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The Genealogy of the Textbook as an Educational Form: Orality and Literacy in Education

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The Genealogy of the Textbook as an Educational Form: Orality and Literacy in Education

Norm Friesen

In this paper, I provide a short but broad history of the textbook as a multimedia pedagogical and cultural form. In doing so, I pay particular attention to the interrelationship of oral and textual media and cultures, highlighting the ways that these two communicative modes are reconfigured over the history of this pedagogical form. I also situate the textbook in the context of changing instructional methods and practices, and demonstrate that instructional forms and practices have neither progressed along with new technologies nor gradually evolved from a primitive orality to sophisticated literacy. Instead, I show that these practices as well as textbook media change much more in synchrony with larger cultural and epistemological developments—such as those identified by Michel Foucault, Friedrich Kittler and other historians of media and culture.

Introduction: Genealogy, Discourse Networks and the Textbook *avant la lettre*

The textbook is generally regarded as embodying education at its worst. Textbooks are called boring, passé, even obsolete. It is not despite, but *because* of this reputation that the textbook is the subject of this paper, and that this paper calls itself a genealogy. As Foucault describes it, a genealogy is a historical analysis that seeks phenomena

> in the most unpromising places, in what we tend to feel is without history—in sentiments, love, conscience, instincts; itmust be sensitive to their recurrence, not in order to trace the gradual curve of their evolution, but to isolate the different scenes where they engaged in different roles. (1980, p. 139-140)

The different "scenes" and "places" that are important in this paper are those of the lecture hall, the classroom, the church, the nursery and also the historical bourgeois family. These are sites, as this paper shows, where both oral and literate practices and forms have been brought together in different combinations. These combinations, in turn, are understood here in terms of "inscriptive" or "discourse" networks. In his *Discourse Networks, 1800/1900*, a work that owes much to Foucault, German media theorist Friedrich Kittler describes these as

> Network[s] of technologies and institutions… [that] allow a given culture to select, store, and produce relevant data. Technologies like that of book printing and the institutions coupled to it, such as literature and the university, thus constitute a historically very powerful formation… (1990, 369).

The questions I address in this context, then, are: "What are the very powerful formations in which the textbook as a genre has operated? And: Through what configuration of oral, textual and other media does the textbook remain valuable in education today?"

Although Foucault's and Kittler's approaches have some affinities with media ecology as "the study of *media as environments* and… of… *environments as media*" (Newton, 2015, emphases in original), this paper presents evidence that puts into question a number of prominent media ecological theses: First, that the media environments of orality and literacy are fundamentally at odds or are competing in a kind of zero sum game. In Ong (1982), Havelock (1986) and elsewhere (e.g., McLuhan 1963), orality is seen as gradually ceding ground to literacy starting with Classical Greece, with new technologies like radio, TV and multimedia only very recently reversing this trend—producing what on calls a "secondary orality," (Ong 1986, p. 11). In its examination of the history of the textbook, this paper instead makes the case that oral and written forms have long been intertwined with and indispensable to one another. Second, it sees a more particularized type of historical periodization as being appropriate to the study of the oral and literate than is common in media ecology. Instead of Ong's triumvirate of primary orality, literacy and secondary orality—or McLuhan's "oral," "alphabetic," "typographic" and "electronic man"—this paper's examination of the late medieval and modern eras follows a four-fold chronology outlined in *The Order of Things* (Foucault, 2006) and *Discourse Networks: 1800/1900* (Kittler, 1990). It begins with a late Medieval or early Modern period that Foucault referred to as "Renaissance;" its proceeds through Foucault's "classical" and "modern" eras (1660-1800 and 1800-1900, respectively), and it gives special emphasis to Kittler's idea of a break in 1900 marked by the introduction of electro-mechanical technologies (e.g., gramophone, film, typewriter). For both Foucault and Kittler, each of these periods

presents its own particular way of constructing, storing and transmitting knowledge—what Kittler called an "inscriptive network" and Foucault, an *episteme*. Additionally, changes marking one period off from another are seen by both as mediated through culture, rather than determined directly by the materiality and mode of production of media forms themselves. Finally, instead of relying on media ecology's psychologistic emphases on "consciousness" or "psychodynamics"—and in keeping with the work of Foucault, Kittler and contemporary historiography of media and culture (e.g., Herzogenrath 2015)—this paper eschews such references. Instead of speculating about the awareness or psychology of people of the past, it takes up the rich documentary evidence provided by historical texts and images.

To thus trace the paths taken by the form or genre of the textbook in both late medieval and early modern Europe, it is important to note that the word "textbook" itself, at least in English, can generally only be applied anachronistically. In this sense, the "textbooks" of the Protestant Reformation, for example, were actually textbooks *avant la lettre* (before the word)as were standard texts from Christian and Classical antiquity that served textbook-like functions in universities. It is this latter type of textbook that is evoked in one of the earliest occurrences of the term in the English language—from 1730—as Marshall McLuhan, citing the *Oxford English Dictionary* explains:

> "N. Bailey Dict. Britannicum (folio), Text-Book (in Universities) is a Classick Author written very wide by the Students, to give Room for an Interpretation *dictated by the Master*, &c. to be inserted in the Interlines." Before printing, much …time in school and college classrooms was spent in making such texts. The classroom tended to be a scriptorium with a commentary. The student was an editor-publisher. (1964, p. 158)

Here, "very wide" refers to the space of the lines of the text by the "Classick Author," recorded by students by hand in the 17th and 18th centuries (Foucault's classical age). In between these lines, students would later write down the interpretation dictated by the master.

Regardless, the definition of the textbook above highlights some elements that in isolation remain central to the textbook today: First, there is the connection of the textbook with the lecture, and with student note-taking and study practices. Second, and more abstractly, there is the interplay of both *textual* and *oral*[1] media or communication in this form. The words spoken by the "master" or lecturer are said to be dictated to the students, and students at this time would take relatively slavish notes, often word-for-word, in-between the lines of their classic text. It was also around 1730 that lectures came to be increasingly dominated by the interpretation of the master—otherwise known as glosses or commentaries—on a text by a "Classick Author."

