Education in Ancient Egypt till the End of the Graeco-Roman Period: Some Evidences for Quality

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Abstract

The article highlights how the ancient Egyptian and then the Greeks of Egypt operated basic education from quality prospective to achieve its fundamental goal: providing the society with competent graduates who meet the intended requirements of labour market. The education will be examined through two of modern quality models: goal and specification model and resources-input model. The research investigates the educational inputs, processes and some aspects of educational outcomes, depending on analysing texts and inscriptions. The paper concluded that the Egyptians developed a flexible successful system, and operated according to limited sources but finally achieved its goals. It produced a successful system that held features of modern quality practices.

Key Words: Education, Quality, Ancient Egypt, Graeco-Roman Period, Teaching Methods.

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Introduction

Education was essential in ancient Egypt till the end of the Graeco-Roman Period. The main purpose behind education in ancient Egyptian society is building a well-educated character that could set up a civilized society which preserves the identity and legacy of individuals.[1] The ancient Egyptians believed in education and its important role in life and afterlife[2] so that, they considered their duty toward the society is to build an educated society.[3] The Instructions of *Khety* to his son *Pepi* motivate the students and sons to acquire certain knowledge, to gain positive attitude towards teaching, and to respect sources and teaching materials: *'love the books like your mother, there isn't anything expensive in entire life more than books'*[4]. This notion continued during the Graeco-Roman Period as proved by many documented sources: a letter dating back to IInd century B.C. was sent from a father to his son who enrolled in rhetoric school in Alexandria asking him to '*pay attention only to your books, devote yourself to learning and they will bring you profit*'.[5] This papyrus and others indicated how education (*paidei*) was so crucial for the Greeks of Egypt. It wasn't only a means to be remarkable in the community, but also a key issue to keep their Greek identity in Egyptian milieu by mastering the Greek language and perpetuating the Greek life style. Isocrates affirmed that being Greek was no longer depending on blood, but rather on involvement in the Greek culture[6]. Thus, schools and other educational institutions in the Hellenistic world played a fundamental role not only for the Greeks who wanted to follow their ancestral life system, but also for the Egyptians and other ethnicities who seek adopting the Greek identity.[7]

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[1] Fischer, E. and Hans, W., 'Education' in Donald Redford (ed.), The Oxford Encyclopedia of ancient Egypt, vol. I, oxford, 2001, p. 438- 442 ; Guéraud, O., and Pierre J., Un livre d'écolier du IIIe siècle avant J.-C., Cairo, 1938, p. 1-15 ; Kaplony-Heckel, U., 'Schüler und Schulwesen in der ägyptischen Spätzeit', SAK 1, 1974, p. 227-246 ; Baines, J., 'Literacy and ancient Egyptian society', MNS 18, 1983, p. 572-599.

[2] Amenta, A., 'The Egyptian Tomb as a House of Life for the Afterlife?' in Rosanna Pirelli(ed.), *Egyptological Essays on state and society, Serie Egittologica 2*, Naples, 2002, p. 13- 26.

[3] The resources which provide us information about education and teaching in ancient Egypt are either archaeological resources, as ostraca, stones, papyri, or the literature resources which are represented in maxims and teachings, for more information cf. Posener, G., *Catalogue des ostraca hiératiques littéraires de Deir el Médineh. Nos 1001 à 1108*, vol. I, Cairo, 1938, p. IV; Van de Walle, B., *La transmission des textes littéraires Egyptiens*, Brussels, 1948, p. 15-17.

[4] Urk., I, 204, 8, 199, 6; Erman, A., *The Literature of the ancient Egyptians: poems, narratives, and Manual of instructions from the third and second millennia B.C.,* translated by Blackman, A. M., London, 1927, p. 299; Zinn, K., 'Libraries and archives: the organization of collective wisdom in Ancient Egypt'. In Cannata, M., (ed.), *Current Research in Egyptology* 2006: *Proceedings of the seventh Annual Symposium, University of Oxford 2006*, Oxford, 2007, p. 169-176.

[5] P.Oxy. III 53; Cribiore, R., Writing, teachers, and students in Graeco-Roman Egypt, American Studies in Papyrology 3, Atlanta, 1996, p. 15.

[6] Isocrates, *Panegyricus* 50.

[7] It was usual to find Egyptians who attended the Greek school seeking to learn the Greek language because it was the language of administrative bureaucracy, but the papyri reveal only few example of Greeks who learned the Egyptian

The ancient Egyptian education system was carried out according to a context that required competent employments in different sectors as indicated in figure (1). The education context in ancient Egypt is extremely related to the political policies and religious thoughts, and in a narrow range, to daily life activities. Scribes, architects, craftsmen, priests, artists, soldiers, and physicians were professions highly needed in the Egyptian society. During the Graeco-Roman Period, two education systems, Egyptian and Hellenistic, run in parallel but have some meeting-points. For that, the environmental context of education was partially changed because of Greek communities. The polis and the citizenship requirements made the education compulsory for some Greek classes; it was a perquisite of polis citizenship. The development of bureaucracy and the political situation of Egypt increased the demand for certain professions as bilingual scribes and soldiers.[1] The cultural policy of Ptolemaic kings and the remarkable position of Alexandria played an important role in increasing the importance of education and in creating a new education paths and new educational institutions in Egypt.

Fig. 1 the context of education in Ancient Egypt and Graeco-Roman Period (Zoair and Fahim cliché)
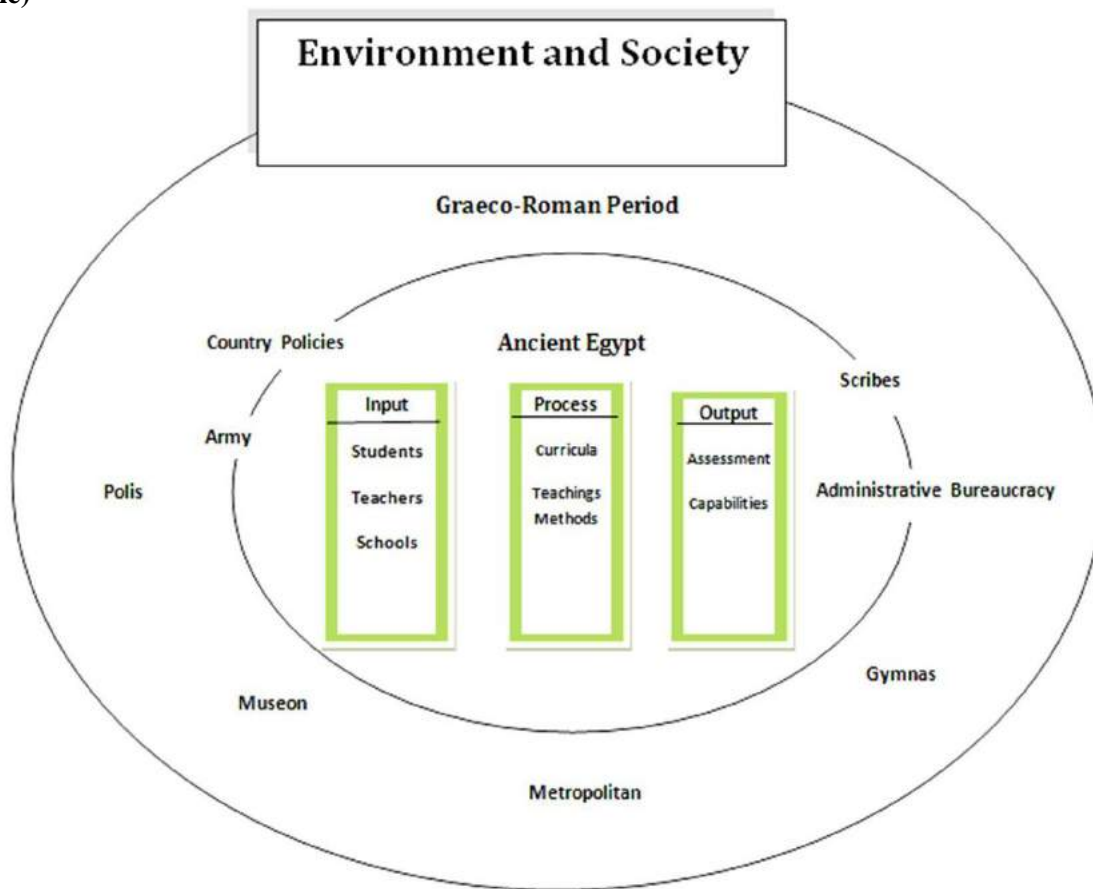
The Focus of the research is on the first two education levels, primary and secondary which ended at the age of 17 in Ancient Egypt and 14 in the Graeco-Roman Period, the age of admission to *ephebeia*[2]. The levels were devoted to provide students with some knowledge and skills concerning reading, writing and analysing some texts, basics of mathematics, swimming, music. They aimed to prepare them for their future professions whatever its direction. The examination of the educational operations in ancient Egypt and

