CHAPTER 14

EDUCATION IN THE PAPYRI

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The last twenty years have witnessed a renewed interest in literacy and education in the Greek, Roman, and Byzantine worlds. Previously, H.-L. Marrou’s history of education (1975; first edition 1948) and the study of Roman education by S. Bonner in 1977 were the authoritative works in this field. Both authors used the papyri to a limited extent and only to confirm the ancient literary accounts of education. They believed the evidence from Egypt reflected a pallid image of the highly literary practices in Greece and Rome. In the past two and a half decades, some of the new research, which has focused on the role of education and orality in classical Athens (e.g., Thomas 1992) and on literacy in the ancient world (Harris 1989), has taken the papyri into limited account. In 1996 Raffaella Cribiore produced a rigorous study of school exercises in Hellenistic, Roman, and early Byzantine Egypt that included a catalogue of exercises and extensive photographic documentation. The book on education by Teresa Morgan (1998) was based on this body of material.1 Cribiore complemented her previous study with another, published in 2001, that also took into account school texts and rhetorical exercises on papyri.

In what follows, I focus on Greek education during the roughly ten centuries between the conquest of Egypt by Alexander of Macedon and the Arab conquest. One might question the legitimacy of covering this vast period as a continuum since it has long been recognized that, from the socioeconomic point of view, Greek and Roman Egypt differed significantly. Did education undergo any changes during these ten centuries? Can one be indicted for adopting a methodology similar to that of earlier scholars, who placed evidence into the neat categories derived from the literary sources? Some changes did indeed occur, but they neither warrant a different periodization nor significantly affect the essentially “frozen” quality of education in Egypt as in other Roman provinces (Cribiore 2000b, 8-9).

While literary and anecdotal traditions alone reveal what we know of Greek education elsewhere, Egypt has offered a large quantity of educational material that permits us to glimpse the everyday, unexceptional practices of schooling and to observe certain details. The sands of Egypt have preserved school exercises written by students and teachers and some texts that were used in schools. This educational material is extant on papyrus, ostraca, wooden and waxed tablets, and, more rarely, parchment. In addition, information about ancient schools (and learning environments generally) emerges from the papyri and from findspots of exercises and other archaeological material (ibid., 15-44). When referring to “schools” in antiquity, we must be open to all scenarios because of the diversity and frequent lack of formality in schooling not only in villages but also in urban environments. While the papyri have transmitted the names of a considerable number of teachers who are identified only by their professional title (Cribiore 1996, 161-170), direct references to schools are more infrequent because of the lack of formal settings. Thus, the recent discovery in Alexandria of eighteen or more classrooms (aulodoria) used in late antiquity for higher education is tantalizing. In this case, the literary tradition2 converges with the archaeological findings to spotlight a formal school setting used by grammarians, sophists, and teachers of philosophy.

The literary sources indicate a strict division of levels of schooling. This remains largely valid, provided that one recalls that there were no fixed age limits for admission to (or graduation from) a certain level and that education at the primary level depended much on circumstances. The aims of the first stage were to teach basic reading, writing, and numeracy. The second-level teacher, the grammarians, trained students to read literary texts (particularly the poets) fluently, and reinforced grammatical and orthographical knowledge of the language. In schools of rhetoric, young men of the elite read prose (the orators and historians in particular), continued to study some poetry, and perfected their oral and written expression. These three stages formed what the ancients called the enkolpos paideia, that is, the “complete education,” which enveloped those privileged young men who had access to it until the end.3

IDENTIFYING A SCHOOL EXERCISE

By “school exercise,” I refer to students’ work written in school or for school at any of the three educational levels and to teachers’ preparations for their classes. In the category “school texts” I include works of literature and commentaries that appear to have been used in school contexts. Several factors often simultaneously contribute to identifying a school exercise: writing materials; features such as lines,
decorations, punctuation, and lectional signs, and types of textual material. These characteristics might point to an exercise even in the absence of indications from palaeography, but one can reach virtual certainty when the hand is a clumsy "school hand" or an accomplished "teacher's hand."

Writing Materials Used in School

The writing materials of school exercises do not differ significantly from those generally used in Egypt (which are covered in chapter 1), but the ways students employed them show some peculiarities (Cribiore 1996, 57-74). Parchment was used sparingly, unlike papyri, ostraca, and tablets. Both students and teachers wrote most of their exercises on papyri. Students did not have much chance of getting large, unused papyri of good quality. School papyri are often thick and rough and of mediocre if not altogether poor quality; they show marks of damage, such as missing fibers and clumsy attempts to repair them with patches. To have a papyrus for an exercise, a student might wash off writing or cut an unwritten part from a larger written piece. Students at elementary levels did not need much writing space and could make use of blank areas on previously used papyri. At higher levels of education, however, students wrote their work across the fibers on the back (verso) of papyri whose fronts (recto) already bore writing. Unlike beginning writers, they did not need to follow the horizontal fibers as guidelines and were able to write on a relatively less smooth surface.