[1] Here, I understand "oral" and "orality" as defined by the Oxford English Dictionary: "The quality of being oral or orally communicated; preference for or tendency to use spoken forms of language." Orality, or the spoken or verbalized word is in this sense defined in relation to that which is written, textual or requiring textual literacy. Accordingly, I understand outward as well as inward speech or verbalization as also being a fundamentally "oral" phenomena. In this sense, I depart slightly from prominent definitions, for example, by Ong and Havelock, which understand orality in terms of "the psychodynamics of primary oral cultures, that is, of oral cultures untouched by writing" (Ong 1982, pp. 31; for example, those of Homeric Greece, Havelock 1986, pp. 79-97). Of course, despite their emphases on its prehistoric origins, both Havelock and Ong see many instances in Western history where "the oral spell [is] …reasserted" (Havelock 1986, p. 31) or "distinctively oral forms of thought and expression linger" (1967, p. 22)—for example, in "the rediscovery of rhetoric" via the radio (Havelock 1986, pp. 31-34) or in liturgical practices of reading aloud (Ong 1982, pp. 72-73). Understood in terms of such reappearances and remainders, the conception of orality subtending this paper's assertions can be seen as broadly congruent with those of the media ecological cannon.

Figure 1: 1736 image of the university lecture by the satirist William Hogarth (from the same timeframe as McLuhan's example). It is illustrative in a number of ways. First, the orator reading directly from a text (titled *Datur Vacuum*, "a vacuum is granted") highlights the importance of oral delivery and the plausibility of word-for-word dictation in the lecture itself still at this late date. Second, in thus depicting a direct reading of the text, and without any listeners taking notes, this image illustrates the variation in practice that characterizes the history of pedagogical practices generally. Educational change hardly happens in lockstep. Finally, it suggests the widely acknowledged relative decline of the university between the 16th and 18th centuries (e.g. see: Clark, 2006; image courtesy of Wikimedia Commons)

The Medieval Textbook: The "Classick Author's" Text Itself

However, to tell a more complete history of the textbook, it is necessary to also focus on its history the *before* 1730, specifically during Foucault's "Renaissance.". At this time, oral and textual elements of the lecture were interrelated somewhat differently than in McLuhan's dictionary definition. It was not the *gloss* or *interpretation* of the work by the "Classick Author" that was spoken aloud and recorded in writing—it was instead the text of the classic work *itself*. Much "time in school and college classrooms" was indeed spent, as McLuhan says, "in making such texts." Or as Kittler puts it, in this era, the lecture worked to transport "classical antiquity to the High Middle Ages, but also constituted a kind of hardware, a storage device just as precious as our hard drives" (Kittler, 2004, p. 245). In the chirographic, manuscript culture of the late Medieval and early modern ages, it is possible to say that to lecture was to read, and also, to read was to read aloud and in this sense, to *lecture*. (The word for "reading" in Latin is *Lectio*, after all.) Lectures attended by late medieval students, for example, were sometimes referred to simply by the title of the book that was read, and students were required to "hear" the most important of these books more than once (Thorndike, 1944, pp. 53-54). Their content was thus not only inscribed on students' verbatim notes, but also in these students' memories (Friesen 2017, p. 137). Ann Blair, author of *Too Much to Know: Managing Scholarly Information before the Modern Age* (2011) explains further:

> Teaching in the medieval university involved different oral exercises and associated writing... medieval students engaged in various kinds of note-taking from oral teaching, including making minor changes to a ready-made text brought into class, taking more or less sketchy *reportationes* [detailed notes] of oral teaching delivered at higher than dictation speed, and copying out under dictation the full text of a course. (2008, pp. 44, 46–47; see also Ong, 2005, p. 308)

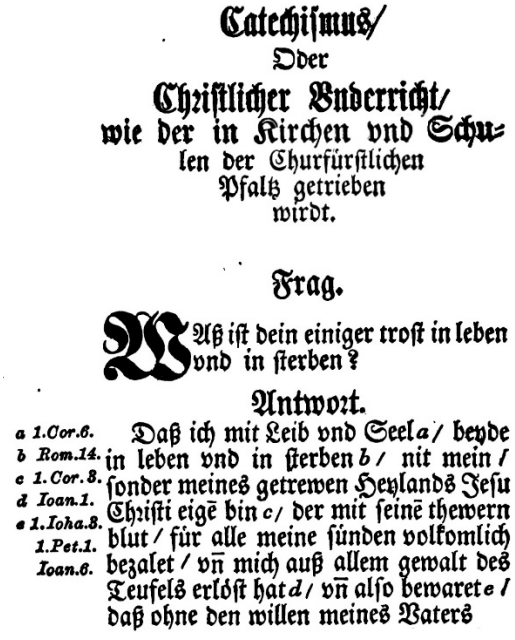
At a time of "drifting texts and vanishing manuscripts," as Elizabeth Eisenstein puts it, knowledge, especially early in this period, was *retrieved* from the biblical and classical past. The lecture hall, professorial dictation and student note-taking formed the site of its preservation and reproduction. Despite the emphasis on orality frequently associated with the Middle Ages in general, it was these classic texts that were granted the greatest value and authority (Illich, 1996). It is only at this early stage that the university classroom represented "a scriptorium with a commentary," and the student, "an editor-publisher," as McLuhan puts it. It is onnly much later that the lecture moved from the chirographic priorities of manuscript culture, and began to take advantage of the "information explosion" of the print era (Blair 2011). It took until the 18th century, perhaps more specifically, until around 1730, for the lecture to cease being simply a reading or dictation of "Classick author's" text to become a matter of gloss and commentary on a more widely available text.

