Their answers were as follows:

- 1 soon selected the right answer and gave a good explanation,
- 3 more students first selected the right answer but no or a partial explanation followed,
- 4 students made first a wrong choice, then selected the right answer (no explanation followed),
- 2 students opened the questionnaire but didn't answer

**Question 2:** Some lines of folios in three manuscripts are reported below. Specify the writing style for each of them and explain your choice.

<p><b>A</b></p> 	<p><b>B</b></p> 	<p><b>C</b></p> 
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Out of 12 students attending the course only 3 answered to the question (25%).

Their answers were as follows:

- 1 soon selected the right answer and gave a good explanation
- 1 selected the right answer but gave only a partial explanation
- 1 made first a wrong choice then selected the right answer, but no explanation followed
- 1 student opened the questionnaire but didn't answer

The most evident result of the survey is that only one student, out of the 12 attending the course (i.e., 8% of the students), succeeded in giving the right answer to the above questions.

Furthermore during last two years there has been no new student who decided to join those already working on the information systems described in the introduction.

The above data suggested the presence of problems deeper and more serious than the access to information or the search for information which originated the planning and carrying out of the *Digistylus* information system.

To specify the features of the problem two surveys were planned: a) the first, on a national basis, and devoted to paleography professors, to see how teaching was organized in the different Faculties and Universities and what situations lecturers had to face, b) the second, on the students attending the paleography course of one of the authors, in academic year 2009-10, to analyze students' basic knowledge and skills. They are described in the following sections.

### ***The Investigation on the Teaching of Paleography***

A well organized questionnaire looked very soon a good idea to get a panorama of the Italian situation on the teaching of paleography and related disciplines.

The questionnaire is made up of three sections and has been prepared just at the beginning of the 2009-2010 academic year.

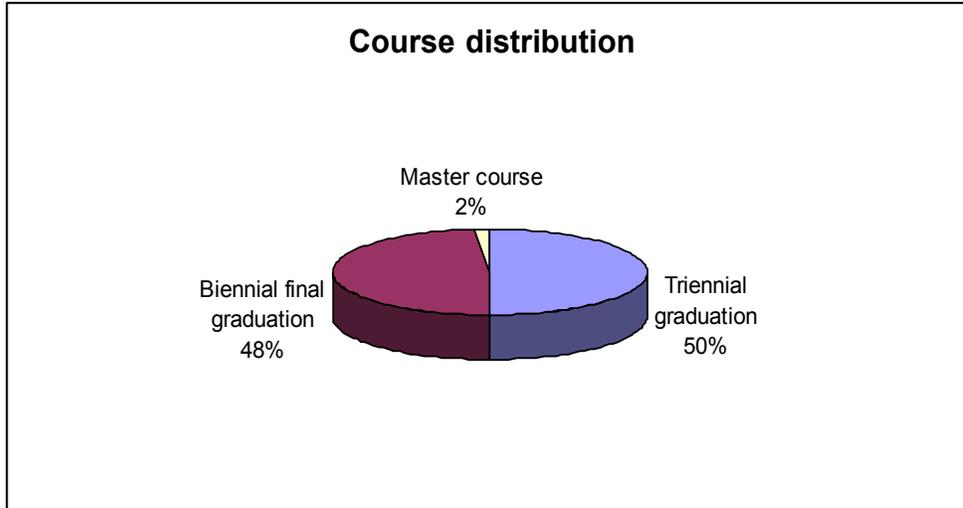
The first section concerns the general data of the interviewed persons and the structure (i.e., Faculty/University) he/she is employed in; it is made of three subsections asking for: a) the name of Faculty and course, b) the segment of Higher Education the course belongs to (i.e., the first three years or the following biennium) and c) the number of the students attending the course.

The second section is more centered on the discipline and is also made of three subsections: a) the pre-requisites students must have and the strategies adopted for their assessment, b) the organization of the lectures with a special attention to the materials and activities underpinning the course and c) the final assessment of the students.

The third section is left to personal considerations by the lecturer.