Ostraca, both shards of broken pottery and pieces of limestone, were ideal for short exercises. Convenience rather than cost per se dictated their use: They were so readily available that one could overcome the relative disadvantage of their uneven surface. Students used them more at elementary levels than in later stages, and teachers wrote on them model alphabets that could easily circulate in class. The visible correlation between the size of an ostraco and the length of an exercise indicates that schoolchildren selected them according to the writing space needed. Not all ostraca with literary texts necessarily originated in school contexts. In most cases, though, this material points to an exercise: Scholars had no problem getting hold of papyri. In remote places such as the quarry settlement of Mons Claudianus and the Roman military praetorium along the road of Myos Hormos, ostraca were the principal writing material used for education and everyday matters. The good, literary level of the school ostraca found in the former fort prompted their editor to posit the existence of a schoolmaster who instructed children of military personnel (O. Claud. 1.79-189, and II. 429-416). Ostraca found in Krokodeilo and Maximianon also testify to some kind of basic instruction, but their level is below that attested in Mons Claudianus (Cuvigny 2003). It is impossible to know whether those who wrote them were children or illiterate adults and whether the instruction was imparted by a schoolmaster or by another adult with some education.

In comparison to other materials, tablets, which were made of wood, were considerably more expensive because wood was scarce in Egypt. No tablets from the Ptolemaic period are extant, and more tablets survive from the early Byzantine period than from the Roman age. Both wooden tablets and waxed tablets were used for educational purposes, either as individual pieces or joined together (up to ten tablets) to form "notebooks." Students used pen and ink to write on the wooden tablets, which could be covered with a coating that made the surface smoother and allowed the writing to be washed off to some extent. Wax tablets were hollowed out, leaving a narrow rim around the edges. This concavity was filled with wax, which was inscribed with a pointed stylus and erased with its spatula-shaped back. Since they could easily be reused, these tablets were popular at elementary levels, where the need to erase was frequent. Teachers and more experienced students wrote calligraphic exercises and grammar on wooden tablets.

Other Distinguishing Features

Special features such as lines, borders, and decorations of various kinds help identify a school exercise (Cribiore 1996, 75-96). Some of these had the practical purpose of dividing or highlighting sections, but others served only to embellish schoolwork. The common practice of writing words without separation (scriptio continua) made it necessary to employ reading and writing aids in the form of spaces, dots, and oblique strokes that divided syllables and/or words. Words in lists were often divided into syllables, and these same divisions are visible in passages of authors that still offered learners a challenge. Teachers found these divisions useful in the passages they wrote out for their classes. Models of this kind (e.g., ibid., nos. 292, 296, and 342) were most often written on tablets that might have been hung or circulated in the classroom. Since exercises, particularly in the Roman and Byzantine periods, presented poetic texts in continuous lines, without respecting colometry (superficially indistinguishable from prose), marks were often used to separate verses (Cribiore 1992). Finally, mistakes provide a strong argument for identifying a particular document as schoolwork. Slips of the pen and phonetic mistakes are also present in professional copies but often abound in exercises. Morphological errors in grammatical exercises distinguish them from copies written by grammarians, and syntactic mistakes indicate students' compositions.

School Hands and Teachers' Hands

The vast majority of "school hands," that is, the writing of learners, display obvious features caused by low speed and immaturity of handwriting (Cribiore 1996, 102-118). Large size, irregular alignment and margins, varying inclination of letters, and clumsy letter forms are evident to the palaeographer. It is possible to isolate four different types of hand according to their writing experience: the "zero-grade hand" is that of the complete novice; the "alphabetic hand" can be trusted for not more than
alphabets and is unable to bear the burden of longer texts; the “evolving hand” does a
good amount of writing and is moderately fluent but still displays a coarse and uneven
look; finally, the “rapid hand” is that of the older student and cannot identify an
exercise in the absence of other characteristics.

“Teachers’ hands may exhibit the large size that is characteristic of students’
hands (indeed, they may be even larger) but show fluency, regularity, strength, and
excellent legibility (ibid., 97–102, 121–128). They are not as rigid and formal as
“book hands” but display a considerable degree of beauty, that is, an attractive
evenness and precision of the strokes. “Teachers write letters of great beauty for the
children to imitate,” wrote John Chrysostom in the fourth century CE (MPG
59.385–56). The hands of models from Graeco-Roman Egypt are graceful and
elegant even though their style is often informal. Models are attested in both
literary and visual sources. In the absence of erasable blackboards and schoolbooks
with words separated, they were of great help both at the elementary and the
grammatical levels. Students could easily handle small ostraca with models of
alphabets without much risk of damaging them, but large and heavy ostraca
inscribed by teachers might have been displayed in the classroom (e.g., Cribiore