The Catechism: The Popular Re-Affirmation of Orality via Print

The use of the textbook *avant la lettre* in local languages and in popular *children's* education—rather than in the classical Latin of the elite universities—manifests a similarly unexpected configuration of the oral and written. Historian of literacy, Ann-Marie Chartier asserts that in early-modern Catholic and Protestant educational practice, "learning to pray and learning to read were the same thing." She explains:

> Learning to read …bore sense only in that it was useful to ensure the population's elementary religious knowledge. The tools for reading were no other than prayer and catechism books. In both Protestant and Catholic regions, the method of learning was the same: From texts already known by heart, because learnt orally within the family or in Church service, the teacher made children break down words by making them spell the letters and pronounce the syllables. In fact, the young reader connected the signs identified in the page with the text he knew by heart. (2006, p. 455)

This particular configuration of literacy, although it also relies heavily on dictation and memory, is one that necessarily requires the technology and networks of printing: Word-for-word knowledge of common passages for children from all walks of life presupposed the establishment of printing centers which could reproduce texts flawlessly and on a mass scale. In this context as well, the textbook, and also notions of literacy and even reading, can only be applied anachronistically: To be "literate" for much of the 15th and 16th centuries in Europe was simply to be able to read and recite particular prayers and a particular creed; at most, it was to be able to read the Bible. Writing was generally not taught, and to write anything beyond one's own name was exceptional (Chartier, 2006). The rubric under which prayers and creeds—together with key biblical passages—were generally brought together was the *catechism*. And it is in reference to one key biblical passage integrated into his *Smaller Catechism* that Luther makes one of the first references in German to the "textbook" (using the diminutive form, *Lehrbüchlein*). As the word Catechism suggests, such a book not only brings key doctrinal texts together, it also implies a catechetical way of structuring oral performance and memorization. This takes place through a set of questions and answers, as this page from the Heidelberg Catechism of 1563 demonstrates (figure 2).



Catechiſmus/
Oder
Chriſtlicher Vnderricht/
wie der in Kirchen vnd Schulen der Churfürſtlichen Pfaltz getrieben wirdt.

Frag.

Was iſt dein einiger troſt in leben vnd in ſterben?

Antwort.

a 1.Cor.6. b Rom.14. c 1.Cor.3. d Ioan.1. e 1.Ioha.3. 1.Pet.1. Ioan.6.

Daß ich mit Leib vnd Seel a/ beyde in leben vnd in ſterben b/ nit mein/ ſonder meines getrewen Heylands Jeſu Chriſti eigē bin c/ der mit ſeinē thewern blut/ für alle meine ſünden volkomlich bezalet/ vñ mich auß allem gewalt des Teufels erlöſt hat d/ vñ alſo bewaret e/ daß ohne den willen meines Vaters

Catechism
or
Christian Instruction
as it is undertaken in churches and schools in the princely Palatinate.

Question.

What is your only comfort in life and death?

Answer.

That I, belong with body and soul[a] / both in life and in death[b] / not to myself, but to my faithful Saviour Jesus Christ[c] / who fully paid for all my sins with His precious blood, and has set me freed / from all the power of the devil[d] / He also preserves me[e] in such a way / that without the will of my heavenly Father…

a I. Cor. 6.
b Rom. 14.
c I. Cor. 6.
d Joh. 1.
e I Joh. 8.
I Pet .1.
Joh. 6.

Figures 2 and 3: First page of the *Heidelberg Catechism* from the 1560s and in translation (Image courtesy of Wikimedia Commons; translation from Centre for Reformed Theology and Apologetics, 2012)

This example highlights remarkable systematic variation in the use of typography that could only have been standardized via the printing press. It includes superscript letters that link specific words in the body of the text together with references to supporting biblical passages, using gothic as well as Latin typefaces. Despite this, the *raison d'etre* of the catechism was still its oral performance. Strauss (1978) for example notes that although the widespread use of the catechism was enabled by "the flowering of print culture," "it was the catechism's suitability to *oral instruction* that made it seem a panacea for all problems of mass indoctrination" (p. 172):

> With unchangeably familiar questions and predictable answers it was the very paradigm of the safe and static condition [of doctrinal conformity] …which the reformers hoped to… [achieve]. In the most developed form of catechism practice, where children stood up in pairs to ask each other the prescribed questions and give the required answers the procedure approached the ideal of a fully internalized and self-perpetuating system of indoctrination. (Strauss, pp. 172-173; emphasis added)

However, the Heidelberg Catechism—as well as many other catechisms, including Luther's own *Smaller Catechism*—were much more than just efficient means for the religious indoctrination of the masses. They also epitomized Luther's own Protestant belief, namely the doctrine of salvation *sola scriptura* (through the scriptures alone)—and via the subsequent profession and proclamation of this same word. Just as the Gospel (God's *evangelion* or "good news") for Luther is "a spoken word," so too must today's believers proclaim their faith *aloud*. "The gospel," Luther insists, "should not really be something written, but a spoken word… This is why Christ himself did not write anything but only spoke. He called his teaching not Scripture [i.e. that which is in*scri*bed] but gospel, meaning good news or a proclamation that is spread not by pen, but by word of mouth" (as quoted in Lotz 1983, p. 347). Thus, even though the printing press represents the *sine qua non* of the Protestant Reformation, oral expression is still privileged far above the books and pamphlets it then produced.

Post-Reformation Textbooks: Ramus, Comenius and "The Silences of a Spatialized Universe"

As we move from the denominational focus of the 16th century to the scientific revolution of the 17th, the press becomes indispensable in a new way. The 17th century is not only the age of Descartes and the beginning of Foucault's classical era; it is also the time of the bloody 30 years' war and of wide-spread religious persecution. In *The Order of Things*, Foucault himself explains that this is an era in which knowledge is seen as configured quite differently than in previous decades and centuries:

> It is no longer the task of knowledge to dig out the ancient Word from the unknown places where it may be hidden; its job now is to fabricate a language, and to fabricate it well—so that, as an instrument of analysis and combination… [it] enables things to become distinct, to preserve themselves within their own identities, to disassociate themselves or bind themselves together. (2005, p. 69)

Language, in other words, becomes analytic and taxonomic. It is a tool used to designate and dissect phenomena from both the natural and human worlds, to perform logical operations on them, and through such "method" to arrive at the "truth." Descartes' "I think therefore I am" is the most prominent example of this: Descartes can be certain of his own existence only because he uses these few words to clearly designate his own thought and being. And he links the two together with "therefore" to form a simple but unequivocal syllogism. Foucault continues, saying that for this era,

