

Education in ancient Egypt to end of Roman Empire: Quality System Management

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Introduction

Education (*paidei*) played a very important role in the social life of the Greeks in Egypt because it was the means for them to keep their Greek personality; Isocrates affirmed that being Greek was no longer dependent on blood, but rather on participation in Greek culture¹. It was a key issue to keep the Greek identity in the Egyptian milieu by mastering the Greek language and perpetuating the Greek life style. Thus, schools and other educational institutions in Hellenistic world, as gymnasium but outside Egypt, played a fundamental role not only for the Greek who want to follow their ancestral system in life, but also for the Egyptians and other communities who seek to adopt the the Greek identity². Through the Papyri, it was noticed that the progress of the children in education and his success were a matter of anxious and great importance in the family during the Graeco-Roman Period: a father sent a letter to his son to tell him “pay attention only to your books, devoting your self to the learning and they will bring you profit”³. Despite the importance of the Education, access to schools wasn't compulsory during that period and only the privilege families had the ability to join their children in different educational phases.

The education during the Graeco-Roman Period in Egypt for the Greek natives and other communities who seek to learn Greek language and culture followed the pattern of Hellenistic education which started at 6 years old till 14-20 years old⁴. The students through these years have to pass three stages of education according to classification of classical and modern historians: primary school, secondary school and higher education⁵. This classification based on different criteria; one of them is the kind of teacher dedicated to every phase: *grammatodidaskaleion* or *grammatistis* for primary school, *grammatikos* in charge of the secondary school and sophists or rhetor for last stage of educations. However, according to this criteria, the border line between these stages is not feasible all the time and the division between the first two first stages is not always so rigid in Egypt and outside⁶. The papyri show that the same teacher might be responsible to give courses for primary and secondary schools; some teachers handbooks include curriculum that run

¹ Isocrates, *Panegyricus* 60.

² It was usual to find Egyptians that attend the Greek school seeking to learn the Greek language because it was the language of administrative bureaucracy, but the papyri reveal but only few example of Greeks that learned the Egyptian languages as for example the case of *P. Lond. I 23*, p. 28: a letter was sent by a mother (?) to felicitate his son that he learned the Egyptian writing (Demotic); (cf. Préaux C., “Lettres privées grecques relatives à l'éducation”, *RBPH*, 8, 1929, p. 207-220).

³ *P. Oxy. III 23*; Crihiore R., *Writing, Teachers, and Students in Graeco-Roman Egypt*, *American Studies in Papyrology*, 3, Atlanta, 1996, p. 10. (= Crihiore 1996)

⁴ Marrou H.-I., *Histoire de l'éducation dans l'antiquité*, Paris, 1960, p. 161; the children could have some lesson before the age 6 under the supervision of the family or a pedagogue but this was restricted to wealthy families.

⁵ *Ibid.*, p. 161.

⁶ Cf. Kaster R.A., “Notes on the primary and secondary schools in Late Antiquity”, *TAPA* 113, 1983, p. 222-236; Booth A.D., “The schooling slaves in the first century Rome”, *TAPA* 109, 1979, p. 11-19.

from the letter of Greek alphabet till studying parts from Homer and other classical writers. For that, the levels of education hierarchy could be indicating in fig. 1.

The focus of this research is the first two education levels which ended in Egypt before the 12 years old, the age of admission to *ephebeia*^Y. This period of time was to provide students with some knowledge and skills concerning reading and writing and to prepare them for their future whatever its direction. It is necessary to emphasize that some terms describing modern forms of education and schools are not evidently synonym to the characteristics of ancient schooling. For example, private and public education refer to concepts that might be approached to modern private and collective lessons that take place outside the school and the family are responsible to pay the fees for the teachers.