Types of Textual Material

Some examples point directly to schoolwork, but the papyrologist must also use
other criteria of distinction, particularly for textual materials at advanced levels of
education. Alphabets and the repetition of individual letters can represent teachers’
models and students’ and apprentice scribes’ practice. Much is still unknown about
the education of scribes, such as whether they followed a regular course of study for
some time or enrolled in scribal schools from the beginning (for scribes of Christian
texts, see Haines-Eitzen 2000). Scribes needed to have specialized training at a
certain point to learn different styles of writing and acquire the complex terminol-
ogy used in legal and bureaucratic documents. Since knowing the proper letter
sequence was presumably a prerequisite for their specialized training, exercises that
reinforced that ability were assigned to pupils at elementary levels. Combining
letters into syllables and mastering syllabaries was the next hurdle for these learners.
Syllabaries were more or less complete and elaborate combinations of consonants
and vowels; they exist in the form of teachers’ models and students’ exercises, full of
mistakes and imprecision. They were important in the teaching of reading and
writing (see Cribiore 1996, nos. 78–97). Authors such as Quintilian (11.13.30) and Plato
(Polit. 278b) emphasized the necessity of mastering all of the combinations because
they enabled a learner to proceed to words, phrases such as maxims, sayings and
single verses, short passages, and, finally, long passages of authors.

Lists of words also exist as models and students’ exercises. The vast majority
display words either divided into syllables or arranged in groups according to
the number of syllables and were intended to teach reading and writing. Word lists,
however, do not necessarily pertain to an elementary level of learning or automatically
indicate school contexts, and the papyrologist needs to distinguish carefully. Some
lists arranged by theme, such as mythological and heroic genealogies taken from
literary works, belong to more advanced levels of education (e.g., Cribiore 1996,
no. 390). When students were ready to go beyond single words, their writing assign-
ments started with limited amounts of prose and verse and evolved progressively into
extensive passages of authors. Elementary students wrote maxims, sayings of famous
men, and short excerpts from poetry. Students of grammarians copied or wrote (from
dictation) long passages, mostly from the poets. An important caveat: Identifying an
exercise at this point becomes more problematic since advanced students usually
possessed a trained (rapid) hand that is virtually indistinguishable from that of other
educated people and scholars.

Knowledge of textual materials can still help us to identify schoolwork at higher
levels of education. Compositions with mistakes of morphology and syntax unmis-
takably belong to school contexts. When they contain paraphrases and summaries of
Homer’s episodes and books, however, we must take into account other distin-
guishing characteristics in order to tell them apart from professional copies (ibid.,
nos. 344–357). The same is true in the case of scholia minora, Homer’s commentaries
that consist of lists of words taken from the Homeric text (lemmata) and accompa-
nied by the corresponding words in a more current form of Greek (glosses). In the
past these commentaries were automatically considered the products of school activity,
but the general educated public also needed such “translations.” Thus scholia minora
circulated as private copies and professionally produced books written in formal hands. While the exercises Cribiore included (ibid., nos. 325–343) seem to have originated in school settings, and undoubtedly many more copies
were used in educational contexts, it is impossible to tell them apart from those
consulted by the general public. Grammar was also a prominent subject in second-
ary education. Students read and copied parts of grammatical handbooks (technai)
and engaged in morphological exercises of declension and conjugation (ibid., nos.
358–378).

When a young man entered a school of rhetoric, his hand was fairly trained, his
spelling more secure, and as a rule he indulged less in decorations of any sort, so that it
is more difficult to recognize students’ work at this stage than before. In addition,
since the teaching of rhetoric was preeminent in Alexandria but only a limited
number of papyri from there have been preserved, the body of rhetorical exercises
at the papyrologist’s disposal is limited. Textual material greatly helps us to under-
stand how rhetoric was generally taught and practiced in Egypt, but one is hard put to
distinguish the work of students and teachers from that of amateurish practitioners of
rhetoric. Nevertheless, a substantial number of rhetorical exercises—different from
professional texts and orations actually delivered—are extant. They range from
preliminary exercises (progymnasmata) to whole declamations (meletai).
Books Used in School

The teachers' models functioned as books for copying and consultation leading up to the initial studies under the grammarian, when a student still needed help in decoding words. The fourth-century Christian writer Basil of Caesarea (Hymnis dicta tempore farnis et siccatiatis 67c) mentions some students breaking in anger the tablets that belonged to their teacher. It is reasonable to suppose that many of the tablets found in Egypt were the property of teachers who lent them to students. One might conjure up a scenario in which the ownership of tablets and some degree of literacy were the simple prerequisites for a primary teacher to set up a school. Yet, papyrus books (biblia) that presented material in simplified ways also existed. The literary and papyrological sources indicate that students used books at higher levels of education. A few letters on papyri are illuminating in this respect since they casually allude to schoolbooks of various kinds (PGiss. 85; SB III 7268; POxy. III 531). Identifying such texts, however, is not easy. Even though there was not a large market for books with special features (because the models adequately covered those needs), some exceptions exist (Cribiore 2001b, 137–143). In a few papyri the written text shows spaces between words and a very legible handwriting (e.g., P.Ryl. III 486). In another papyrus with a text on the labors of Heracles written with gaps between the words, colorful illustrations indicate that it probably addressed a young audience (POxy. XXII 2331). Since Homer was heavily present in ancient education, most examples of school texts can be found among Homeric papyri that exhibit dots or vertical dashes to separate the words (e.g., MPER n.s. III 3) and/or an unusual wealth of accents and other lectional signs. This is particularly true when the accents were added, sometimes clumsily, by the hand of a student who was doing an exercise in accentuation (P.Lond.Lit. 28). As noted earlier, texts with scholia minora and grammatical handbooks were in use in the grammarian’s classroom.