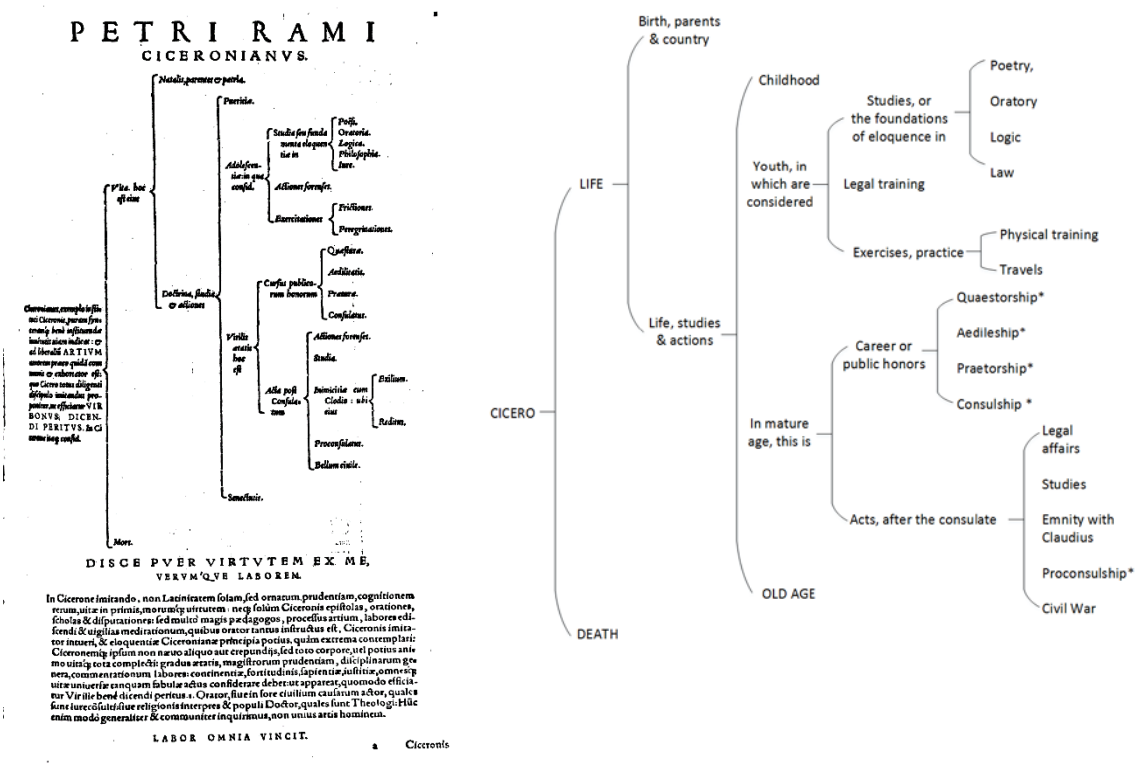
> it is the primal nature of language to be *written*. The sounds made by voices provide no more than a transitory and precarious translation of it. What God introduced into the world was written words; Adam, when he imposed their first names upon the animals, did no more than read those visible and silent marks; the Law was entrusted to the Tablets, not to men's memories; and it is in a book that the true Word must be found. (2005, p. 42; emphasis added)

This can be said to have applied as much to education as it did to philosophy or theology. As Friedrich Kittler explains, this era's "conception of language directed children toward the many languages of creation, toward the materiality and opacity of signs" (1990, p. 39). Although one might think that this represents the a clear victory of the writing and printing over the voiced and spoken, as I show later, any retreat or repression of the oral was far from complete.

It remains true, however, that the implications of the rise of "the materiality and opacity of signs" at this time receives canonical description in media ecologist Walter J. Ong's (2005) landmark book on Petrus Ramus. Late in the 16th century in Paris, Ramus developed a pedagogical technique, or perhaps more accurately, a method for study and learning that made extensive use of diagrams and labels, specifically in the form of branching trees. Ramus believed that every subject could be ordered as a set of "ramified" layers or hierarchies. Through this belief, however, Ramus not only invented *a particular* didactic method, he is also said to have invented the notion of pedagogical "method" in general (Hamilton 2003). In other words, Ramus is said to have been among the first to understand that something like "a method" could be used in learning and study, and he believed that it could be applied as a way of structuring knowledge or curricular contents in *any* subject:

> As a diagram of dichotomized concepts, Ramus's method could be used to present any subject as a visually represented structure that reduced knowledge to the bifurcated 'spatial patterns' of a branching taxonomy… by 'setting out the whole subject on a single side of paper', a student would be able 'to see the subject as a [single] whole'. This visual and graphic process certainly gave the teacher greater control over what subject matter would be handled and mastered. (Triche & McKnight 2004, pp. 47-48)

The result is an arrangement of opposites as if the most sober logical or programming operations were used to outline a particular topic or curriculum area. For example, in his book, *Professio Regia*, Ramus (more accurately, his editor Freige) provides an example of a tree diagram meant to schematize the life of Cicero—a mapping that is intended to be used as an example for students. It begins, logically enough, with the name "Cicero," which is then bifurcated into life and death, with death left blank, but life subdivided into "birth, parents and country" and "learning, studies and actions." This, in turn leads to the sub-sub-categories of "childhood," "youth," "mature age" and old age. ("Old age" is left unarticulated, presumably since Cicero was beheaded by Marc Antony at the age of 63.)