Quality of education

The word quality backs to 40 B.C., when the Roman statesman and philosopher Cicero used the Latin term *qualitas* in his introduction to Greek philosophy; this word seems to be derived from the Greek word *poiotes* from *poios* (of a certain kind, nature)[^] and which has many categories according to the Greek philosophers as Plato and Aristotle[^]. The modern definition of quality, according to Oxford dictionary, is the level of excellency; this definition is more related to the Greek word *Areté* that has many meanings as virtue and excellence. For the Greeks, it pertains all sorts of quality such as beauty, wisdom but also the capabilities to do something well. The alternative translation excellence or a desirable quality might include all the aspects of the meaning of this term. Another word that is used for designating quality is the word *azia* which appeared in some Egyptian papyri to refer to the quality of some teachers[^].

Education quality in modern times based on some standards which included specifications and elements to be measured. These standards cover all the activities in education institutions as: rules and regulations, students and member staff qualifications, teaching facilities and methods, graduates' capabilities. These standards were formulated to follow up every step in educational activities and concern with both processes and outputs. In evaluating the education quality Egyptian education till the end of 3rd century AD., we have to bear in mind that these standards are modern development and education in antiquity pay all attentions to the graduate competencies and its capabilities and neglected some elements, but not all, of education process. The environment and contexts. In next paragraphs, the first two stages of Greek education, primary and secondary, will be the core point to investigate its dimensions according to modern quality's standards as: the regulations, teaching facilities, student support, and assessment. Some other standards as the organisational hierarchy, code of ethics, and mission are totally absent in the Antiquity.

Education Regulations

^Y For the *ephebeia* institution in Egypt cf. Legras B., *Néotês, recherches sur les jeunes grecs dans l'Égypte ptolémaïque et romaine*, Genève, 1999 (later mentioned as Legras 1999); in the Hellenistic world, cf. Chankowski A.S., *L'éphébie hellénistique: étude d'une institution civique dans les cités grecques des îles de la Mer Égée et de l'Asie mineure*, Paris, 2010.

[^] Cf. Lévy C., "Cicéron, le moyen platonisme et la philosophie romaine: à propos de la naissance du concept latin de *qualitas*", *Revue de métaphysique et de morale* 2008/1 (n° 107), p. 10-20.

[^] Cf. Anton J.P. and Kustou G.L. (ed.), *Essays in ancient Greek philosophy I*, vol. 2, New York, 1971, p. 149-161.

[^] P. Oxy. XVIII 2190.

The political division of Egypt starting from Ptolemy I was firmly determine who the Greek is and who the Egyptian is. Despite that all the Egyptian territory was inhabited by the Greeks, there were a division in their categories: the three Greek cities have an outstanding position in Egypt especially Alexandria, the residence of the royal courts and majority of nobles. The Greeks in *Chora* of Egypt had also a privilege situation than the others communities in Egypt including the Egyptian natives. This division has its impact on the governance of education during the Ptolemaic Period and by consequence lasted in the Roman Period with insignificant changes. The Ptolemaic government didn't practice any authority to uniform a system for the education in the country and thus every class of residents had their own system: polis, metropolitan, villages. For the Geek cities in Egypt, the documentary or literature sources did not indicate whether there was a legislation to control the educational process especially in the first two stages of education as it was found in some Hellenistic cities. In Miletus, the educational process was administrated by the magistrate of childhood which oversees the annual election of the new teachers and trainers¹¹ by the citizen assembly. The inscription indicates the steps that the town take for this election: the inscription of nominated person, the election committee, the oath of elected trainer and teachers, the salary of them, the financial responsible and the way to pay the salary of trainers and teachers. The second inscription of Teos represent the same features of that of Miletus but it adds some interesting features about the educational quality controlled by the paidonomos, the magistrate of education: the salary of different kinds of teachers (music, sport, and language) paid according to their performance, the intended learning outcomes, and the criteria of accountability¹².