Learning according to the Papyri

Approaching Literacy

The school exercises and the few school texts from Graeco-Roman Egypt are little more than precious outlines of what went on in an ancient classroom. Education was largely oral and thus is mostly out of our reach. Yet, starting from the extant remains and taking into account a few vivid papyrus letters written by parents and students, archaeological findings, and the information that the ancient writers handed down, we can hope to fill in the picture to a large extent. In considering teaching methods, we must keep in mind that bilingualism (or diglossia) constituted a hurdle for students at every level of education. In Egypt, as in other provinces of the empire, many individuals, who in their daily lives functioned in the indigenous language, learned Greek in school. Those who were exposed to Greek at home were in a privileged condition for learning but had to confront the fact that the koine Greek of their daily life differed significantly from the Attic Greek they encountered in school. Learning methods and teaching aids had to take this reality into account and remedy the lack of books that could easily be consulted, as well as the absence of tables of contents, indices, library catalogues, and the like.

One way to cope with these disadvantages was to enforce an extremely thorough mastery of the alphabet, which became as flexible as the numerical order and was used as both a mnemonic device and an organizational tool. Teachers discouraged rote memory of the alphabet and made up exercises that consisted of following other alphabetical sequences: skipping a fixed number of letters, proceeding from the bottom up, and pronouncing tongue twisters made up of alphabets in scrambled order. In addition, the maxims that served as copying exercises sometimes formed alphabetical acrostics; the syllabaries inculcated ways to combine letters; and words were listed in alphabetical order, which was used as a mnemonic device. Strengthening the memory was a constant concern. More advanced students not only memorized texts word for word but also practiced mnemotechniques in rhetorical school (Blum 1969; Small 1997).

The papyri contain examples of the rigid teaching method attested by the literary sources that taught reading and writing by means of building blocks (letters, syllables, words, sentences, and passages). Yet the school exercises from Egypt indicate that this sequence was not universally followed. In order for students to practice handwriting, teachers made them write their names and copy verses and texts of very limited extent as soon as they learned their letters (e.g., Cribiore 1996, nos. 136, 160, 202, 383, 403). These students could not read what they had copied but proceeded blindly, committing every sort of mistake and omission (Cribiore 2001b, 167–172). This copying method apparently became more popular in the late Roman and Byzantine periods and sometimes coexisted with the traditional method. It was particularly useful to those who were in school for only a short time because they could thus acquire a limited literacy that enabled them to perform in a society in which most people were somewhat familiar with reading and writing (Hanson 1991; Bowman 1991). The painfully written subscriptions of the so-called slow writers and an example such as that of Petaus, a town clerk who could not read but passed himself off as literate, are eye-openers (Youtie 1966).

The cultural content of an elementary education was very limited: Some maxims and sayings (sometimes by Isocrates and Menander) and a few verses of Homer and Euripides were powerful symbols of literacy. The elementary package also included numerical literacy. Since the letters of the alphabet, with the addition of three more signs, functioned as numbers, it was always assumed that numerical
operations were part of the first phases of instruction. The mathematical exercises found in Egypt, however, allow us to make a few distinctions (Cribiore 2000b, 180–183). Students rarely wrote down additions, which they might have recited aloud, and engaged in written multiplications and fractions only when their handwriting was fairly proficient. Many tables of fractions exist, but most of them are capably written and were either hung in offices to facilitate computation or used as teachers’ models. Elementary students mostly learned mathematical operations by memorizing these tables. Extensive and advanced mathematical work was part of the teaching of specialized schools.

Christian education was closely modeled on pagan Greek formation and progressed through the same stages. Besides studying the traditional classic authors, however, students also copied and learned by heart the Psalms and passages from the Scriptures (e.g., Cribiore 1999, no. 405). From the third century on, Coptic schooling also used religious texts for practice and, like Greek education, entirely ignored Pharaonic culture (Cribiore 1999). Students likely learned the Greek and Coptic alphabets at the same time, but it is difficult to ascertain whether the teaching of the two languages proceeded simultaneously as the student advanced. A characteristic of Coptic education was to teach beginners to write the opening and formulaic parts of letters, therefore addressing practical needs. Epistolary texts were not used as copybooks in Greek school contexts. Since there are no evident remains of advanced Coptic exercises, the highly rhetorical style of authors such as Shenoute and Besa in all probability originated from their exposure to patristic literature and Greek rhetorical education.