The questionnaire has been submitted to almost all the 75 members of the scientific sector M-STO/09 (Paleography) in the Italian universities (electronically by e-mail or fax, and on paper, personally during a conference). More than one third of the interviewed (i.e., 27 persons) an-

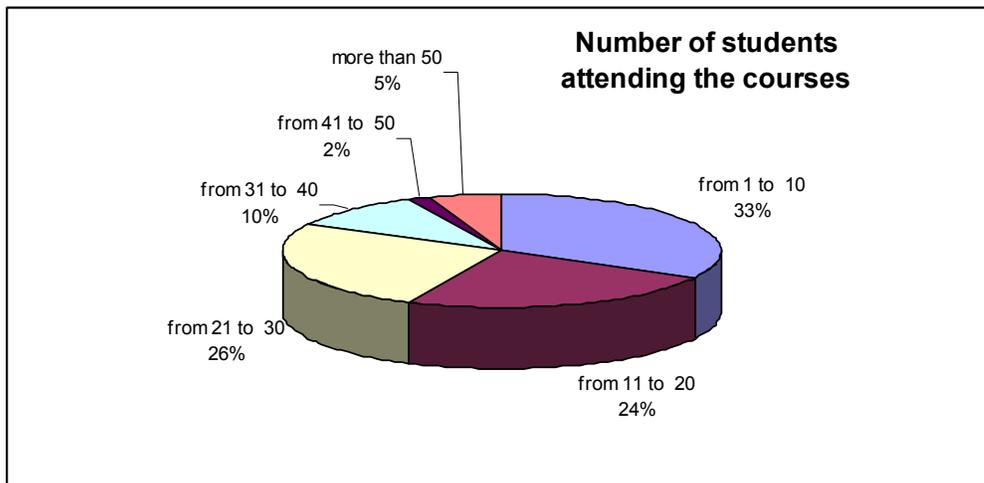
swered one questionnaire for each of the course they gave, some among them compiled more than two forms so that the data from 58 courses were obtained. It can be interesting to note that most part of the professors actively involved in teaching and research in northern Italian universities have answered to the questionnaire and no similar participation was obtained from those who work in southern Italian universities.



**Fig. 1: Course distribution as emerged from the questionnaires**

Almost all professors who answered the questionnaire have a course in each one of the Higher Education segments, as reported in figure 1.

In figure 2 is reported the distribution of the students in the courses and it can be noted that most part of the courses have little numbers of students (82% of the courses have less than 30 students).



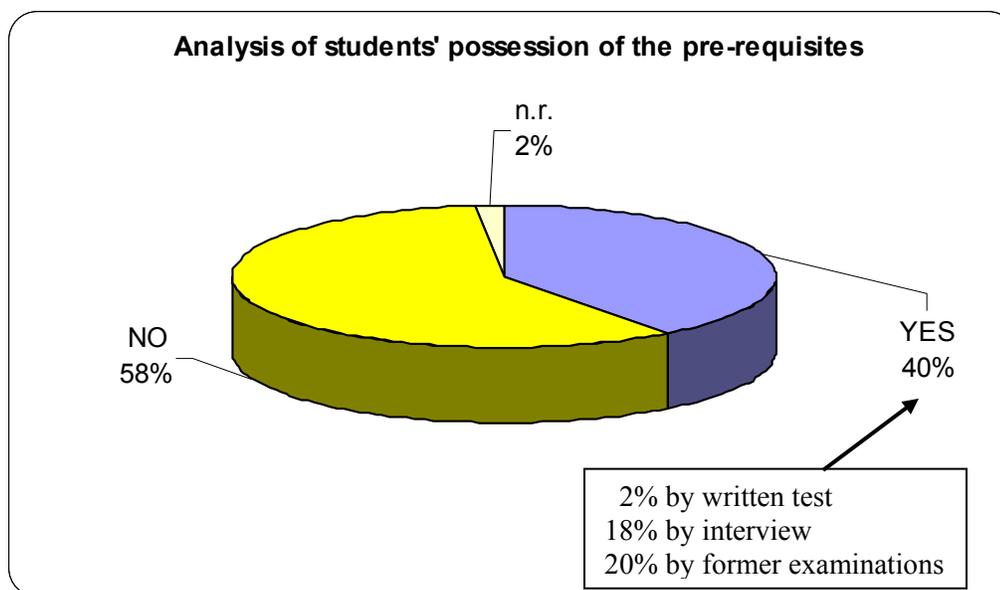
**Fig. 2: Distribution of the students in the courses**

When passing to the second section of the questionnaire, first the pre-requisites of the students have been investigated. The basic elements for a list of disciplines have been proposed and a Likert scale with three values (i.e., not at all, sufficient, very good), accompanied them. Due to

the number of non respondents the table below will report for each discipline the percentage of the answers and of the non respondents.