However, the lack of the documentary evidences for such educational lows in the Greek cities in Egypt, it doesn't mean that it wasn't exist. Alexandria and other polis in Egypt should have such low that organise the education process from the primary school as a means to keep the Greek culture. Analysing some documentary sources related indirectly to the education enable us to suggest the existence of the educational legislation in Greco-Roman Egypt. The first is the *P. Flor.* III 328 found in Hermopolis, and belong to Theon, the Alexandrian who asked to be exempted from liturgies because of his age and he prove his legal situation by an extract from his exam of *ephapheia*. This extract indicate that he had studied *ta grammata*. The second is the *P. Gen* II 111 which is an examination of a young Alexandrian who declared that he studies *ta grammata*¹³. These two papyri indicate clearly the importance of passing, at least, the secondary education, as it was one the requirements to the access of ephebeia in Alexandria, the educational institution that prepared the Greek children to be Greek citizens. The third evidence is the *P. Hal.* 114, which represent one of the *prostagama* of Ptolemy II. In his attempt to diffuse the the Greek education and to establish Greek administrative class, he exempted the school teachers (*grammatadidaskaloi*) and the teachers of the physical education (*paidotribai*)

¹¹ Syll³ 577 (Bertrand J.-M., L'hellénisme 323-31 av. J.-C., rois, cités et peuples, Paris, 1992, p. 210). This inscription was dedicated to commemorate the gift of Eudemos for educational purposes.

¹² Syll³ 578, Bagnall R.S. and Derow P., The Hellenistic Period, historical source in translation, Blackwell publishing, 1981, p. 131-133.

¹³ Legras 1999, p. 106-107; *P. Flor.* III 328 which dates back to the 3rd century AD.; *P. Gen.* II 111 dated to the 2nd century AD.

¹⁴ *P. Hal* I. 260-26; Maehler H., "Die Griechische Schule im Ptolemäischen Ägypten", in Dack E.V. and Dessel P.V., (ed.) Egypt and the Hellenistic world, proceedings of the International colloquium, leuven- 24-26 May 1982, Lovanii 1983, p. 191-203.

from the salt-tax beside the Dionysus priests and the victors of the Alexandrian games. This means the teaching job was well organised and there were a census lists for those who practise this job to enable the tax's officers to put on effect the royal orders. Thus, the anxious to keep the Hellen culture, the importance to accomplish the *ephebeia*, the royal willing to established a new administrative class of Hellenes, and the exemption the teachers from paying tax-salt are factors that recall the importance to legislate the education in Egypt especially during the Ptolemaic Period and the importance of existing an administrative entity that organised the education for the Greek citizen in four Greek cities.

For the Greek outside the circle of citizenship or other ethnicities, the archaeological evidences are merely silent about any central or administrative entity that manage the education outside the polis. The Egyptian schools for teaching writing the Hieroglyphics and Demotic were generally attached to the Egyptian temples and directed by certain priests as noticed in Tebtynis, Narmouthis temples¹⁰. For the Greek education, before the access to the *ephebeia* and the gymnasium¹¹, the education in the metropolitan and villages of the *Chora* are characterized by the heterogeneity; the papyri contain many references to many types of educations: privileged students and also slaves probably take their first lessons in their house under the tutelage of private teacher or sometime the parents¹²; the other student learned in the school. School in antiquity didn't refers to many classes and many teachers under the supervision of a director as in modern time but the basic requirements for establishing a school were only a space for teaching and a teaching material. Every school was directed by the teacher, which looks like *kottab* in modern time or one class school that found in some small villages in Upper Egypt nowadays. The little evidences that could be traced in some documentary sources about the existence of central authority of the city of Oxyrhynchos couldn't be generalised in other metropolitans of the *Chora*. In this city, the town council was in charge of appointing some public grammarians in proportion to the number of the residents¹³. It is probably that this council city (*boula*) concerned only with the public grammarian, the teachers of the secondary school, and its clearly that was a kind of Imperial legislations concerning that the stage of educations. There is no reference concerning the primary education found in this city or other cities and this due to the caring that the Roman government paid to the two last stages than the first stage of education.