I have referred so far to “students” and “teachers” generically, but education was open not only to males. Girls also had access to primary instruction, but boys were the vast majority. The disproportion became more pronounced in grammar schools, though a number of girls of the upper class also attended, as certain papyrius letters sent by women attest (Cribiore 2000b, 74–101; Bagwell and Cribiore 2006). Rhetorical training, the last stage of the enkyklios paideia, was in any case closed to female students because it was envisioned as preparation for public and political life. Low-level teaching was not entirely in the hands of male teachers. The literary sources disclose little about women teachers and completely disregard female primary teachers, but the papyri indicate the existence of a few of them. Even though, like their male counterparts, these teachers appear by their title (deskales or deskalē) in documents that do not reveal anything about their didactic activity (e.g., P.Mich. VIII 464, P.Mich. II 135, and BG U 1 332), their presence per se is a significant testimony that education in antiquity was not entirely out of women’s reach.

**Strengthening the Language**

Students who entered the grammarian’s class developed and amplified knowledge previously acquired. This common educational principle reached paradoxical proportions in the ancient world. The grammarians’ students already knew that the elements of knowledge fitted precisely into a grid and were tightly connected like the links of a chain, and they soon realized that multiple connections existed with the previous level. With their divisions and sectional signs, the teachers’ models provided necessary help to the inexperienced student who read slowly, by syllables and words. They formed a transition to the texts in general circulation, which were less “user friendly.” Education proceeded in a circular fashion, so that the more advanced students revisited texts they had previously encountered. Their reading now was more fluent, and the questions they had to answer about a text were more thorough and diverse, but most of the authors they dealt with were those they had met before.

On the whole, the school papyri agree with the literary sources with regard to the authors studied under the grammarian, but they are less helpful in identifying the reading list of an advanced student whose hand was experienced (Cribiore 2000b, 192–204). This, for instance, is the reason that Hesiod does not frequently appear among the school papyri, although the educational writers attest to his presence in the schoolroom, and the extant papyri that preserve his works are quite numerous. Homer was the author that students came to know in detail, and the thousand or so extant Homeric papyri confirm his popularity among the cultivated public. Both students and the general public vastly preferred the Iliad to the Odyssey. The grammarians read the first six books of the Iliad in detail, and their more advanced students went through the whole work. Ancient teachers always concentrated on the beginning of an author’s work; thus, the first two books in particular were the subject of a meticulous analysis. Euripides was a major presence in education, whereas other tragedians were overlooked. He was linguistically more accessible, and his most rhetorical plays (Phoenissae, Orestes, Hecesta, Medea, and Alcestis) continued to occupy students in a school of rhetoric. The popularity of Phoenissae was uncontested from the time pupils wrote maxims to improve their penmanship until they engaged in composition exercises (Cribiore 2000a). The maxims of Menander also accompanied students from the beginning to the end, up to the time when they learned to develop them with the rheto, and Menander’s plays, copied with many mistakes and corruptions by students and teachers alike, appear among the P. Bodmer. Menander’s monostichoi continued to enjoy a vast popularity in the Byzantine period, but his comedies lost favor. Teachers at advanced levels preferred Aristophanes, who was more interesting linguistically. Thus Zuntz (1975) has shown that marginal notes in late papyri of Aristophanes derive from schoolbooks (e.g., P.Oxy. VI 856). The presence of other poets in the schoolroom is more difficult to verify. Some works by Callimachus, Theognis, Sappho, Hipponax, and Pindar surface but very sporadically because of the usual difficulties in identifying advanced schoolwork.

Did the grammarians concentrate exclusively on poetry? Undoubtedly this was their traditional area of expertise, but they also taught reading, writing, and
grammar with the aid of fables and some Isocrates. One again sees the wide application of the educational principle of making a pupil revisit the same texts at subsequent levels. Present at all stages of education, fables were the basis of the first rhetorical exercises. Likewise, elementary students copied short excerpts from the Cyprian Orations of Isocrates (Ad Demonicum, Ad Niconem, Nicones); read more extensive passages under the grammarian with the help of professionally produced books; and, with the rhetor, developed maxims from these orations. A book of tablets containing these three speeches, summaries, and lexical notes squeezed into the margins is the product of the grammarian's schoolroom (Worp and Rijksbaron 1997).