languages as for example the case of *P. Lond. I* 43, p. 48: 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. 757-880.

[1]Williams, R., 'Scribal Training in Ancient Egypt', *JAOS* 92, 1972, p. 214-221.

[2]For the ephebaie institution in Egypt, cf. Legras, B., *Néotês, recherches sur les jeunes grecs dans l'Egypte ptolémaïque et Romains*, Genève, 1999; for the Hellenistic world, cf. Chankowski A.S., *L'éphébie Hellénistiques: étude d'une institution Civique dans les cités grecques des îles de la Mer égée et de l'Aise mineure*, Paris, 2010.

during the Graeco-Roman Period was based on different archaeological and documentary sources. The remains of some schools discovered in Thebes and Kharga Oasis could present some aspects of educational facilities in Ancient Egypt from the New Kingdom and Roman Period. The documentary sources are numerous and cover many aspects of education process as: school exercises inscribed on ostraca, wooden or stone tablets, papyri, teachers' manuals and ancient Egyptians maxims.

Education Quality in Egypt

The term 'Quality' which is used widely in modern times in many disciplines appeared for the first time around 45 B.C., when the Roman statesman and philosopher Cicero used the Latin term quality in his introduction the Greek philosophy. The stem of this word is questionable but it seems to be derived from the Greek word *poiotes* from *poios* of a certain kind, nature,[1] which has many categories according to the Greek philosophers, Plato and Aristotle[2]. 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 to all sorts of quality such as; beauty, wisdom, and also to the capabilities of doing something in a perfect way. Another word used for designating quality is the word *azia* which appeared in some Egyptian papyri to refer to the quality of some teachers either good or bad[3].In modern time, education quality has many definitions but the one which includes all the quality management aspects is: '*Education quality is the character of a set of elements of the input, process, and output of the education system that provides service that completely satisfies both internal and external strategic constituencies by meeting their explicit and implicit expectations*'.[4]The first stages of educational system in Ancient Egypt, primary and secondary, could be examined through three main quality indicators: input, process and output. The input factors include student/family and teachers. In modern times, there are other input factors but they don't match the status in ancient time. The educational process included curricula, teaching methods, and education facilities. The output examines the student achievements and the graduates' capabilities.

Based on the previous quality modern definition, many models were applied to investigate the complex nature of education quality management; two of them are convenient to ancient Egyptian educations systems. The first is the goal and specification model which assess the quality in individual institutions. Despite the importance of education, it was operated by local individuals due to the absence of an educational central authority. This model was also used when the educational goals are clear and endurable: providing the society with knowledgeable and competent graduates who meet the requirements of certain job and preserving and maintaining the social status and legacy of ancestors.The second model is the resource-input model which is applied in the case of limited resources as it was in Ancient Egypt. The model is also used when the recruited students are considered to be indicators of school type and education paths. In ancient Egypt, there was a linear regression between family/student social class and all the other factors of education quality. The socio-economic student strata indicate the school type, the curricula, the education facilities and the intended profession of the student.

1. The education in Ancient Egypt

The ancient Egyptians had many verbs and names, which are associated with education and instruction; for example, The verb sbA[5]means 'to teach', while the term used to denote education or teaching was *sbAyt,*[6]which means also 'instruction'; it is written with a connotation of 'punishment';[7]Along with *sbAyt*, the term *mtrt*[8]was also employed to denote 'instruction' but with a connotation of 'witnessing' or 'personal experience'. The latter term was mainly used in the Late Period, but a semantic difference between the two

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[1] 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° 57), p. 5-20.

[2] Cf. Anton, J.P., and Kuston, G.L. (ed.), *Essays in ancient Greek Philosophy* I, vol.2, New York, 1971, p. 549-561.

[3]*P. Oxy*. XVIII, 2190.

[4]Cheng, Y. C., and Tam, W.M., 'Multi-Models of Quality in Education', *Quality Assurance in Education*, vol. 51, issue 1, 1997, p. 22-31.

[5]*Wb*, 4, 83.

[6]*Wb.*, 4, 85.

[7] Lazaridis, N., 'Education and Apprenticeship', in Frood, E., and Wendrich; W. (eds.), UCLA Encyclopedia of Egyptology, Los Angeles, p. 3.

[8]*Wb*, 2, 127.

terms has not been detected.[1]   According to ancient Egyptian resources, there are many types of schools, which guarantee the education for all categories of Egyptians. Firstly; the <u>Royal school,</u> which was interested primarily in preparing royal princess and high officials; the students in these schools were learning all theoretical, applied sciences and traditions of the royal court. The citation by a governor of Asyut provenance, dated to tenth Dynasty, was a good witness of this type of school; he told us that '*his majesty appointed me as governor of Asyut and allowed me to learn swimming with other princes'.* During the New Kingdom we could know that Asian kings sent their princes to complete their education in Egypt by competent teachers.[2] Secondly; the <u>Religious school,</u> which was associated with main great temples, it appeared from the Old Kingdom and continued to the Late Egyptian Period, and it was known as pranx,**[3]**which refers to its role in education; the students studied in these schools all sciences associated with life. These types of schools were limited to main Nomes such as: Memphis, Abydos, Akhmim and Waset. Lastly, the other type of school was the <u>common school,</u> which accepted all Egyptians from all categories, as illustrated by many educational slabs discovered in some schools at Deir el Medina and Ramsseum. These educational slabs were similar to the booklets of student's homework, and they were corrected by teachers, they prove also the existence of a fellow-up system in the ancient education process. It is worthy to mention, that the story of *Sa Wsir* displayed a full-day system, which begins with a series of classes, and then students could take a long break in the middle of the day, then they get back to classes; this system was known in the schools of temples, it was implemented by skillful teachers.[4]

The ancient Egyptians succeeded in managing the education operation system; although there wasn't central authority, but there were common outlines that constituted the features of 'system' to control education in every Nome. The ancient Egyptian education system paths were very simple; they consisted of three main levels as indicated in figure 2. <u>The first level</u> was the elementary education, which starts at 4 or five years of age, and probably continued for four years; it was compulsory for the literal education in the secondary school. The student who joins the vocational education could be enrolled directly in this level without joining years of primary schools. <u>The second level</u> was the secondary education, which ended at the age of 15 or perhaps 16. In this level the student was enrolled in different paths, either literal or vocational according to their social class. This stage ended by a work-place training for those who like to join directly the labour market to acquire some practical and professional skills, and to be able to easily integrate in their profession. The autobiography of *Bak-en-Khensou*,[5] a priest who lived during the reign of Ramesses II, mentioned that he spent four years as an excellent child "nDs iqr"(elementary education), and then 11 years as a trainee stable-master (secondary education,). The student could finish the basic education at 15 or 16 years of age, and then could join the higher education in some universities, while the majority could work in the labour market. The higher education is mainly similar to Al-Azhar University. It was mainly submitted and controlled by Egyptian temples as the University of *Oune* at Heliopolis, University of Ptah at Memphis and the University of *Waset* at Thebes. The curricula included many science branches as medicine, engineering, astronomy and others, in addition to the main religious courses.