Teaching facilities

¹⁰ Some ostraca that found in Tebtynis show some exercises in Demotic and Greeks cf. van Minnen P, "Boorish or Bookish? Literature in Egyptian villages in the Fayoum in the Graeco-Roman Period", *JJP* 28, 1998, p. 99-108; for Thermoutis cf. Bresciani E and al., *Ostraca demotici da Narmuti*, Pisa, 1983.

¹¹ Some scholars thought that the gymnasium was an education institution but there no evidence support this hypothesis and it is clear that it was many as athletic centre or social place for the Greek communities in Egypt, cf. Gauthier P., "Notes sur le rôle du gymnase dans les cités hellénistiques", in: Wörle M. and Zanker P., *Stadt und Bürgerbild im Hellenismus*, Munich, 1990, p. 1-10.

¹² Literature in 1st and 2nd century AD., represent Roman parents in elite classes as the responsible to learn their children the of writing and reading cf. Hoster M., "Primary education", in: Peachen M., *The Oxford handbook of social relations in the Roman world*, Oxford, 2011, p. 88-100.

¹³ P.Oxy. XLVII 3366. For the publication of this papyrus cf. Parsons P.J. "Petitions and a letter: the grammarian's compliant", in Hanson A.E. (ed.), *Collectanea Papyrologica, texts published in honor of H.C. Youtie*, Bonn, 1976, p. 89-88.

The teaching facilities in Antiquity are resumed in school and its simple equipment. The term school, *didaskaleia*, or ‘the teaching place’ was identified by the name of the teachers who was responsible to provide student with knowledge as proved by many references in papyri as¹⁹: schools in of Thotes in Memphis, school of Melankomas in Fayoum, and the school of Dionysus²⁰. The term school refers only to a space dedicated to the education and there weren’t criteria for choosing the space but the availability as indicated by some Papyri and recent archaeological discoveries. According to space, the schools in the Graeco-Roman Period could be divided in two kinds: school in buildings and school in open-air.

References for school established in were very numerous but not for the purpose to describe the school or for the pursuit to its functions but mainly in other contexts as private letters, or taxes...etc. School could be found in a private or a public building, temples, tombs, and houses. P.Lond. I, 4321 refers to a school that found in a house of Egyptian medicine and dedicated probably to learning some Greek slaves the Egyptian language. Some teacher rent a part from a public building as the case of Dinoysios who rent the western stoa of a building in Oxyrhynchos to be his school²¹. This school lies in the enceinte which included many buildings as the temple of Fortune, the temple of Achilles and other buildings. Establishing school in some public building was commonly practice in Hellenistic and Roman Period as proved by some building in Pompeii where two elementary schools are constructed under the arcade of the Forum and that of Campus²². The form and the arrangement of the school could be observed through some recent archaeological discoveries in the oasis of Egypt²³ and some terracotta. So far, was discovered he only school in Amhedia, ancient Trimithis, in Dkhala; it consists of, at least, three rooms and, later on, one of its room was incorporating in a house of the city councillor. Some walls of the three rooms were covered by white gypsum plaster²⁴ which contain some dipinto²⁵. All the three rooms are occupied by a series of benches with two steps along one wall or two, served as a setting place for the students. The student could stand on it to write on the white whitewashed wall behind them²⁶. The terracotta figured the student represented them sitting on a chair or bench holding their tablets or papyrus,

¹⁹ Criboire R, *Gymnastic of the mind: Greek education in the Hellenistic and Roman Egypt*, Princeton 2001, p. 18. (= Criboire 2001)

²⁰ UPZ I. 178; SB III. 1278 and P.Oxy.LXIV 4441.

²¹ UPZ I. 148, the private letter in note 2. This papyrus reflects a case that is unusual in Graeco-Roman Egypt: hiring a teacher in a school. The school belongs to an Egyptian medicine who call ‘Philo..eti’ hired a Greek who learned the Demotic to teach this language to some slaves who learned the medicine.