Isocrates remained enormously popular at all times. Among seven Byzantine school tablets, which date mostly from the seventh century and preserve Greek and Coptic texts, one tablet dated to 470 CE displays a model and a copy from the Ad Demonicum and a list of months (Duttenhofer 1997). Before writing down the model, the teacher exhorted the pupil, "Pay attention. I wrote in nice letters." Likewise, a passage from Nicones, written from dictation in the sixth century on the back of a protocol, testifies to the continuous attraction Isocrates exercised (Lundon and Messer 2000). Because of the heavily gnomic (that is, moralistic and didactic) content of these three orations, they were also very well liked by the general public. They make up about half of the papyri of Isocrates. While ancient authors suggest that students at this stage paid more attention to reading literature than to writing, the papyrological sources indicate that they practiced epistolary writing (as some letters sent to families show) and later perfected their skills with the rhetor (Cribiore 2001b, 215–219).

The papyri allow us to enter the grammarian's schoolroom and glance at all aspects of its activity. Since Homer was the author par excellence, let us follow the grammarian's teaching by focusing on some of the Homeric exercises. As I have already said, metrics was an area of fundamental interest, so students had to do exercises in accentuation. In a Roman papyrus, a student wrote down only the first half of each line of Odyssey 2.122–150, producing two crowded columns separated by a thick, rough line. In an exercise that probably also involved memorization, the student used the papyrus very economically to show his knowledge of the lines up to the caesura (Cribiore 1996, no. 39). A grammarian had to elucidate all of the words in the Homeric text, thereby producing "historical notes" (historiai), that is, details on the mythological matters, persons, places, and events mentioned. Two fragments from a third-century papyrus preserve a student's exercise: names of Achaean heroes from the Iliad, together with their fathers and mothers and a list of gods with their genealogy (P.Oxy. LXV 4460). The content, the evolving hand, the decorated title, and the long lines that separate the sections mark this as a product of the grammarian's schoolroom.

Another evolving hand wrote on the verso of a Roman account (P.Oxy. LV 3829). The student in question committed several mistakes and corrected some of his clunky letters by rewriting them above the line. This papyrus spotlights a series of school activities. It contains the end of a catechism (questions and answers) that listed the characters of the Iliad; a narrative concerning the events leading to the Trojan War (including the judgment of Paris); Iliad 1.1; and a summary of that book. The first section with érëtémata allows us to perceive the oral side of the grammarian's teaching. A student had to demonstrate his knowledge by answering various questions, such as on the identity of Hector's advisers or on the seers who appear in the Iliad. The question-and-answer format was extremely popular in late antiquity and in the Middle Ages to systematize knowledge in various fields, such as medicine and grammar, into easily assimilated parcels. It seems to have originated as a pedagogical tool in the Roman schoolroom.

The grammarian's practice of explaining all historical and geographical details often went to extremes. His students learned much information that bordered on the useless and paid attention to the minutaiae in a text rather than to the meaning and themes of the whole. But in one area the grammarian's pedantic focus on details was necessary. The linguistic background of the students made elucidation of unfamiliar Homeric vocabulary imperative. Students who already had trouble with the Attic Greek they encountered in school needed even more help in decoding Homeric terminology. Scholía minora to Homer provided an elementary commentary that they had to consult and copy. It is not surprising that these are more numerous for the Iliad than for the Odyssey since teachers and the general public were more interested in the former. The grammarian focused on the first book of the Iliad, for which he provided glosses that covered the text almost in its entirety. An exercise with scholia minora to a few lines of book one carries us into the midst of the classroom and shows how students at every level read according to syllables and not to whole words (Cribiore 1996, no. 339). A student apparently first copied the whole column of the lemmata and then the glosses in a parallel column. He was following a model and wrote down only the first syllable of each gloss and interrupted his work after five lines.

Once the class had assimilated the vocabulary of the first book of the Iliad, the grammarian could zero in on other difficult terms in a variety of books, thereby providing a sparser commentary. Consider, for example, a fragment of a roll with Iliad 5.24 written by a teacher: The glosses accompany a text reproduced in its entirety and provide an easily consulted Homeric dictionary (ibid., no. 330). In compiling their vocabularies to Homer, grammarians used glossographical material that had an ancient, scholarly origin, but the erudite scholia vetera that appear in some Homeric manuscripts have a different scope and tone. Grammarians felt free to modify and integrate that ancient exegesis; as a result, the scholia found in Egypt also provide their personal contributions. This elementary glossographical material was assimilated into a Byzantine compilation, the so-called D-scholia, which offered every kind of Homeric exegesis, such as paraphrases and summaries of Homeric books, mythographical material, and inquiries (ézértémata).
into certain questions. Mythographical notes are found in a number of school papyri (e.g., ibid., no. 183). Montanari (1995) has shown that teachers consulted an ancient commentary on mythological subjects, usually called *Mythographus Homericus*, which circulated in scholarly and scholastic circles.