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[1] Lazaridis, *op.cit*, p. 3; According to Ficher, the terms refer properly to two distinctive concepts: **sbAy**t refer to 'Theory of Education', while **mtrt** made reference to "practical education"; cf. Ficher-Elfert, H.-W., *op.cit*., p. 439.

[2]The texts told us that the teachers of royal schools were known with title chief of royal teachers; for more information, see; McDowell, A., op.cit, 2000, p. 217-233; Reich, N., 'A grammatical exercise of an Egyptian Schoolboy', *JEA*10, 1924, p. 285- 288**.**

[3]Some scholars argue that the ancient Egyptian Pranx, is considered as institutes or universities, which introduced a high level of education for students before graduation; *Gardiner* supposed that the main role of *pranx* was to copy and sorts the books. It was known from the Old Kingdom, and it was associated with temples; there are two royal decrees from king *Pepi II* to exempt the temple of Min in *Qeft* from cost for the house of life which probably related to equipment and tools. For more Gardiner, A. H., 'Per Ankh: the house of life', *JEA*24, 1983, p. 157; Maspero, G., *Les Contes Populaires de L'Egypt Ancienne*, Paris, 1911, p. 125, n.3.

[4]Leblanc, Ch., 'L'école du Temple (ât-sebait) et le Per-ankh (maison de la vie): À propos des Récentes Découvertes Effectuées dans le Contexte du Ramesseum', *Memnonia*15, 2005, p. 93 - 110.

[5] Bakenkhons was a high priest of Amun at Karnak, he had two statues: one in Cairo Museum CG 42155, and the other in Munich Gl. WAF 38; for more information see; Jansen-Winkeln, K., 'The career of the Egyptian high priest Bakenkhons', *JNES* 52, 1993, p. 221-225; Frood, E., *Biographical texts from Ramesside Egypt*, In. *Writings from the Ancient World* 26. (ed.) John Baines. Atlanta: Society of Biblical Literature, 2007, p. 41-43.

Fig.2: The Proposed education 'system' in Ancient Egypt (@Zoair and Fahim cliché)
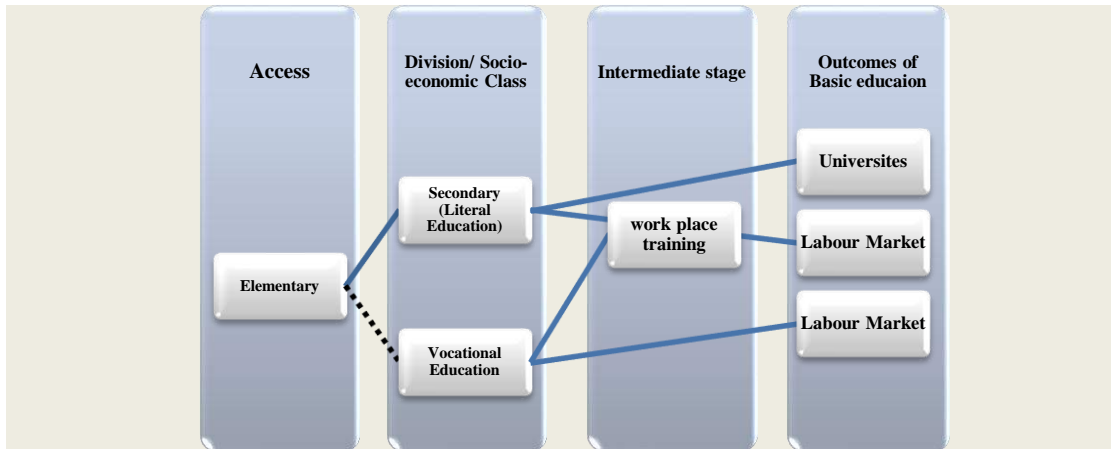
1.1 Teacher/Student input.

No doubt that ancient Egyptians struggled to secure their children's future, and they realized that the education could preserve their dignity and honour;[1] many maxims and advices introduced an image on how the parents motivated their children to attend regularly the school, and to care about their scholar duties as mentioned in the instructions of *Khety* (*supra*).Thus, the student was the focal point of the ancient education: he was the one who will keep the family legacy, and who well accomplish certain family trade in the future. The student profile in ancient Egypt is an indicator of his education paths, and his new future position as follows:

- The student descendant of high strata had some pre-school teaching in home. This domestic education was subjected to father's wishes, who perhaps teaches his son or appoints a pedagogue to take this responsibility.[2] The student is enrolled, then, in a school attached to a royal palace or Egyptian temples as the case of Ramesseum temple,[3] till he finishes the basic education (primary and secondary). These students had great opportunities to join the higher education institutions or a post in the labour market, especially as a scribe.
- The student of middle class followed the same paths of the previous class, but there is no evidence that they enjoyed the pre-teaching before enrolling in schools. They attended the same schools of the higher class, at least form the First Intermediate Period, as mentioned by the instruction of *Khety*.[4] These students had accredited to higher education institutions, but most of them preferred joining the market labour.
- Those of lower class could be enrolled in some schools for learning the basics of writing and learning. They were mainly prepared for the trade of their ancestors by passing some vocational training.
- It is not attested whether the female students were enrolled in the Egyptian school, but this doesn't necessarily mean that they were uneducated. At the same time; it seems that the ancient Egyptian society didn't hinder female education; the female heritage from ancient Egypt indicates clearly that a number of

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[1]Maxims of *Ani* to his son *Khonsu* clarify the interest of father to motivate his son to attend the school in regular, also maxims of *Khetydwa.f* is a good evidence for existing regular schools for beginners and to high levels, see; Wreszinski, W., *Atlas zur Altägyptischen Kultureschichte*, Leipzig, 1923, p. 62; Kees, H., *Handbuck der Orientalistik*, vol. 1, *Ägyptologie, II, Literature*, 1983, p. 12-15; Gardiner, A.H., *Hieratic papyri in the British Museum*, *3rd series*, vol. I, 1935, p. 43-45.

[2] Tyldesley J., *Daughters of Isis: Women in ancient Egypt*, London, 1994, p. 115.

[3]Leblanc, Ch., "L'école du temple (ât-sebait) et le per-ankh (maison de la vie): À propos des récentes découvertes effectuées dans le contexte du Ramesseum", *Memnonia* 15, 2005, p. 93-110.