Table 1: Prerequisites the students must have				
Discipline	Not at all	Sufficient	Very good	Do not answer
Latin	0,00	67,24	24,14	8,62
Greek	29,30	27,59	15,52	27,59
Roman history	3,45	60,34	0,0	36,21
Medieval history	0,00	60,34	25,86	13,79
Medieval history of art	15,52	34,48	0,00	50,00
Romance philology	18,97	29,30	3,45	48,28
Other (Diplomatics ...)	0,00	22,41	3,45	74,14

Table 1 shows that basic elements of Latin, Medieval history and Roman history are considered pre-requisites for most part of the courses. The same does not happen for proving that students possess these requisites; when answering to the corresponding question more than 58% of lecturers state in fact they don't verify it. The distribution of the answers from the respondents is reported in figure 3.



**Fig. 3: Distribution of the lecturers' answers on the analysis of the students' possession of pre-requisites**

Figure 3 also reports that 40% of lecturers who verify the possession of the pre-requisites in the students will adopt different strategies to assess them: 2% use a written test, 18% a questionnaire and 20% the passing of the corresponding examinations.

In the organization of their teaching most part of lecturers is persuaded that the allocation of teaching activities 50% to theory and 50% to practice is the best solution; but there are also professors who think more important theory or practice. In figure 4 is reported the pie chart with the distribution of the answers.

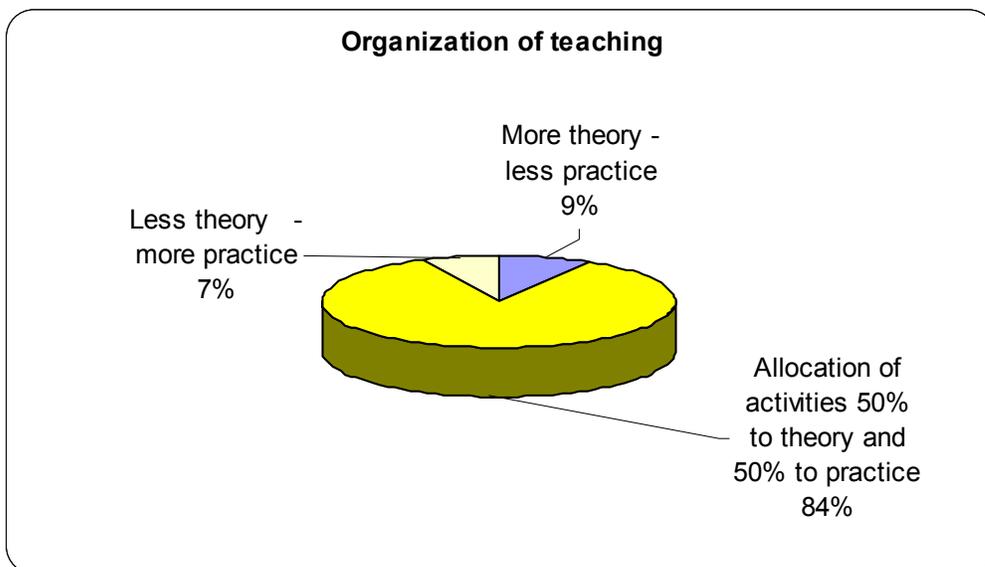


Fig. 4: Organization of teaching activities

Whether the students meet difficulties there is a relevant part of lecturers who plan activities helping students overcome their problems. Figure 5 reports the distribution of the answers:

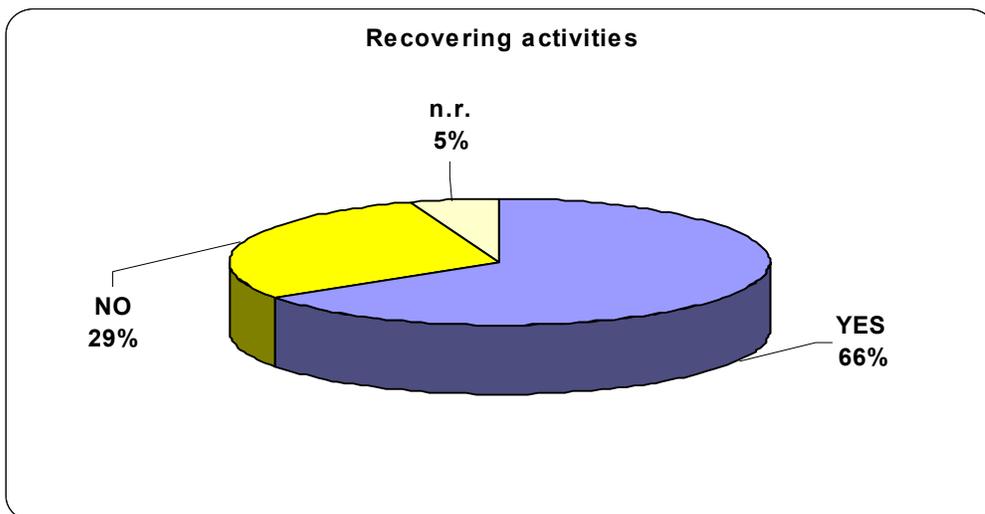


Fig. 5 – Planning of activities helping students overcome their difficulties

At last, to assess students' knowledge and skills at the end of the course the strategies reported in table 2 have been highlighted:

Adopted strategy	Percentage
Analysis of writing examples	24,14
Colloquium	12,07
Analysis of writing examples + colloquium	63,79

When analyzing the remarks in the third section of the questionnaire, the elements reported in table 3 emerged:

<b>Table 3. Remarks and suggestions</b>	
<b>Short description</b>	<b>Percentage</b>
Too little time to analyze all possible aspects in the discipline	3,45
Excessively low level of qualifications	6,90
Both too little time and low level of qualifications	3,45
Do not respond	72,41

As a conclusion two main problems emerge from the lecturers' answers:

- a) students must know at least Latin and Medieval history to access the Latin palaeography course, but today basic knowledge and skills in these disciplines do not let them attend the course satisfactorily,
- b) the structure of today graduation courses and their organization do not let lecturers/professors suitably propose the main topics of the discipline to their students.

### ***The Analysis of Students' Basic Knowledge and Skills***

Parallel to the investigation reported in the former section a questionnaire for the analysis of basic knowledge and skills in Latin and Roman and medieval history was submitted to the 16 students attending the Latin paleography course held by one of the authors in academic year 2009-2010.

It has been implemented as a quiz in the e-learning platform Moodle, which was used to support teaching for many courses in the Faculty.

The following four Latin texts were included in all the questions submitted to the students, in the same order reported below (texts n. 1 and 4 are from classic Latin authors, texts 2 and 3 are from medieval authors):

- 1) Livy, *Ab Urbe condita*, XLV, 1
- 2) Paul the Deacon, *Historia Langobardorum*, VI, 58
- 3) Bede, *Historia ecclesiastica gentis Anglorum*, IV, 1
- 4) Tacitus, *De origine et situ Germanorum*, 19

No information on the authors and the titles of the above texts was included in the questions and the students were asked to answer to the questions below:

Q1 – What elements in the texts let you deduce the historical-cultural references for the periods they belong to? Explain your choice.

Q2 – Group the given texts, when possible, by using the elements outlined in the answer to question 1. Explain your choice.

Q3 – Select the text/s belonging to the classic Latin period whether present, by using the historical elements reported in the texts and explain what are you doing.

Q4 - Select the text/s belonging to the late medieval period whether present, by using the historical elements reported in the texts and explain what are you doing.