Figures 4 and 5: A Ramist branching diagram, included in Ong (2005) and translated by (and reconstructed from) from McKnight, Dillon & Richardson (1991, p. 37). Ong comments: "This is the 'explanation' of Ramus' work, *The Ciceronian (Ciceronianus)*, as laid out by Ramus' editor… Freige. [Ramus sets out] to explain what a true follower of Cicero should be. Here we are shown [through labels like "study, or the foundation of eloquence" and "career or public honors"] that the true Ciceronian models not only his Latin but, so far as possible, his entire career, and especially the educational curriculum preparing and initiating his career, upon Cicero" (2005, p. xxiii). (Left image image courtesy of Wikimedia Commons)

For Ong, however, the spatialized nominalism of Ramus' approach is much more than the 17th century "episteme" or "order of things" (as it would be for Foucault). Instead, it is part of a much greater shift to be measured in terms no less than "the human spirit" or "western civilization" themselves. Or as the title of his study of Ramus desclres, it represents "the decay of dialogue." As a result of this decay, Ramus' "visible and silent marks and pages" as now becoming "a part of the sinews and bones of civilization, growing with" the Western intellectual enterprise (2005, p. 10). And for Ong, this is hardly something to be welcomed. Rather, Ramism is made to appear as a central symptom of "a kind disease which Western society was [then] catching." This is the disease of the "printing press" itself, or

more broadly, the "reorientation of attitudes toward communication and toward what was to be communicated, knowledge itself" (2005, p. 310) In still other words, it is "the elimination of sound and voice from man's understanding of the intellectual world" and the domination of the "human spirit itself [by] the silences of a spatialized universe" (p. 318). Writing in *Orality and Literacy*, Ong describes this domination as extending from Ramus all the way through to the era of Derrida and deconstruction. Labelling both Ramus and Derrida "textualists," Ong characterizes Ramus as "provid[ing] a virtually unsurpassable example of logocentrism," and labels Derrida's deconstruction as "the most text-bound of all ideologies" (pp. 168, 169).

Regardless of the breadth of Ong's assertions, Ramus saw his method as serving an end that was emphatically oral and vocal in nature. In a 1574 English translation of his *Logike*, he explains: "Every arte hath the finall cause: …The ende of Grammer is to speake congruous[ly], Of Rethoricke, eloquentlie, and of [his own] *Logicke to dispute well and orderlie* (p. 17). This "well-ordered" dispute, or *disputatio* is an entirely oral phenomenon, a formal, dialogical examination focusing on the "canonical texts read aloud in the lectures" (Clark 2007, p. 68). And although the disputation, or as it is known today, the viva or oral defense, forms a tradition beginning in ancient Greece and reaching into our postmodern era (e.g., see: Dobson 2017, p. 3), Ong sees it as having been effectively eliminated with the spatialized silence of Ramus' method. He laments the

> movement away from a concept of knowledge as it had been enveloped in *disputatio* and teaching (both forms of dialogue belonging to a personalist, existentialist world of sound) [and] toward a concept of knowledge which associated it with a silent object world, conceived in visualist, diagrammatic terms" (p. 151).

However, one might wonder how "personalist" or more anachronistically, "existentialist" a verbatim reading of a "Classick Author" might have been experienced before Ramus—just as one would justifiably doubt the disappearance of dialogue or disputation in the university today.

Regardless, Ramus' silent world of carefully diagrammed space and vision, as Ong himself observes, was taken even further by one of Ramus' disciples, Johann Heinrich Alsted (2005, pp. 163-165). In his seven-volume *Encyclopedia*, Alsted used Ramean method and diagrams to structure all of human knowledge (as it was then believed to exist) into a range of intricate but sprawling charts. Alsted, however, is not known primarily for his refinements of Ramus' method. Instead, he is the celebrated teacher of a much more famous educator, one whose own book of words and diagrams has been translated in languages around the world, and used for centuries after its original publication.

This educator is John Amos Comenius, and the book, his *Orbis Sensualium Pictus* (The Visible World), one of the first picture-books for children. Comenius' work undertakes a deliberate and precise visual ordering of the world for children, underpinned by the belief that discrete signs, in their fabricated materiality, could lead, through logical practice, to the truth:

> It is *a little Book*, as you see, of no great bulk, yet a brief of the whole world, and a whole language…
>
> I. *The Pictures* are the representation of all visible things… [a]nd that in that very order of things, in which they are described in the *Janua Latinæ Linguæ* [via the Latin language]…
>
> II. *The Nomenclatures* are the Inscriptions, or Titles set every one over their own Pictures, expressing the whole thing by its own general term.
>
> III. *The Descriptions* are the explications of the parts of the Picture… [showing] what things belongeth one to another. (Comenius, 1677, n.p. emphases in original)

Comenius' book thus progresses from the reality of visible things, in their God-given order and structure, to the rationality and organization that, according to the classical *episteme, could* be realized in words and sentences. And in so doing, it effectively covers all topics that were then known, from the phases of the moon to the equipment of the mariner at sea. Like many of his contemporaries, Comenius envisioned accomplishing this ultimately through the invention of a perfect fabricated language—a 17th century dream of a kind of Esperanto that would at once represent a recovery of Adam's original language and be perfectly absolutely logical and rational (e.g., see: Slaughter, 1982). However, for his *Orbis Pictus*, Comenius was forced to settle for the next best thing: for academic Latin, which was placed beside the equivalent labels and conjunctions in the local tongue; see figure 6.

Figure 6: A page from Comenius' *Orbis Pictus* depicting Adam and Eve (or "men") and the things of the world. It describes a broadly Aristotelian "order of things" seen in the 17th century as coeval with God's order: "The heaven hath fire, and stars. The clouds hang in the air. Birds fly under the clouds. Fish swim in the water. The earth hath hills, woods, beasts, fields and men, thus…the four elements hath their own inhabitants" (Comenius, 1677 n.p) Adam, meanwhile, has his arm outstretched, appearing to be naming these things of the world in their interrelationship using his perfect language. (Image courtesy of Wikimedia Commons)

"The Persistence of the Recitation:"[2] The Catechism from 1700 to 1900

Regardless of the achievements of educational reformers like Ramus and Comenius, in many contexts—especially those removed from centers of culture and learning—the catechism remained dominant. For children and students who would never read a word of Latin in their lives, or even dream of owning a copy of *Orbis Pictus* (books were still costly and produced by hand) catechisms like Luther's were still the order of the day. This form offered a flexibility and economy of means that made it indispensable for the education of the lower classes, and also of great utility in the most far-flung parts of the expanding West. For example, it could accommodate the most ill-equipped school-room, and the most under-qualified teachers:

> Because the teachers were relatively untrained, letter-perfect memorization without peculiar attention to meaning was the basic method of common, or public, school education. […] If the goal were memorization, the catechetical style eliminated the need for either pedagogical knowledge or subject knowledge on the part of the teacher [requiring only] a master reading… to pupils… with no further necessary equipment such as a blackboard or writing equipment — desks, pens, ink and paper. (p. 6)

As a result, it is no surprise to learn that Luther's modest catechetical text was translated into dozens of languages during the 16th and 17th centuries, including ones more readily associated with Catholicism and Eastern Orthodoxy than with Protestantism (e.g., Polish and Croatian; Houston, 2014, pp. 62-63). Moving from the 17th to the 18th century, the catechism—specifically in terms of its call and response format—also came to present a kind of template for mass schooling in subjects *other* than prayer and confession. In America, one person in particular is celebrated as having given a "secular catechism to the nation-state." This is lexicographer and language reformer Noah Webster (1758-1843), who was also "perhaps America's most successful [textbook] author of the last half of the eighteenth century," as John Wakefield explains:

[2] See: Hoetker, J. & Ahlbrand, W.P. (1969). The persistence of the recitation. *American Educational Research Journal, 6*(2), 145-167.

Part II of Webster's (1783) *Grammatical institute of the English language* couched all of its definitions in question and answer format:

> What is Grammar?
> Grammar is the art of communicating thoughts by words with propriety and dispatch.
> What is the use of English Grammar?
> To teach the true principles and idioms of the English language. (pp. 2-3)

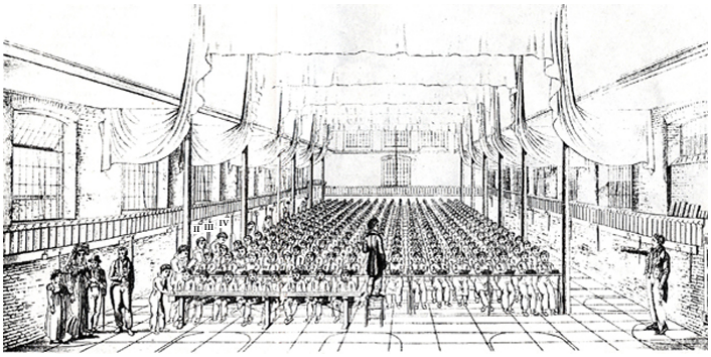


Figure 6: A Lancastrian monitorial school of the industrial era, with older children working as monitors at the ends of the rows on the left. Despite the obvious differences from today's practices, classrooms of the industrial age are frequently seen as providing the paradigm for current "conventional" schooling arrangements in the literatures of educational media and technology. (e.g., see: Squire 2005, Sawyer 2014, Watters 2015;) Image courtesy of Wikimedia Commons).

Similar catechetical questions and answers were used in the schools well into the 1900s. For example, the monitorial schools of the Lancastrian system established in Britain, America and elsewhere in the first half of the 19th century relied on this kind of rote learning promoted through catechism or recitation (figure 6). These schools, established for children now concentrated in industrial centers, brought together many dozens of students in a single classroom—and expected older students to serve as "monitors" for the younger. They were. As textbook historian R.M. Elson observes:

> in many classrooms the memorization technique was reinforced by the monitorial system, whereby older students were designated to hear the recitations of younger ones… One teacher with the aid of monitors could handle an enormous class of many grades. But the monitor could only be trusted to see whether the student's memorization of the schoolbook was letter perfect. (1964, p. 9)

However, even before the invention of the monitorial system, the catechetical method was also subject to strenuous critique. With the inauguration of a new discourse network (or Foucauldian *episteme*) in 1800, as Kittler puts it, rather different forms, practices and technologies can to be seen as necessary: "The discourse network of 1800," Kittler explains, "revokes Luther's commandment to 'recount from word to word.' This is replaced," Kittler specifies, "by the new commandment to have only that read which students and teachers 'understand'" (p. 20). It is not a question of the *right* words, but rather, of using one's *own words*—reflecting one's own thought and understanding—as J.F. Herder emphasized in his 1800 *School Address*:

But remember, you catechists: …"Who created you? Who (else) did he create?" Is not really catechizing, but actually a kind of bodily "yawning" of the word … little more than the "giddyap" sound of a driver of horses… One must catechize in one's own words; one must draw one's own words out from that which is catechized. One's own words: these and these alone signify one's own thoughts. These [words] must one follow, in order to connect one's thoughts with them. (1953, p. 732)

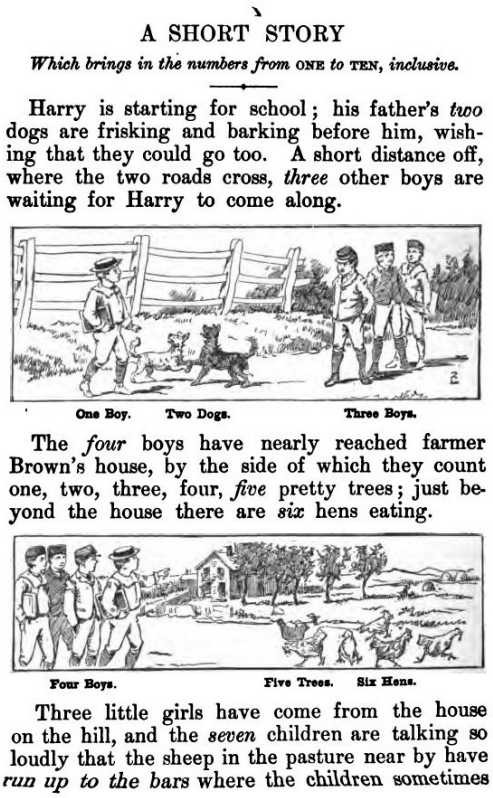
But what did this mean for education and for the textbook? How could the printed word encourage readers to signify their own thoughts in their own voice?