[4] Journeying South to the residence to place him (the son) in the scribal school in the midst of children of the officials and the foremost of the residence', McDowell, A., *op.cit*., p. 18.

them occupied certain remarkable position, but the majority stayed in the shadows.[1] The domestic education was probably the main teaching for the female students, and it was probably to prepare them for the vocational education or their main role as house wives. Some of them learned the basics of reading and writing. Once upon time there was a girl who had been taught reading and writing, a letter dating back to the 20[th]Dynasty from a man to his son requested him to tell the daughter of *Khonsumose* to write a letter for him.[2]

The image of teachers in ancient Egypt was obscure, and there is little information about them. Through some education sources, it seemed that the teachers in schools, attached to temples or royal palaces, were mainly scribe-priests; they were responsible for preparing the next generation of scribes. There were some autobiographies emphasing that teaching was subsidiary post for the priest-scribe. But in case of tutoring the royal child, the title of 'tutor' was clearly inscribed as the case of Senmout. From the quality perspective, the little percentage of educated persons and the number of priest scribes revealed an ideal ratio of teacher/student, however it was by no means to precise. This ratio most probably decreased in advanced education levels to 1/1 the secondary school. The student started in elementary schools in group: every student had to write in front of his colleagues,[3] while in the secondary education evidence of one-on-one tuition is plentiful as proved by the students' exercises called the Late Egyptian Miscellanies. However, it is not clear if the 1/1 ratio covered all the years of the secondary education or only the last year of work-place training.

1.2 Teaching Facilities

Although the ancient Egyptian education system was characterized by limited resources, the available data could give us a clear idea about the education facilities; such as, place of education, teacher and curricula. All these facilities overlapped and integrated together, then finally provide a progressive education system. There were many references for the teaching places as 'sbAyt aAt' and pr anx. According to recent excavations at Ramsseum, these two places had two different tasks: the former served as a teaching place till the secondary education, while the latter was mainly dedicated to the higher education.[4] These teaching places were equipped with very simple sources, and it looked like *kottab* nowadays. Scenes of tombs and temples represented the teacher in different position, while teaching for students; he appeared seating on a mat and holding reed pens in his hands and writing on papyrus, also there are ink pots and two colours, red and black.[5] It is clear that the place of education in ancient Egypt had simple facilities, compared to the modern Egyptian school, but it is important to know that ancient Egyptians were keen to allocate a separate place for students provided with all teaching facilities.[6]

1.3 Educational Curricula in Ancient Egypt

We couldn't depend on a specific source to judge the curricula in ancient Egypt, but through biography and school ostracas of the high ranked people. It could be concluded that students at early age were taught the basics of reading, writing and science.[7] For example, during Ihansian Period,[8] there were regular schools of high levels of education and knowledge.[9] Many copies were made of *Books of Instruction*,[1] since they also

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[1]Tyldesley J., *op.cit*, p. 118.

[2]Many ostraca from Deir el-Medina present some example of female literacy, cf. Bryan, B., "Evidence for Female Literacy from Theban Tombs of the New Kingdom", *BES* 6, 1984, p. 17- 32; Toivari-Viitala, J., *Women at Deir el-Medina: A study of the status and roles of the female inhabitants in the workmen's community during the Ramesside Period*, Leiden, 2001, p. 32-34.

[3]McDowell, A., *op.cit.*, p. 219.

[4]Leblanc, Ch., *op.cit.*, p. 93- 110.

[5]Amenta, A., *op.cit.*, 2002, p. 13- 26.

[6]Kaplony-Heckel, U., 'Schüler und Schulwesen in der ägyptischen Spätzeit, *SAK*1, 1974, p. 227 -246; Leblanc, Ch., op.cit, 2005, *Memnonia*15, p. 93- 110.

[7] Brunner, H., *Altägyptische Erziehung*, 2nd edition. Wiesbaden, 1991, p. 80; Fischer-E, Hans-W., 'Education', in *The Oxford Encyclopedia of Ancient Egypt*, Vol. 1, Donald Redford (ed.), p. 438-442.

[8] Brunner, H., Die Texte aus den Graben der Herakleopoliten Zeit von Siut, 1937, p. 29-30;

[9] The exercices of students and their sheets are an important evidence to high level of education and regularity, for more more information see; Pap.Sallier, II; Pap. Anastasi, VII, copy of the Hymn to the Nile flood (British Museum ESA 10222) Brooklyn, I, Mélanges Maspero, 480; Ostraca from Deir el Medina, 1014, 1039, 1204, 2034, Cairo 25215, Posener, G., op.cit, des *Ostraca Hieratique Litteraires de Deir el Medina*, Le Caire, 1938, p. IV; The Papyrus Anastasi,

served as teaching texts in the schools for scribes. Seven complete and five partial texts had survived, while others are known from fragments. The one which appeared to be the oldest was by the celebrated, vizier, architect and physician to the 3rd Dynasty pharaoh Djoser. This text has not survived, but is mentioned in the *Harper's Song* in the tomb of King *lnyotef*. Another resource was the instruction compiled by the Noble and Royal Prince *Hordjedef* for His Son.[2] Both authors were held in such esteem as to be deified.

Of other educational treatises perhaps the most important is the instructions of *Ptahhotep*,[3] City Administrator and First Minister during the reign of His Majesty *Djedkare Isesi*, Ruler of Upper and Lower Egypt during the 5th Dynasty. Nevertheless, *Ptahhotep* rates fair dealing higher than learning: '*You may tell a wise man from the extent of his knowledge, a noble man by his good deeds*'. In contrast to the hierarchic structure of the Egyptian society in those days, this injunction to respect the opinions and knowledge of simple folk has quite a democratic ring: '*Do not boast of your knowledge, but seek the advice of the untutored as much as the well-educated*'.[4] These schools had adapted the teaching of language and literature.[5] There was some evidence of teaching the foreign languages in the New Kingdom schools, the fact, which historically corresponds to the era of Egyptian imperialism and of the extension of Egyptian foreign relations.[6]

It is worth noting that, Egyptians taught the Mathematics and Science to the students of high grade levels.[7] There are many sheets of math, which date back to the end of the Middle Kingdom, one of them included 84Mathematical questions, Mathematical equations, and the Rhind Mathematical papyrus was found in Thebes in the ruins of a small building near the Ramsseum. It is a copy made by scribe Ahmose during the 15th Dynasty, reign of the Hyksos Pharaoh, Apepi I. Ahmose states that his writings are similar to those of the time of Amenemhet III (1842-1797 B.C);The sheet of *Ahmose*, dated back to the Second Intermediate Period was considered good evidence of what is known modern '*course description*'.[8]The sheet of Ahmose was a complete curriculum of mathematical questions with answers, and also the mathematical equations, the curriculum was divided gradually from easier to difficult, every group of questions are put in separated part, all these procedures, guarantee the complete profit to the students. In addition to these subjects, sports, music, and other arts could have been featured also in Egyptian education. The evidence of the treatment of such subjects is, however, scarce.[9] Table (1) summarizes the educational curricula and educational sources as follows:

reign of Ramses II. In: Gardiner, A. H., E*gyptian Hieratic Texts, Literacy Texts of the New Kingdom*, I, Georg Olms Verlagsbuchhandlung Hildesheim, 1964

[1]McDowell, A., Awareness of the Past in Deir el-Medina. In Village Voices: Proceedings of the symposium: *Texts from Deir el-Medina and their interpretation*. Leiden, 31 June 1, 1991, (ed.) Robert Demarée, and Arno Egberts, 1992, p. 95-109 ; Id., Student Exercices from Deir el-Medina: The dates. In *Studies in honor of William Kelly Simpson*, Vol. 2, (ed.) Peter Der Manuelian, 1995, p. 601- 608.

[2]Shupak, N., op.cit, *SAK*, 1989, p. 121- 129.

[3]Zába, Z., Les Maxims de Ptahhotep, Prague: Editions de l'Académie Tchécoslovaque des Sciences, 1956; Shupak, N., op.cit, *Akten des vierten internationalen Ägyptologen Kongresses München 1985*, 1989, p. 121- 129.

[4]Zinn, K., Libraries and Archives: The Organisation of Collective Wisdom in ancient Egypt. In *Current Research in Egyptology* 2006: *Proceedings of the seventh annual symposium*, University of Oxford 2006, (ed.) Maria Cannata, Oxford, 2007, p. 169- 176.