Q5 - Select the text/s belonging to the early medieval period whether present, by using the historical elements reported in the text and explain what are you doing.

Q6 - Select the text/s belonging to the classic Latin period whether present, by using the writing style adopted in the text and explain what are you doing.

Q7 - Select the text/s belonging to the late medieval period whether present, by using the writing style adopted in the texts and explain what are you doing.

Q8 - Select the text/s belonging to the early medieval period whether present, by using the writing style adopted in the text and explain what are you doing.

Q9 – Put the texts in the right chronological order and explain your choices.

Q10 – Report the words you think are more relevant to find the right features of the texts and explain your choices.

The students' answers are synthesized in table 4:

<b>Question</b>	<b>N. of correct answers</b>	<b>N. of almost correct explanations</b>
Q1	1	1
Q2	8	4
Q3	5	3
Q4	14	3
Q5	14	8
Q6	11	5
Q7	14	4
Q8	11	2
Q9	6	2
Q10	2	2

Table 4 clearly shows that very often students choose the right answer but do not report the right explanation for their choice. Furthermore, correct explanations never go over 50% of the total amount of answers.

To have a clear panorama of the situation as regards students' performances it has to be noted that the paleography course is situated in the study curriculum after the Classic Latin, Medieval Latin and Roman history courses.

## **Conclusion and Future Studies**

The main results from what has been reported in the above section can be synthesized as follows:

- a) teaching paleography is today a real challenge in the higher education courses due to the course length (hours of teaching) and to the general organization of the faculties (position of the courses in the curricula etc.),

- b) only a few students arrive at the University with the basic knowledge and skills letting them attend the described courses with little or no problem.

When analyzing in a greater detail students' performances by starting from the answers to the survey, it can be deduced that High School studies and former courses in the University curriculum do not help them, or help very little, in the development of suitable meta-cognitive instruments and strategies for:

- the recognition of analogies and differences in the ancient texts written in different periods,
- the construction of a correct and solid timeline for the historical periods like the Roman empire and the Middle Ages.

The above issues are probably the reasons for the loss of students in the activities they usually were involved in, as a part of the communities working around the information systems described in the introduction.

It is probably too early to say if the fall of interest in the participation in learning communities or communities of practice can be explained with the difficulties the students meet, and further studies are needed to analyze the generalization of the phenomenon to other fields and communities. Whether this result is confirmed it can be stated that the inclusion in a community obeys to a sort of law of "all or nothing", where the lack of minimum knowledge-skill requisites prevents the entry in the community due to the difficulty in the development of suitable communication instruments with the other members of the community.

Until now the more urgent problem is to find the instruments and strategies to help students overcome the difficulties they meet when studying paleography.

A project to be still analyzed in all its parts and implications has been drafted, by hypothesizing a feed-back to be started by the proposal of learning objects accompanying the discipline study. In each learning object the selection of topics, the restricted study area, the creation of suitable evaluation and assessment instruments can be used to connect situated and contextualized phenomena with wider perspectives and to recover and reorganize former knowledge and skills.

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## Biographies



**Antonio Cartelli** is a researcher in Didactics and special pedagogy. He manages the Laboratory for Teaching-Learning Technologies and the Centre for ICT and on line teaching in the Faculty of Humanities at the University of Cassino - Italy. Among his interests are: misconceptions, mental schemes, Information Systems for research and teaching, Web Technologies in teaching research and their everyday application for the improvement of teaching and learning. He is also author of many papers and books concerning the themes he is interested in.



**Marco Palma** is professor of Latin paleography in the Faculty of Humanities of the University of Cassino. His main research interests are the morphology and development of different scripts of books and charters in the Western Middle Ages. He is also working on the material aspects of manuscripts, as well as the transmission of classic and medieval texts before the invention of printing. He is particularly interested in the theoretical and practical problems of the description of medieval manuscripts, and the diffusion of scientific information and didactic contents through the Internet. The open catalogue of manuscripts, his recent main project, conceived some years ago along with Antonio Cartelli, was so far realized by three historic libraries in Italy (Laurenziana of Florence, Malatestiana of Cesena and Lancisiana of Rome).