The Romantic Textbook: Embodying the Creation of new Knowledge

The famed Romantic educational innovator, Johann Heinrich Pestalozzi (1746-1827) devised a method that allowed students to signify their own thoughts through their textbook reading. This is known as the "inductive method," which sought to teach children abstract matters by beginning with the concrete realities that were literally right in front of them. This method would take the the numbers of boys, girls, chickens or trees they would encounter on their way to school (figure 7), and ask the child to count, add and subtract them as numbers. This "inductive approach," as Perkinson says, led the student away from prescribed answers, to ask him or her "to determine an explanation for him [or her]self" (Perkinson 1985, p. xii). It begins not with an Aristotelian ordering of the elements—fire, air, water and

earth as outlined by Comenius—but used was already evident in the child's world as its starting point. It encourages the child not to repeat what is already written, but to create or generate *for* themselves knowledge that is new *to* themselves. One could say that this method turns the collective and verbatim *external* verbalization of the catechism in on itself, and transforms it into the *internalized* but free vocalization of the individual student. Historians of the textbook emphasize that this inductive method led to a kind of a revolution in American (and other) textbooks and education: "The first Pestalozzian textbook," according to Perkinson, appeared in the US "in 1821, *First Lessons in Arithmetic*, compiled by Warren Colburn:"

> This book had a tremendous influence on all subsequent arithmetic textbooks. Its main contribution was to construe mathematics as a process of observation rather than as a "ciphering" procedure. (How many thumbs do you have on your right hand? How many on your left? How many on both together?) In all subject matter, the old catechetical questions common to earlier textbooks gave way after the 1840's to inductive questions (Perkinson 1985, p. xii).



A SHORT STORY

Which brings in the numbers from ONE *to* TEN, *inclusive.*

Harry is starting for school; his father's *two* dogs are frisking and barking before him, wishing that they could go too. A short distance off, where the two roads cross, *three* other boys are waiting for Harry to come along.

One Boy. Two Dogs. Three Boys.

The *four* boys have nearly reached farmer Brown's house, by the side of which they count one, two, three, four, *five* pretty trees; just beyond the house there are *six* hens eating.

Four Boys. Five Trees. Six Hens.

Three little girls have come from the house on the hill, and the *seven* children are talking so loudly that the sheep in the pasture near by have *run up to the bars* where the children sometimes

Figure 7: An 1884 edition of Colburn's *First Lessons in Arithmetic*, published by Boston, Houghton, Mifflin and Company (image courtesy of Archive. org)

Figure 8: Pestallozian pedagogy in the scene of the bourgeois nursery. In addition to his inductive method, Pestalozzi introduced a "phonetic" method of reading—a 19th century version of today's phonics. The picture shows a mother teaching her daughters the sounds of various phonemes or syllable combinations on a table. The text below admonishes children to "hold your mother doubly in honor, who simultaneously raises and loves you." (Image from Archive.org).

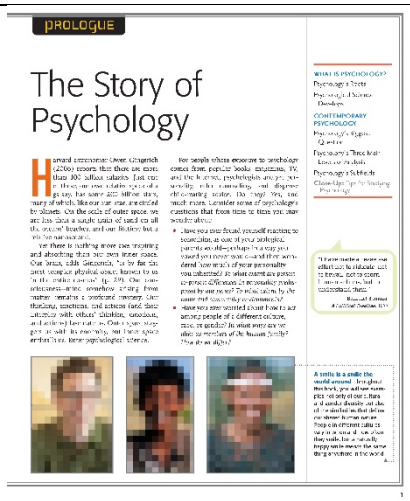


Figure 10: This page from a recent psychology textbook brings together a range of textual techniques reminiscent of Pestalozzi's inductive method. It addresses the reader directly (as "you") three times, asking him or her no fewer than six questions that ask after inductive responses. (From: Myers, (2009), used with permission; photographs have been blurred due to copyright restrictions.)

Instead of learning through rote memorization, the idea was to get children—as befits the discourse network of 1800—to *understand*, using their own words, and based on their own experience. And by beginning with the student's own experience, Pestalozzi's method can be said to be emphatically "student centered" in the fully contemporary sense of the phrase. Textbooks today continue to use Pestalozzi's inductive method, asking students to reflect on questions arising from their everyday experience, with the hope of directing their thoughts to matters more general and abstract. For example, Knight's definitive *College Physics* (2nd Edition) verily bombards the student with concrete examples and questions in its opening pages, beginning with: "Why, when you toss a ball upward, does it go up and then come back down rather than keep going up?" It continues with an analysis of the concrete problem-question posed by this ball: "Is it necessary to analyze the way the atoms in the ball are connected? Do we need to analyze what you ate for breakfast and the biochemistry of how that was translated into muscle power? These are interesting questions, of course. But if our task is to understand the motion of the ball, we need to simplify!" (Knight, Jones & Field, 2010, p. 1; see also figure 10).Pestalozzi's affirmation of orality in his inductive method is clearly echoed in still other ways in university-level education. This happened specifically in terms of the new form taken on by the lecture, and a new kind of "textbook" that came to be associated with it. No other name is more closely associated with this new type of lecture and textbook than Friedrich Gottlieb Fichte, who complained about an excess of reading material—and of word-for-word reading of the same—in 1807:

> Books have become extremely common… making it easier to disseminate one's [ideas] in writing than through the spoken lectures. Even though there is no branch of study for which there is not an overabundance of books, people still feel that the university needs to recapitulate the entire world of books once again—to *recite* what lies printed on the page for all to see. (1807, 97-98; emphasis in original)

Fichte, a university professor and noted public speaker, had no interest in simply reciting something from print materials. Instead, he became the one of the first—in an internationally influential period of German university reform—to lecture in a manner we still consider effective today, as Clark (2006) notes:

> [It is in] the 1790s in the University of Jena Fichte became one of the first German professors who began officially lecturing without a set text.... Fichte and other Romantics began lecturing on their own work without any pretense that that they were glossing a text or recapitulating a tradition.... Departure from an actual or even virtual textbook as a basis for lecturing constituted the ultimate break with the sermon [or medieval lecture]. (p. 410)

Fichte's powerful public speaking abilities were noted by contemporary luminaries from Goethe to Schleiermacher (Ehrlich 1977). And Fichte himself saw his lecturing as working to bring to life what he called "spirit" (*Geist*), something that he wished would enliven the audience just as it animated the speaker. For example, Fichte concludes one of his lectures on the "Spirit and the Letter in Philosophy" with a clear affirmation of the living spirit manifest through his oral performance: "The wish with which I conclude today's lecture," Fichte said, "is that . . . from time to time I can succeed in scattering in your souls fiery sparks which will arouse and stir them" (pp. 198–199).