The technical aspect of grammar had very likely always been a part of the grammarian's teaching, but the fact that no grammatical exercises and texts have survived from the Hellenistic period cannot be only the result of chance. The Alexandrian scholars worked on systematization of parts of grammar, but only from the beginning of the Roman period did grammar become codified into a body of knowledge that was transmitted separately. It is not a coincidence that texts containing *scholia minora* appeared in the same period and not before. Until then the need to classify grammatical terms and forms was not felt with the same urgency, and the understanding of the Homeric text was less deficient. Linguistic tools were increasingly more necessary to approach the ancient authors and grasp the nuances of poetry. Grammatical manuals that treated the parts of speech started to circulate (Wouters 1979), but their influence on schoolwork seems to have been limited. Up to the fourth century, the papyri that preserve parts of handbooks used in school differ from the *Technē* of Dionysius Thrax, a grammarian who wrote around 100 BCE (see, e.g., Cribiore 1996, nos. 358, 359, 362, 368, 371, 373). The authenticity and dating of the body of this text as it was transmitted are still under scrutiny (e.g., Law and Shrier 1995), but it is clear that it became the standard school text only from the fifth century on. In the previous period, grammarians had to rely on the work of their predecessors and adapt it to their pedagogical needs. A papyrus from the first century, which provides definitions of genders, numbers, and types of nouns, well exemplifies this trend (PSI inv. 505; Di Benedetto 1957). This manual was either a cheap professional copy or a copy made by a teacher and follows the question-and-answer format throughout.

Learning Rhetoric

The training of a young man of the elite who entered a school of rhetoric relied heavily on what he had learned with the grammarian. Knowledge at this stage was organized according to the customary inflexible order in links of progressive difficulty, each connected to the one before and to the next (Cribiore 2000b, 220–244). Thus *progymnasmata* expanded the knowledge of poetry already acquired and concentrated on Homer and the *Ilid* in particular. In practicing exercises such as those of praise (*encomium*), blame (*psogos*), impersonation (*éthopoia*), and description (*éphrai*), a student improved his skill in writing, expression, and observation. At a higher level of expertise, he could incorporate some *progymnasmata* into the composition of declamations (*meletai*) on deliberative and forensic subjects. Theon of Alexandria composed a handbook of preliminary exercises in the first century (Patillon 1997), and in fourth-century Antioch, the sophist Libanius wrote *progymnasmata* as models for his students (Foerster 1963, vol. 8).

While most of the exercises in these and later collections correspond to those found in the papyri, students in Egypt practiced especially *éthopoia* and *encomia*. It is important to note, however, that most of the exercises on papyrius are in verse (epic hexameters and iambics) even though the various literary collections contain examples only in prose as preparation for rhetorical discourse. It seems that rhetorical training not only was based upon previous knowledge of the poets but also reinforced and expanded students' poetic skills. The student who wrote an exercise of impersonation followed the text of a certain author but lingered on a mythological or literary figure's reaction to a specific event, reporting, for instance, the words of Phoibe reproaching Achilles or those of the latter at the point of death. An *éthopoia* did not require much originality, but it was very useful to practice the *éthos* of several characters, a skill a student needed because he would never appear in his own persona in historical and argumentative declamations.

*Encomia* found in Egypt are very similar to those that appear in rhetorical textbooks and did not focus only on mythological subjects. Consider, for example, the encomium of the fig, which was supposedly the favorite fruit of Hermes, the god of rhetoric, and sports a heavily decorated title (P.Oxy. XVII 2084), or the praise of the horse in another papyrus also found at Oxyrhynchus (P.Oxy. LXVIII 4647). Praise of various persons and gods was a traditional subject. A Roman exercise preserves an encomium of Dionysus that extols him on the occasion of a certain celebration. Its irregular, rapid hand and the general presentation point to a teacher's model rather than to the composition of a rhetor that was actually delivered (P.Köln VII 286). As Libanius shows (e.g., *Ep.* 63), speeches of praise were useful to the student who stopped at this level of rhetorical education and could use this skill to compose panegyrics of officials. Rhetors and poet-grammarians often engaged in similar exercises and competed in public contests and festivities (e.g., P.Oxy. VII 1015).

Young men who continued in their education faced rigorous training. The theory of "issue" (*stasis*), which governed the composition of declamations, was a formidable, demanding system. In the preliminary exercises, a student had used building blocks to construct relatively short pieces, but now he had to follow painstakingly detailed instructions to learn to construct arguments and cases. In spite of limitations, this system helped develop verbal skills and the capability of analyzing the pros and cons of a case. The traditional Roman division of declamations into *suartiae* (on imaginative, deliberative themes) and *controversiae* (fictitious legal cases) was not followed in Greek education, where declamations were distinguished as either historical or fictive. In Egypt, in any case, historical declamations were much more common, and examples of fictive *meletai* are rare. The random chance of survival and the preservation of only a few Alexandrian papyri might be responsible for that, but one should not rule out the possibility that
sophists in Egypt taught rhetoric mainly through literary texts (historical and oratorical) and avoided fictitious legal themes. A young man who wished to practice law could learn on the job or go to a school of Roman law either in Alexandria or abroad, particularly to the renowned school of Berytos (Beirut).