[5]There is a sheet for student called *Pentawr* who studied the ancient literature represented in Amenmhat's maxims and the contemporary literature represented in Hymns of *Dhwty,* see; Sesana, A, and Monique N., 1998. Exercices d'élèves-Artisans Découverts au Sud-ouest du Temple de 'Millions d'années d'Aménophis II', *Memnonia* 9, p. 191- 199 ; Reich, N., 'A grammatical exercise of an Egyptian schoolboy', *JEA*10, 1924, p. 285- 288.

[6]Brunner, H., *Altägyptische Erziehung*, 2nd edition. Wiesbaden: Otto Harrassowitz, 1991, p. 99

[7] Pap. Kahun, pl. VIII; Pap. Berlin 6619, see also; Pap. Rhind, no. 21.

[8]Course description is one of the modern requirements of NAQAA to guarantee the development of high education in institutions and faculties.

[9]Lazaridis, N., op.cit, *UCLA Encyclopedia of Egyptology*, Los Angeles, 2010, p. 1-13

Table 1: The Educational facilities in ancient Egypt, elementary phase

Elementary Phase from age 4 till 14				
Available Schools at this phase				
Court schools of books	Instruction house	Government department school	House of Books	Royal stable of education and writing
Curricula				
Writing and reading	Mathematics	Swimming	Sacred songs	Manners and morals

Conclusively, ancient Egyptians realized the importance of education to promote their life, and all literature resources introduced advices dealing with education and regularity attendance at schools. Egyptians developed an educational system from the Old Kingdom and all categories of Egyptians could join their children to schools. There were schools attached to the royal palaces for princes and princesses. Other schools were associated with temples, and their curricula were mainly religious; with priority to educate funerary rituals and all religious thoughts. Common schools for students in all provenances accepted probably age of four or five, and their curricula concern education of the basics of language, reading, writing, and some literature science. Egyptians introduced all support and facilities to the students, such as; varied types of schools including all category of society, varied curricula starting from start gradually from bases to profession; the Egyptians surpassed every aspect of life medicine, math, engineer and others, the reason behind this is the comprehensive educational system which introduced good quality graduate to the work field.

2.   Quality Education in the Graeco-Roman Period

Through the Papyri, it was noticed that enrolment of children in education and their success were a matter of anxiety and great importance for Greek families during the Graeco-Roman Period as indicated *supra*.[1]During *supra*.[1]During that period, two education systems ran in Egypt, the Hellenistic education and the native education. The latter followed the same system of Pharaonic Egypt with the same educational paths, school types and the curricula, but with added Greek language; the Demotic gained a wide range in Egyptian education as it became one of the languages needed for administrative bureaucracy. The Egyptian labour market was seeking for bilingual graduates.

For the Greek ethnic people and other communities who seek learning Greek language or following Greek life style and culture, the education was extremely attached to the Hellenistic pattern of education (*paidei*) which started formally at 7 till 18-20 years old. According to classical and modern historians, it could be divided into three stages: primary, secondary and higher education.[2]This classification was based on two main criteria: teacher type and curricula. The *grammatodidaskaleion* or *grammatistis* was responsible for the primary school, while *grammatikos* was in charge of the secondary school. The sophists or rhetorics were the one who taught students of higher education, the border line between these stages was not always feasible and the division between the first two stages was not always so rigid either in Egypt or in the other parts of Hellenistic and Roman Egypt.[3]The papyri indicated that the same teacher might teach the curricula of primary and secondary levels; some teachers' handbooks included curricula beginning from the Greek alphabet (primary) till studying parts of Homer and other classical writers' works (secondary) as shown in fig (3).

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[1] Cf. note 2. For more examples that indicate the importance of education for the families cf. Préaux C., *op.cit*, p. 757-880.
[2] *Ibid*, p. 161.
[3] Cf. Kaster R.A., 'Notes on the primary and secondary schools in Late Antiquity', *TAPA* 113, 1983, p. 323-346; Booth A.D., 'The schooling slaves in the first century Rome', *TAPA* 109, 1979, p. 11-19.

Fig. 3: The proposed Hellenistic education system in Egypt during the Graeco-Roman Period (@Zoair and Fahim cliché)
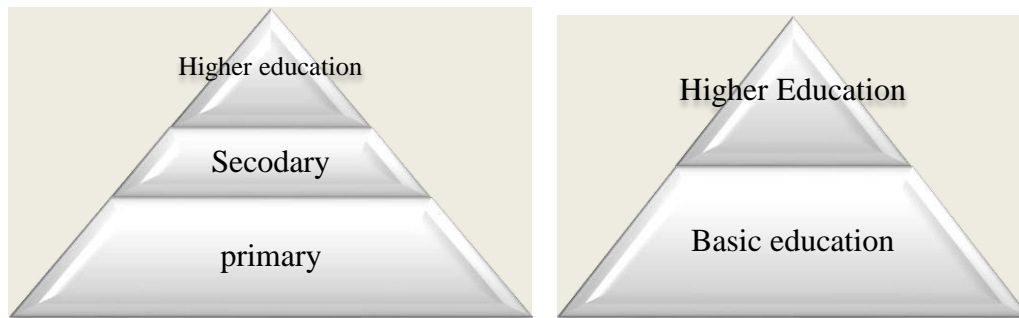
2.1 Family/Students and Teachers Input

The educational input was practically similar to recent educational input because it included teachers, students, and books, beside family. Normally, family isn't regarded as a factor of education input but in Ancient Egypt as in other civilizations, family and student are considered to be two sides of the same coin. In other words, family profile revealed the majority features of student profile as follows:

- The student of privilege or middle class families could benefit from preschool teaching. Fathers look charge of teaching their children the basics of reading and writing before accessing to formal schooling following the Roman parents in elite classes.[1] In some cases, they appointed a pedagogue to handle these responsibilities.[2] This step provides the students with some skills that facilitate their learning in the formal school, while the students of lower classes start from the beginning in the primary school.

- Students of the upper-class families could be enrolled in public, private school,[3] or temple school.[4] The word private school means that the family was able to hire a teacher to give lessons at family home. The middle class students were enrolled mostly in public schools, while the lower class ones joined only the open-air school (*kottab* nowadays).The quality input indicator investigates mainly the teacher/student ratio which is difficult to be calculated firmly in Egypt during the Graeco-Roman Period. However, the public or private school refers to a low student/teacher ratio that couldn't exceed by no means 1/25. The private school may present 1/2 ratio, while references to public school in papyri or the archaeological discoveries indicate ratios 1/10 to 1/18.[5] This low ratio is considered to be an indicator of high quality input as the teacher could concentrate with every student to develop his skills. The papyri give some hints about family's satisfaction with the teacher's efforts with some students and how they were able to make the students enjoy learning.[6] Despite the importance of the family class, the teacher was the main pillar of education input. Due to the absence of governmental institution of education and the dominance of private education, the competitive environment had a positive impact on the quality of teachers. They were motivated to apply adequate means to enable student to acquire the required knowledge and skills. The good reputation made them demanded by

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[1] Hoster M., 'Primary Education', in: Peachen M. (ed.), *The Oxford handbook of social relations in the Roman world, Oxford*, 2011, p. 84-100.

[2] The pedagogue was known in Classical Greece and continued till the end of the Pagan Period. Many papyri indicated his role in the family and his influence on the students. cf. Hoster M., "Primary education", in: Peachen M. (ed.), *The Oxford handbook of social relations in the Roman world*, Oxford, 2011, p. 84-100; Marrou H.-I., *Histoire de l'éducation dans l'antiquité*, Paris, 1965, p. 161

[3] The term 'private school' refers in Ancient Egypt to teaching the process held in family home for the family children, while the term 'public education' means that the students are numerous and attend a kind of school. In two cases the family bear the education costs.