²² P.Oxy LXIV. 4441; This papyrus dates back to the year 310-316.

²³ Cf. Della Corte M., “Scuola e maestri in Pompeiantica”, *Studi Romani* 6, 1900, p. 621-634.

²⁴ The discovery of schools in Kom el-Dikka in Alexandria aren’t be considered in this work because it was considered as an institution dedicated to the higher education. For the functions of the construction cf. Haggag M., “Some remarks on the functions of the auditoria of Kom el-Dikka, in: Derda and al., *Alexandria auditoria of Kom el-Dikka and late antique education*, Warsaw, 2007, p. 130-139.

²⁵ Criboire R. and Davoli P., “New literary texts from Amheida, ancient Trimithis (Dakla, Oasis, Egypt), *ZPE* 187, 2013, p. 1-14.

²⁶ Based on the inscriptions, the school could be served for two levels of educations: higher education and secondary school. But as this school is the only example so far discovered, it is not possible to judge if this was the characteristic of antiquity schools especially that the documentary sources stand against this hypothesis.

²⁷ *Ibid.*, p. 7.

while the school scenes of the Classical Athens figured the teacher sitting on the chair while the students stand before him^{٢٨}. Another space that was used for education purpose were the ancient tombs, which completely deserted the Graeco-Roman Period as the tombs of Beni Hassan. In one of the tombs that are explored by Champollion, a seven rows of Greek syllabary including consonants and vowels^{٢٩}. This practice was noticed in some tombs of Thebes that were inhabited by some anchorite in the Byzantine Period.

The school could be established in open-air either in the street, or before a house or under a tree; this school type is similar to what know in Egypt as *kottab*, a teaching place served for teaching reading and reciting Koran. This kind of school observed only for the first level of education; the term *chamaididaskalos*, which appeared in papyri from the third century and means ‘a teacher sitting on the ground’ refer probably to elementary teachers that gave his lessons in open-air the^{٣٠} and lack to a building. The teacher could sit on a block or a chair and the student sit on the ground with their teaching material: papyrus, wooden tablets and ostraca. J.G. Milne comment on the discovery of many ostraca with Greek bbexercise that the “*a schoolmaster of Thebes had taught his classes in the open air near a rubbish heap, on which material for writing exercises might be obtained in plenty, to be thrown away again as soon as used*”^{٣١}.

Despite the simplicity of the school accommodation during that period, but it met the basic needs for the education processes, and these facilities are similar to that exist today in the Egyptian primary schools: the archaeological finds indicate that the schools of Antiquity were occupied only by benches as setting place for the students and certainly a chair for teachers and white or coloured board. The rooms of Amhedeiaschool were equipped for windows for ventilation and lighting purpose. Evidently it is difficult to determine the space for every student because there is no indication about the number of the students in school nor the space of school. But, the school day of a student which was mentioned in *Hermeneumata* show clearly that every student has its chair or setting place^{٣٢} “Then I set in my place on a bench or chair or steps or stool or large chair”. The two steps of the setting benches in the Roman school of Amhedeia occupies, albeit its inaccurate determinations, didn’t exceed the ١٠% of the who space of the school, which means that the number of admitted students wasn’t massive and the available space for every student meet the modern requirements of the of quality standards^{٣٣}.

The education process

Albeit, the lack of central education authority in Graeco-Roman Egypt, the scholar documents from different sites show a homogeneity of intended outcomes learning which affirm that the schooling was proceeded in a systematic manner. These scholar documents

^{٢٨}Cf. Boot A.D., “Douris’ cup and the stages of schooling in the Clanssical Athens”, EMC ٢٩, n° ٤, ١٩٨٥, p. ٢٧٤-٢٨٠.

^{٢٩} Cf. Maspero J., *Monuments de l’Egypte et de la Nubie, notice descriptive conformes aux autographes rédigés sue les lieux*, vol. ٢, Maspero J. (ed.), Paris, ١٨٨٩, p. ٤٥٩-٤٦٠, n° ١٠.