In the late Roman period, a change in the training of the advocates occurred, and the education acquired in a school of rhetoric became increasingly insufficient. Most young men who aspired to jobs in the administration opted to learn Roman law. A knowledge of some Latin, therefore, became mandatory, and the so-called Latin school exercises found in Egypt are evidence of this. They consist of bilingual glossaries and bilingual lists of authors. Most of the glossaries are transliterated; that is, they are written entirely with the Greek script (Kramer 1983, 2001). The vast majority of the bilingual word lists are from the Aeneid and show either the whole text or isolated words rendered in Greek. A few bilingual books also contain texts of Cicero, Juvenal, Sallust, and Terence. The script of these glossaries and lists consists of either fluent, cursive hands (those of teachers perhaps or of lesser scriptoria) or the formal hands of professionally produced books (Cribiore 2000-04). It seems, therefore, that these were not exercises written by students but were more or less formally produced books on which they practiced their reading skills. It is likely that a veneer of Latin was sufficient to enter a school of Roman law.

In conclusion, the contributions of the papyri to our knowledge of education are many. They beautifully illustrate what the ancient educational writers have handed down regarding the methods and stages of teaching and at the same time allow us to glimpse real students and teachers whose actual work was preserved. They are evidence that iron rules systematized knowledge and a strict curriculum governed the various stages of education; when its traces are faint, it is only because of the difficulty of identifying the work of advanced students. But the papyri also provide important correctives to the literary sources. They show that elementary training served both the student who was going to continue his schooling and the one who dropped out and that education, for all its rigidity, never lost touch with reality. Likewise, it appears that grammatical education not only exposed students to the poets and rules of grammar but also gave them the ability to express themselves in letters sent to family members, a skill that they perfected at later stages. While modern educational theorists have maintained that poetry was exclusively the province of the grammarian and that the rhetor taught only prose (e.g., Marrou 1975, 296), the papyri provide a more nuanced view of the transition between the two levels and prove that poetry continued to interest the student of rhetoric. The numerous rhetorical exercises in verse point neither to an eccentric phenomenon nor to the exclusive predilection of the Egyptians for poetry but confirm that poetry was cultivated everywhere at high levels of education, particularly in late antiquity, though only the sands of Egypt offer us remnants of actual school contexts.

NOTES

1. Morgan (1998) needs to be used with some caution, especially for matters concerning higher education. In what follows, I identify exercises by the numbers included in Cribiore (1996) and refer to full bibliographic references only for items that have appeared subsequently.

2. Especially Zacharias Scholasticus and Damascius; see Kugener (1903) and Zintzen (1967).

3. I cover neither philosophy, which was outside this circle, nor specialized areas of knowledge such as higher mathematics, geometry, and astronomy.

4. Apprentice scribes did most of the exercises in copying parts of personal and official letters that are included in MPER n.s. XV. For scribal practice at a higher level, see, for example, P.Köln VII 298, and P.Oxy. LXVIII 4668.

5. In describing the steps involved in the teaching of reading and writing, modern historians rigidly follow the accounts of ancient authors such as Augustine, De ordine 2.7 (242); Ambrose, De Abraham 1.30; Manilius, Astronomica 2.755-764; Jerome, Ep. 107.4 and 128.3; and Gregory of Nyssa, De beneficentia 5-13.

6. To the lists in Cribiore (1996, nos. 98-128), add Di Bitonto-Kasser (1998), a model that was reused for cartonnage.

7. Cribiore (1996), whose main interest was to show the various stages in learning to write, included only a few exercises at this level that showed a deficient hand. Morgan (1998) relied only on these; consequently, her treatment of rhetoric in Egypt is incomplete.


9. Apprentice scribes practiced fractions and extensions extensively, as many exercises in MPER n.s. XV show. They also wrote down tables of weights, measures, and the like; see, for example, P.Köln VIII 352.

10. On his presence in school, see Cribiore (1996, no. 386) (Hesiod as copybook), ibid., no. 390 (in a list of words), and P.Oxy. LXI 4059 (mythographic lists). See also P.Oxy. XXIII 2355, a school text. According to the LDB, the papyri of Hesiod number 155.


13. See Cribiore (1996, 344-357). See also, for example, PRI XIII 1503; P.Harr. 14; P.Ryl. III 487; O.Bodl. II 2171; P.Köln VII 286; and P.Oxy. LXVIII 4647.


15. On rhetorical treatises found in Egypt see, for example, P.Oxy. III 410; P.Oxy. 3708; and P.Harr II 106. Examples of historical declamations are BKT VII 4-13; P.Oxy. XXIV 2400; VI 858; II 216; XV 1795; XLV 3235 and 3236; P.Harr II 105; P.Lond.Lit. 135; and P.Hrb. 1.15. Examples of fictive declamations are P.Lond.Lit. 138; P.Oxy. III 472; and P.Harb. III 265 (in Latin). The themes of the historical declamations found in Egypt are largely from Athenian history in the period of Demostenes and following the death of Alexander.

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