[4] 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 temples. 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. 99-184; for Thermoutis cf. Bresciani E and al., *Ostracademotici da Narmuti*, Pisa, 1983.

[5] This ratio was calculated according to space available in *Amhedia* School: the authors considered that every student requires only 50 cm^2.

[6] P. Oxy, VI, 930. It is a letter from a mother to her son regretting the sudden departure of the teacher that was so clever.

the wealthy families, while 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',[1] while there is a student called *Neilos* reclaiming to his father because he couldn't find a qualified teacher and informed him that he quitted the lesson of his teacher and is looking for another teacher.[2] Many different sources, either for education or for other purposes, indicate that learning and teaching were subjected to a strict system and every pillar of educational inputs should be well prepared: the teachers should be equipped with their manuals and prepared contents; students 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. This environment may have caused a positive impact on the education during the Graeco-Roman Period.

2.2 Teaching Facilities

The teaching facilities in Antiquity were resumed in school and its simple equipment. The term school, *didaskaleia*, or 'the teaching place' was identified by the name of the teachers who managed all the activities of it. There are many references in papyri to such schools as:[3] schools of Thoth's in *Memphis*, school of *Melankomas* in *Fayoum*, and that of *Dionysus* in *Oxyrhynchos*.[4] The term school refers only to a space dedicated to teaching and there weren't any criteria for choosing the space but only the availability as indicated by some papyri and recent archaeological discoveries in Oases. According to the space, the schools in the Graeco-Roman Period could be divided in two kinds: school in buildings and in open-air school. References to the former type were very numerous especially in private letters and taxes document. Schools could be established in private, public building, temples, tombs, and houses. P. Lond. I, 43[5] refer to a school that was founded in an Egyptian physician's house and was dedicated probably to teach Demotic for some Greek slaves. Some teacher rented a part from a public building as the case of *Dionysius* who rent the western *stoa* of a building in *Oxyrhynchos* to be his school.[6] This school lies in the enceinte which included many buildings as the temple of Fortune, the temple of *Achilles* and other buildings. Establishing a school in some public buildings was a common practice in Hellenistic and Roman World as proved by some buildings in *Pompeii* where two elementary schools were constructed under the arcade of the Forum and of Campus.[7]

Regarding the equipment of the school, these recent excavations works in Amhedia as well as some terracotta statuettes could help to give an image about it. The recent excavations in Amhedia, ancient *Trimithis*, in *Dkhala* have found a school that is considered the only example of school in Egypt so far.[8] It was established beside the house of the city councillor, and later on, one of its three rooms was incorporating in the house. Some walls of the three rooms were covered by white gypsum plaster, which served as a board for the teacher;[9] one wall contained some *dip into*.[10] All the three rooms are occupied by a series of benches with two steps along one wall or two to serve as a setting place for students. The student could stand on it to write on the whitewashed wall behind them.[11] Another space that was reused for education purpose was the ancient tombs, which completely deserted during the Graeco-Roman Period as the tombs of *Beni Hassan*. In one of the tombs explored by Champollion, seven rows of Greek syllabary including consonants and vowels were inscribed on the walls, the sequences of letters show that they were used for teaching students the

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[1] Cribiore 2001, p. 48; P.Oxy.VI 930.

[2] P.Oxy. XVIII, 2190.

[3] Cribiore R, Gymnastic of the Mind: Greek education in the Hellenistic and Roman Egypt, Princeton 2001, p. 18.

[4] UPZ I. 78; SB III.7268 and P. Oxy. LXIV 4441.

[5] 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.

[6] P. Oxy LXIV. 4441; this papyrus dates back to the year 315-316.

[7] Cf. Della Corte M., 'Scuola e Maestri in Pompeiantica', *Studi Romani* 6, 1955, p. 621-634.

[8] The discovery of schools in Kom el-Dikka in Alexandria wouldn'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. 135-139.

[9] Cribiore R. and Davoli P., 'New Literary Texts from *Amhedia*, Ancient Trimithis (*Dakla, Oasis, Egypt*), *ZPE* 187, 2013, p.1-14.

[10] 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.

[11] *Ibid*, p.7.

Greek language.[1] The school could be established in open-air either in a street, or in front of a house or under under a tree; this school type is similar to what is known in Egypt as *kottab*, a teaching place served for teaching the basics of reading, writing and reciting Koran. This kind of school is 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', refers probably to elementary teachers who gave their lessons in the open-air.[2] air.[2] The teacher could sit on a block or a chair and the students on the ground with their teaching material: papyrus, wooden tablets and Ostraca. J.G. Milne comments on the discovery of many Ostraca with Greek exercise as such; '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'.[3] Despite the simplicity of school accommodation during that period, but it met the basic requirements for the education processes. The facilities are similar to equipment of Egyptian primary schools nowadays: benches as setting places for the students, chairs for teachers and white or coloured board. The terracotta represent students sitting on chairs or benches holding their tablets or papyrus[4], while the school scenes of the Classical Athens figured the teacher sitting on the chair and the students stands in front of him.[5]The rooms of of *Amhedia* School were equipped 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 neither in school nor the space of school. But, the school day of a student mentioned in *Hermeneumata* shows clearly that every student has his chair or setting place[6]*'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 *Amhedia* occupies, albeit its inaccurate determinations, not more than 10% of the space of the school, this means that the number of admitted students wasn't massive and the available space for every student meets the modern requirements of the quality standards[7].

2.3 The Education Process

Albeit the lack of central education authority in Graeco-Roman Egypt, the scholar documents from different sites attested the homogeneity of intended learning outcomes whereby affirming that the schooling was run in a systematic manner to achieve its ultimate goal: providing the students with knowledge and skills of being Greek and positive attitudes towards the heritage of his ancestors, customs, habits, and his roles in society. According to the Greek concepts, the children had to learn different kinds of science to be well educated and ready to perform their roles in the society. They should learn reading and writing Greek language, basics of music, history, geography, arithmetic, and athleticism[8]. To graduate, the student had to pass through different educational levels, and prove that he attained a specific level of knowledge and abilities. The education environment and context in Egypt was influenced by many elements indicated in fig. 2. The education external environment was dominated by family social class and the planned future for the student, ephebia, gymnasia and some jobs in the society. The main elements for the education process in the classroom activities are the teaching methods and assessment methods. Table 2 was designed to link between education processes' elements. It was based on an immense collection of scholar documents published by *Rafaellea Cribiore*, *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 Graeco-Roman Egypt followed a systematic pattern and proceeded according to an organised manner. The Hellenistic education process, inherited from Athenian model, kept its manner without any fundamental changes and only merely modifications occurred in teaching and assessment methods during the Roman Period; these modifications attested the Egyptian influences more than the Roman model.The so–called 'un livred' écolier', which was a

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[1] Cf. Maspero J., Monuments de l'Egypte et de la Nubie, notice descriptive conformes aux autographes rédigés sue les lieux, vol. 2, Maspero J. (ed.), Paris, 1889, p. 459-460, n°10.

[2] P. *Sorb.* II. 69.

[3] Milne J.G., 'Relics of Graeco-Egyptian schools', *JHS* 28, 1908, p. 121-132 (p. 121).

[4] Hassan F. (éd.), Alexandria Greaco-Roman Museum, Cairo, 2000, p. 135.

[5] Cf. Boot A.D., 'Douris' cup and the stages of schooling in the Classical Athens', *EMC* 29, n° 4, 1985, p. 274-280.

[6] Dionisotti A.C., 'From Ausonius' schooldays? A school book and its relatives', *JRS* 72, 1982, p. 83-125 (for the school school day cf. 89-101).