^{٣٠} P. *Sorb.* II. ٦٩.

^{٣١} Milne J.G., “Relics of Graeco-Egyptian schools”, *JHS* ٢٨, ١٩٠٨, p. ١٢١-١٣٢ (p. ١٢١).

^{٣٢} Dionisotti A.C., “From Ausonius’ schooldays?A school book and its relatives”, *JRS* ٧٢, ١٩٨٢, p. ٨٣-١٢٥ (for the school day cf. ٨٩-١٠١).

^{٣٣} We have to take in account that our judgement about the available space for every students depends only few archaeological and documentary resources and the diversity of school kinds as private homes or temples hinder an accurate determination for this space.

run around the general aim that controls every level of education not only in Egypt but also in Hellenistic and Roman world was uniform: providing the students with knowledge and skills of being a Greek and positives attitudes towards the heritage of his ancestors, customs, habits, and his roles of society. According to the Greek concepts, the children have to learn different kind of science to be well educated and ready to perform his role in the society. The children should learn reading and writing Greek language, the basic of music, history, geography, arithmetic. To be graduated, the student had to pass through different educational levels, and prove the he attained a specific level of knowledge and abilities.

The education environment and context in Egypt was influenced by many elements which are indicated in fig. ٧. The education external environment was dominated by family social class of the family and the planned future for the student, ephebia, Gymnasium and some jobs in the society. The educational input is mainly similar to recent educational input because it includes the teachers, students, and books. But, the family and its financial abilities were included in educational input because of its effect on the education type dedicated to the student and the ability to continue in different education levels. Many different sources, either for education or for other purposes, indicate that learning and teaching subjected to a strict system and every part of educational inputs should be well prepared: the teachers should be equipped with his manual and prepared the contents; student should have their materials as papyrus, wooden tablets or ostraca; parents should pay the tuition fees for the teacher and follow up the student level.

The main elements for the education process which concern her with the classroom activities, are the teaching methods, curricula and assessment methods. The next table was designed to relate between education process elements. It was based on an immense collection of scholar documents but the main collection was that published by RafaelleaCriore, *Writing, teachers, and Students*, and dates back to different centuries from IIIrd century B.C. to IIIrd century AD. This table indicates clearly that literal education in Egypt Graeco-Roman followed a systematic pattern and proceeded according to an organised manner. The education process kept its manner without fundamental changes and only merely modification occurred in teaching and assessment methods during the Roman Period. The so-called “un livre d’écologiste” was a teacher manual that include curricula content distributing according to the sequences indicating in the table: from letters to some parts^{٢٤}. From Greek literature and poems. However, it doesn’t make any references to how the education proceed or assessed. But, certainly the teachers were influenced by inherited knowledge of the ancient philosophers as Plato and some rhetoricians as Quintilian. The motivation to the teacher to used adequate means to enable the student to acquire the required knowledge and skills were mainly inspired by the competition environment as a result of the domination of private education during the Graeco-Roman Period. The good reputation made the demand for him increase and the inverse is right: a mother was sorry for the departure of her son’s teacher because she had ‘no anxiety about him, knowing that he was going to take care of you to the best of his ability’^{٢٥}, while there is a student called Neilos reclaiming to his father because he couldn’t

^{٢٤}Cf. Guéraud O. and Jouguet P., *Unlivred’écologiste du III^e siècle av. J.-C.*, Publications de la Société royale égyptienne de Papyrologie, Textes et Documents II, Le Caire, ١٩٣٨.

^{٢٥}Criore ٢٠٠١, p. ٤٨; P.Oxy.VI٩٣٠.

find a qualified teacher and informed him that he quitted the lesson of his teacher and is looking for another teacher^{rv}.