[7] We have to take in account that our judgement about the available space for every student depends only on few archaeological and documentary resources and the diversity of school kinds as private homes or temples hinder an accurate determination for this space.

[8] Many references attested the presence of athletic institutions in Egypt during the Graeco-Roman Period cf. Hassan F., *op.cit*, p. 134. Also, the gymnasia were mainly an athletic centre where the Greek children learn different kinds of sport.

teacher manual, as well as many scholar ostraca, papyrus, wooden tablets proved that teaching was run according to the sequences indicated in the table: from letters to some parts[1]. The teachers were certainly influenced by inherited knowledge from ancient philosophers as Plato and some rhetoricians as Quintilian to follow this sequence. Certainly, the teachers were led by two main academic objectives: mastering writing and reading Greek language. The first step was writing letters and then they 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 the secondary school the students read and know by heart parts or chapters from Greek literature.[2] In every stage, the education proceeded according to the teacher-centered approached.

Table 2. The Education level and its objectives and teaching and assessment methods

Level	Education objectives	Intended learning outcomes	Contents	Teaching methods	Assessment methods
Primary	Acquire the principals basic of writing	Describe the right directions of writing Alphabet letters	Greek Alphabet	Learning by doing	Practical exam: Writing a single letter without following the alphabet sequences
		Draw the Greek alphabet	Greek Alphabet	Learning by doing	
	Reading correctly Alphabet letter	Explain the right sequence of Alphabets	Greek Alphabet	Lecture- learning through playing	Written exam: write letters in horizontal roles in right order, reversed order.
		Define the name every letter	Greek Alphabet	Lecture-singing	Oral exam: read Alphabet letter in its sequences and chalinoi
		Pronounce the sound of every letter	Greek Alphabet	Singing-reading	
	Pronounce the different syllables	Define the meaning of syllabary	Greek Alphabet	Reading	Written exam: write different syllables started with consonant and the vowels
		Distinguish between the different types of syllabary	Greek Alphabet	Reading	Oral exam: pronounce different syllables from monosyllables to most difficult combinations.
		Pronounce the different syllables	Greek Alphabet	Singing-Reading-Learning through playing	
Secondary	Know by heart list of words	Outline list of words according to their syllables	Greek Alphabet	Lecture- Reading	Written exam: write name of gods, hero, rivers…etc.
		Explain list of words according to themes.	Greek Alphabet		Oral exams: pronounce a list of words
		Read short passage of Homer	Iliad	Reading	Oral exams: reading some passage
Secondary	Know the works of Classical Writers	Read long passage of Homer and other writers	Iliad	Reading	Oral exams: reading some passage
Secondary		Analyse some passages of Classical Writers	Iliad and other works	Reading	Oral exams: reading some passage Writing a topic

[1]Cf. Guéraud O. and Jouguet P., *Un livre d'écolier du IIIe siècle av. J.-C.*, Publications de la Société Royale Égyptienne de Papyrologie, Textes et Documents II, Le Caire, 1938.
[2]Marrou H.-I, *op.cit.*, p. 232-234.

The main goal of primary education, either private or public, was mainly to enable students to acquire only very limited reading, writing ability and the basic of arithmetic.[1] This goal was achieved through some objectives as: copy a brief text, define Greek alphabet, read some words or a short passage, define numbers. To achieve these objectives, the education was knowledge and teaching-oriented, the teacher was the main responsible for providing knowledge and the students follow his instructions to be able to gain what he taught them. Following the instructions of Plato and others, the first step of educational process was to teach the student copying the texts before learning the Greek alphabet. This method developed the memory faculties and thus the student should engrave the form and then the value of every letter.[2]

For the secondary level, Students started to work on the Classical works of their ancestors. *Iliad of Homer* was the main source of this level. Students had to read short and long passages from the Classical writer. In addition, they had to analyse these passages and elaborate a topic related to their analysis. In some ostraca, student's arrived to composite a new story.[3]

2.3.1 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 gave some indications about some teaching methods which had been attested also in documentary resources and archaeological finds. The teaching methods could be summarized as follows:

- Learning by doing might be the first teaching method 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[4]. In some wealthy family, they could use some alphabet letters' puzzles,[5] and in the Roman world some wealthy persons prepared cakes in the shape of letters.[6]
- Learning by doing was also used as a teaching method in arithmetic: students used their fingers to know numbers and how to calculate.[7]
- Singing was highly applied as teaching methods in the ancient World. It started with learning Alphabet. Students, together, started to pronounce the letters according to a rhythm to stimulate the faculties of memory.[8] This method was used to enable the children to master the pronunciation of monosyllables, bisyllables, trisyllables, quadrisyllables and pent syllables. The exercise of syllabaries shows that that '*a scheme of the letters of the alphabet each in turn combined with different vowels*'.[9] In the tomb of *Beni Hassan* such syllables were inscribed on the wall in a way to facilitate signing them. Reading was a crucial teaching method in the literal education and it was considered also as a daily activity in the class.
- By using the reading method, the student starts to play an important role in the education process and the role of teacher was mainly to follow-up and to correct the students' pronunciation.
- Lecture is the ultimate teaching methods, which predominated the education in the Antiquities; the teacher was the only source of knowledge.

2.3.2 Assessment Methods

The scholar exercises indicate clearly that students' assessment was a key issue in education: it is the close-up of education process and the main pillar of output. It is so difficult to predicate the time table of assessment in Antiquity. But the immense collections of students' exercises show obviously that teachers

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[1] Cribiore 2001, p. 131.

[2] Collart P., "A L'école avec les Petits Grecs d'Egypt", *CdE* 21-22, 1936, p. 489-507, p. 501.

[3] Cf. Cribiore R., "The happy farmer: a student composition from Roman Egypt", *GRBS* 33, p. 247-263.

[4] Clarysse W and Vandrope K., Boeken en Bibliotheken in de Oudheid, Leuven, 1996, p. 25.

[5] Cribiore 1996, p. 37.

[6] *Ibid*, p. 38 and 143-44.

[7] 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).

[8] According to Plato (Republique III, 402 a-b) and Quintilian (Institutes of Oratory, I, 1, 25), teaching process had to start by stimulating 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*".

[9] Milne J.G., *op.cit*, p. 123; for clear examples of this exercise cf. P. Rain. Unterricht 7 (MPER NS xv) and T. Mich.inv. 763; for the last example cf. Cribiore 1996, no. 83 and photo VII.

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 of the teacher to advance in his curriculum or to revise some points with the students. On the other hand, summative assessment wasn't nationally or regionally organised as a modern educational institution, and it is difficult to precise the assessment type through the scholar exercise, but there are some references to competitions that were organised by the city where the winner had a prize; also some exams were held by teachers for whom liking to join gymnasia.[1] Scholars' exercises show varieties of assessment methods to evaluate knowledge and skills of the students. They are strongly prepared according to the academic objectives and the content of the courses.

According to table (2), practical exams were run from the primary school to the end of the secondary schools. In primary school, teacher used this method to ensure that students write correctly the alphabet letters. The student copied some letters from a model prepared by the teacher and wooden tablets were used as exam materials. This exam might also take place in the school by writing on the board and evaluating the way of writing individual letters without following the alphabet sequences. The practical exam was the main method to assess the student attainment of music. The student should play music on a specific instrument. The shortage of documents concerning this type of education hinders giving a complete picture about it.

Written exercises were widely used to assess the capabilities of the students to write. Through this method the teacher evaluated different levels of thinking and recalled all the cognitive domains of what we call today Bloom's Taxonomy[2]. In the primary level, to assess the student knowledge of alphabet letter, the student was was required to write alphabet letters following the sequence of letters to assess his remembering ability. The student could be asked to write alphabet letters in reversed order[3] or to write the letters in pairs: 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. The written exercise for syllabaries recalls the remembering and the understanding ability of the students. However this exercise was somehow very boring the student is asked to write syllables many times and sometimes he starts with careful handwriting and then loses his concentration and melanges the letters and makes mistakes. In the advanced level, the student is asked to write names of gods, geographical sites, or figured Greek persons that start with some specific letters and give hints about them. In the secondary level, written exams were applied to assess the analytical skills of students or abilities to formulate a story. 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 become difficult according to the education levels and the content. The first oral exams may 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 was 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 pronounced to improve the elocution abilities of the students.[4] These *chalino*i were used also in written exams in the primary level.

Conclusion

Education played a fundamental role in the ancient Egyptian society till the end of the Graeco-Roman Period. It was the tool of the family to keep its social position either in the upper or lower classes. However, it was by no means managed by a central authority. Education in Egypt was subject to the family strata which controlled the education input and process, and in the same time considered to be an indicator of education output and the graduates' employability as indicated in table (3).

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[1] Cribiore, *Gymnastic of the mind*, p. 35.

[2] Bloom Taxonomy was created by a team under the leadership of psychologist Dr Benjamin Bloom in 1965. 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 follows: 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.

[3] Cribiore 1966, p. 39; she gave some examples of Ostraca that contain such an exercise.

[4] Cf. Guéraud O. and Jouguet P., op.cit.

Table 3: An overview of Education in ancient Egypt and Graeco-Roman Period

	Upper Class		Middle Class		Lower Class	
	Ancient Egypt	Graeco-Roman Egypt	Ancient Egypt	Graeco-Roman Egypt	Ancient Egypt	Graeco-Roman Egypt
Enrolment age	4-5:15-16	7:14	4-5:15-16	7:14	4-5	undetermined
Preschool	Yes	Yes	Yes	Yes	No	No
Pedagogue	N.A	Yes	Probably	Probably	No	No
Education tracks	Literal education	Literal education	Literal education	Literal education	Education based on training	
Education paths	Primary-Secondary-Higher Education		Primary-Secondary-Higher Education		Primary- Crafts school	
Schools	Court school - Royal stable of education and writing	Public-Private	Instruction house-house of book	Public	Government school – craft school	Open air-crafts school
Female education	Yes	Yes	Yes	Yes	Undetermined	Undetermined
Teaching Methods	Learning by doing-Reading-lecture-singing-practical exercise-workplace training	Learning by doing-Reading-lecture-singing-practical exercise	Learning by doing-Reading-lecture-singing-practical exercise-workplace training	Learning by doing-Reading-lecture-singing-practical exercise	Learning by doing-workplace training	Learning by doing- work place training
Employability	Controlled by family		graduate capabilities		family occupation	

Education plays a very important role in Ancient till the end of the pagan periods. That it could be tested from the goal and specification model. From goal perspective, education was regarded as a means to preserve the social strata and family profession but its ultimate goal was preserving the identity especially for the Graeco-Roman Period. This goal was attested in many citations either in private papyri or in the wisdom works. This goal had an impact on the way of management of education. Because the goal was mainly related to the family class and identity, the sole authority was totally absent till the end of the Graeco-Roman Period and it was operated by institutions either public, as temples or royal palaces, or private, as some private school.

The link between the education objectives and the family strata led to the second model of quality, i.e. the resource-input model obviously controlled the educational operations in Egypt. There was a correlation between family profile and quality pillars: input, process and output. As indicated in table (3), the family class has its impact on the education paths, type of school, teaching materials, and even the expected future post for students. The only exception of this rule is the middle class because its children could be enrolled in upper classes' school and they could be appointed in some posts consecrated to those of upper classes because of their high quality capabilities as the case of Amenhotep son of Hapu.

Both Ancient Egypt and Hellenistic education patterns ran according to some principals that are not recorded separately but could be extracted from documentary resources. They perceived the ease of apprenticeship when starting from a small age. In wealthy and probably middle class family, the two patterns start the first step of teaching at family home and the father perhaps took this charge or appointed a pedagogue. It looks like the phase of kindergarten but at home. The "formal schooling" starts at 4-7 years of age like the majority of modern system all over the world. Regardless of the education path, all the students start at this age, however, it is difficult to determine the schooling age for the lower classes. This age was favourable to classical philosophers and writer because they thought that children could realize what they learn. Both two patterns the student start schooling by learning reading and writing, besides other sciences and activities. The both start by teaching the students basics of writing, but in different ways; the Egyptian teaches writing

complete word while the Greek teaching begins with alphabet letters. The two are suitable for the nature of language and efficient, and for that the two systems ran always in parallel despite their co-existence beside each other. The efficiency of the Egyptian system is due to the respect of complexity of Hieroglyphic phonograms and ideograms: unilateral, bilateral, trilateral signs, determinatives, and phonetic complement; thus, teaching the whole world is the most suitable system for learning writing and reading Egyptian language. It is similar to the system of teaching the Chinese language: the students learn writing whole word and its pronunciation. For the Greek language, because its alphabet is mono-sign and mono-pronounced, the system of writing letter and syllabary is far adequate as followed in many modern language teaching. Starting by learning writing letters is similar to what the modern education system applies. Perhaps the European systems don't prefer to concentrate on this skill but they practice some activities as drawing, painting, and writing graffiti in a specific space which enables students to strength their hand's muscles and to activate some faculties of memory. The same notion was attested in Classical Writer who prefers at first teaching writing. This indicates clearly that education was operated according scientific basics and beliefs.

Beside mental capabilities, the two civilizations paid also attention, to the physical training and spiritual sides. The physical exercises were part of education as swimming, wrestling, running, discus throw … etc. Certainly, these exercises were not practiced in schools but in some buildings attached to temples and royal palaces or in gymnasia for the Greeks. Music and sacred songs played role in education; it is though that they purify the soul and make it join the divine realm. Therefore, there was a system for improving mental ability, soul and physical capabilities of individuals.

The quality pillar of education in Egypt has a positive effect on education because it controlled demand and supply. The private environment of education especially during the Graeco-Roman Period causes every element to act in a proper manner. The family shoulders the financial responsibilities and exercises control over the education process. They seek always the qualified teachers, and follow up students at home. For teachers, competitive environment pushed them to be well prepared, adequately function class, properly applied teaching methods. However, families suffered to find qualified teachers especially in small cities and some metropolitans; many teachers desert their home city to great cities as Alexandria, seeking for more opportunities. This means that there was a correlation between the city importance and the quality of education during that period.

The varieties of teaching methods witness the quality of the education process. Lecture wasn't the only way to enable the acquisition of knowledge and skills; but teachers used many methods to achieve their objectives. The choice of teaching methods was subject to learning outcomes: learning by doing was applied in case of practical objectives; singing was used to improve the pronunciation. Learning by doing and work place training were used in case of vocational education which provides students with professional skills. It is not easy to identify the different methods of assessment; scholar documents don't give any sufficient indications about its type: summative or formative. But it is obvious that children do homework, solve mathematical exercise, passe playing music tests and participate in some sportive competitions. In any cases, Greek children had to pass the ephebaie exams to be able to join this institution and for that they do efforts to attain the required knowledge.

Finally, the crucial role of education played in the Egyptian and Greek societies make the question of its quality and its development an ultimate issue. The notion of quality was attached to every step. Perhaps, some education aspects are contradictory to the modern standards as gender equity and accessibility but it was homogeneous with the society context and environment. Judging the achievement of goals, education in Ancient Egypt was always capable to build-up capacities that fulfil the need of labour market; it attested also high response to the changes in society.