Certainly, the teachers were led by the two main academic objectives: mastering writing and reading Greek language. The first step was writing letters and then he worked to enable the student to write and read in parallel. For mastering reading, the student starts with Alphabet letters then moved to syllables, words and then simple sentences. For closing the educational cycle of secondary school the student read and know by heart parts or chapters from Greek literature^{rv}. In every stage, the education proceeded according to the teacher-centered approached

Table 1. The education level and its objectives and teaching and assessment methods

Level	Education objectives	Intended learning outcomes	curricula	Teaching methods	Assessment methods
Primary	Acquire the principals basic of writing	Describe the right directions of writing Alphabet letters (K)	Greek Alphabet	Learning by doing	<u>Practical exam</u> : Writing a single letter without following the alphabet sequences
		Draw the Greek alphabet (P)	Greek Alphabet	Learning by doing	
	Reading correctly Alphabet letter	Explain the right sequence of Alphabets (K)	Greek Alphabet	Lecture- learning through playing	<u>Written exam</u> : write letters in horizontal roles in right order, reversed order, and in pair
		Define the name every letter (K)	Greek Alphabet	Lecture-singing	<u>Oral exam</u> : read Alphabet letter in its sequences and chalinoi
		Pronounce the sound of every letter (P)	Greek Alphabet	Singing-reading	
	Pronounce the different syllables	Define the meaning of syllabary (K)	Greek Alphabet	Reading	<u>Written exam</u> : write different syllables started with consonant and the vowels <u>Oral exam</u> : pronounce different syllables from monosyllables to most difficult combinations.
		Distinguish between the different types of syllabary (U)	Greek Alphabet	Reading	
		Pronounce the different syllables (P)	Greek Alphabet	Singing-Reading-Learning through playing	
	Know by heart list of words	Outline list of words according to their syllables (K and U)	Greek Alphabet	Lecture- Reading	<u>Written exam</u> : write name of gods, hero, rivers...etc. <u>Oral exams</u> : pronounce a list of words
Explain list of words according to themes.		Greek Alphabet			

Teaching Methods

The choice of teaching methods was mainly related to the content and the objective of each stages of education. Teachers in Antiquity used different teaching ways to enable the student to master writing and reading. Classical writers, and philosophers gives some indications about some teaching methods which was supported by some documentary resources and archaeological finds.

^{rv}P.Oxy. XVIII 2190.

^{rv}Marrou H.-I, op.cit., p. 232-233.

Learning by doing might be the first teaching methods applied by the teachers to enable the student to learn the principals of writing. The teacher prepared wooden tablets incised with letters of Alphabet and the student try to follow the outlines of every letters. The teachers indicated practically how to follow the outlines of each letter and the right direction to write correctly every letters. In some wealthy family, the we could use some alphabet letters' puzzle^{7^}, and in Roman world some wealthy persons prepared cakes in the shape of letters^{8^}. Learning by doing was also used as teaching methods in learning arithmetic: students used their fingers to know number and how to calculate^{9^}.

Singing was highly applied as teaching methods in ancient World. It started with learning Alphabet letters. Students, together, started to pronounce the letters according to a rhythm to stimulate the faculties of memory^{10^}. This method used to enable the children to master the pronunciation of monosyllables, disyllables, trisyllables, quadrisyllables and pentasyllables. The exercise of syllabaries shows that that "a scheme of the letters of the alphabet each in turn combined with the different vowels"^{11^}. In the tomb of Beni Hassan such syllables were inscribed on the wall in way to facilitate signing them.

Lecture is the main teaching methods that predominate the education in the Antiquities; the teacher was the only source of authority in the class and

Assessment Methods

The scholar exercises indicate clearly that students' assessment was a key issue in the educational process. It is so difficult to predicate the time table of assessment in Antiquity. But the immense collections of students' exercises show obviously that teachers used widely formative and summative assessment. Formative assessment was one of the component of educational processes that occur daily either in a form of school day activities or a home work. The formative assessment was not only a means to evaluate the student attainment of knowledge and skills but also an indicator for the teacher to advanced in his curriculum or to revise some points with the students. On the other hand, summative assessment wasn't nationally or regionally organised as modern institutional educations and it id difficult to precise the assessment type through the scholar exercise.

Scholar exercise show varieties of assessment methods to evaluate knowledge and skilled of the students. They are strongly prepared according to the academic adjectives and the content of the courses. According to table 1 practical exams run from primary school to the end of the secondary schools. In primary school, the teacher used this method to ensure that students write correctly the alphabet letters. The student copied some letter from a model prepared by the teacher and the wooden tablets was used as exam materials.

^{7^}Cribiore 1996, p. 37.

^{8^}*Ibid.*, p. 38 and 123-24.

^{9^}Hoster M., "Primary Education", in Peachin M. (ed.), *The Oxford handbook of social relation in the Roman World*, Oxford, 2011, p. 84-100 (p. 96).

^{10^}According to Plato (*Republic III*, 427 a-b) and Quintilian (*Institutes of Oratory*, I, 1, 50), teaching process had to start by stimulate the faculties of memory for the children. Quintilian affirmed that "*It will be best for children therefore, to be taught the appearances and names of the letters at once, as they are taught those of men*".

^{11^}Milne J.G.,op.cit., p. 123; for a clear examples of this exercise cf. P. Rain. *Unterricht V* (MPER NS xv) and T. Mich.inv. 763; for the last example cf. Cribiore 1996, no. 83 and photo VII.

This exam might also take place in the school by writing on the board and evaluating the way of the writing individual letter without following the alphabet sequences. Practical exam was the main method to assess the student attainment in music. The student should play music on a specific instrument. The shortage of documents concerning this type of education hinder giving complete picture about it. Fortunately, a contract concerning slave teaching to play music indicate many points that fulfil some gaps in private education.

Written exercises were wildly used to assess the capabilities of the students of writing and reading as well. Through this method the teacher evaluated different levels of thinking and recall all the cognitive domains of what we call today Bloom's Taxonomy⁴³. In primary level, to assess the student knowledge of alphabet letter, the student was required to write alphabet letters following the sequence of letters to assess his remembering ability. The student could ask to write alphabet letters in reversed order⁴⁴ or to write the letters in pair: the first letter with the last one and the second letter with the one before the last and so on. These types of exercises activate the remembering and the understanding altogether. Written exercise for syllabaries recall the remembering and the understanding ability of the students. This exercise was in some how very boring: they asked to write the syllables many time and sometimes he start with careful handwriting and then lose his concertation and melange the letters and commit mistakes.

Oral exams were an assessment method to evaluate the ability of the student to pronounce correctly the letters, syllabary, words and parts of Greek literature. These exams were progressively developed and get more difficult according the the education levels and the content. The first oral exams may might start when the children arrived to the reading level and the teacher asked him to pronounce the names and the sound of every Alphabet letter. Then the student exposed to a difficult level of pronunciation when the children challenged to read the so-called *chalinoi*: a sequence of letter that are difficult to be pronounce to improve the elocution abilities of the students⁴⁵. These *chalinoi* were used also in written exam for the students in primary level.

⁴³Bloom Taxonomy was created by a team under the leadership of psychologist Dr Benjamin Bloom in 1956. They identified three domains of educational activities and every domain has its pyramidal hierarchy from the simplicity level of thinking to progressively advanced level as followed: knowledge, comprehension, application, analysis, and evaluation. These levels were revised by the Bloom's students and became: remembering, understanding, applying, analysing, evaluating, and creating; cf. Krathwohl D.R., "A revision of Bloom's taxonomy: An overview", *Theory into practice* 41 (4), 2002, p. 212-218.

⁴⁴Cribiore 1977, p. 39; she gave some example of ostraca that contain such exercise.

⁴⁵Cf. Guéraud O. and Jouguet P., *op.cit.*