Wilhelm von Humboldt, whose name today still designates a model of the contemporary research university—used as the basis for the Universities of Chicago and Toronto, for example—understood the lecture in similar terms:

> The task for the lecturer in this new age was thus not to pass on what had been handed down, but to embody the creation of new knowledge…. For unconstrained oral communication to an audience, which includes a significant number of intelligences thinking in unison with the lecturer, inspires those who have become used to this mode of study just as surely as does the peaceful solitude of a writer… (1970, p. 247)

The task of the lecturer, in other words, is now very clearly and explicitly different from what it was in the Renaissance, and even in the early modern period. It is no longer about preserving knowledge, but about generating it anew. And to witness knowledge produced in this way, as von Humboldt suggests, is also to participate in its generation oneself.

But what is the role specifically of the *textbook* when the lecture is to "embody the creation of new knowledge," when the lecturer "must say precisely those things which do not exist in any book"? Simply put, the textbook is generated *through the lecture*. In Fichte's case, one of these textbooks was his *Wissenschaftslehre*, published in 1804, (available in a 2005 translation as *The Science of Knowing, J. G. Fichte's 1804 Lectures on the Wissenschaftslehre*). Indeed, this book saw knowledge (and the "self" or "I" behind it) as being generated through acts like lecturing—in line not only with the form of the lecture inaugurated by Fichte, but also with the Romantic privileging of the spoken word in general (Friesen 2017, pp. 47-54)..

Examples of similar lecturing—where the lecturer embodies the creation of new knowledge at the lectern—abound from Fichte's time to the present. It is mostly thanks to copious student note-taking, for example, that we today have knowledge of the theories of interpretation and education from Fichte's contemporary, Friedrich Schleiermacher. Something similar can be said for Ferdinand de Saussure's famous lectures or *Course in General Linguistics* (1906-1913) (Saussure, 1983), Wittgenstein's *Cambridge Lectures, 1930-1933* (Wittgenstein, 2016), the *Seminar of Jacques Lacan I-XXIII* (1954-1975) (e.g., Lacan, 2016), and Michel Foucault's *Lectures at the Collège de France* from 1970-1981 (e.g., Foucault 2017). In each case, the lecturer effectively "created" knowledge which was then "embodied" in texts. Ans such texts, moreover, subsequently served as textbooks in other university courses.

However, around the middle of the 20th century, something changed in this production process: Electro-mechanical recording and broadcast technologies (introduced a few decades earlier), found their way into the lecture theatre—or into the awareness of the lecturers themselves. We have, for example, the lectures of Bertrand Russell and Theodore Adorno from the mid-20th century thanks to these developments (e.g., see: Ince 2012; Adorno, 1966). The famous televised lectures of Richard Feynman appeared with the emergence of TV as the dominant medium (Feynman, 2011). Still later, lectures from faculty members of MIT, Harvard and other institutions began appearing on YouTube and in MOOCs (Massive Open Online Courses), together with TED-talks becoming a staple in brick-and-mortar classrooms and in online instruction as well. Advice for lecturers or speakers, whether for large lecture halls or recorded settings,

reflects the 200-year-old romantic emphases on orality and stirring one's audience through the spoken word: "You cannot inspire others unless you are inspired yourself. You stand a much greater chance of persuading and inspiring your listeners if you express an enthusiastic, passionate, and meaningful connection to your topic." (Gallo 2014, n.p.).

Strikingly reminiscent of Fichte's pyrotechnical ambitions, the vaunted ambition of such TED Talks is nothing less than to "ignite a movement"—or in Fichte's terms, to scatter "fiery sparks which will arouse and stir" their virtual audience.

Conclusion: 600 Years of Orality and Literacy in Education

As indicated above, the textbook persists today in broadly in the same form given to it by Pestalozzi and his Romantic contemporaries in and around 1800. Despite the subsequent intervention, starting around 1900, of audio and video recording playback and broadcast—and now of digital, multi and hypermedia—textbooks and lab supplements still rely on mathematical and other problem questions, based on concrete questions and examples. "Student-centered" or "authentic" pedagogies, using images and examples from students' own lives, still encourage learners to proceed inductively from concrete specifics to more abstract thoughts and concerns. It is thus *not* primarily *technical* conditions, but *cultural* ones that set the pace for change in these educational methods and techniques.

Indeed, looking to research on student work with textbook interrogatives and problem questions, the role of technology is clearest *not* in any mediation or automation of these processes, but in the *vocabulary used to describe them*: Today we do not speak of the inductive questioning of the Pestalozzian method, but rather of data processing and feedback loops, manifest as "self-processes" such as "self-talk" and the "self-explanation effect" (e.g., see: Friesen 2013; 2017). These types of "internalized" data processing techniques are seen as valuable for solving problem questions, even producing the "effect" of student performance increases (e.g., Chi & Bassok 1989).

Speaking more broadly, by isolating and examining the different scenes where the textbook is engaged in different roles, I have shown its history—and that of related educational forms—to be complex, contradictory and frequently out of synch with technological changes and even with "itself." There are multiple version of "education" going on at the same time. This history is quite different from a gradual, or even precipitous shift of education (or culture) from the naturalness of orality to the silences of a spatialized universe invoked by Ong and other media ecologists. Instead, it begins (in the late Middle Ages and in the early modern era) with orality working in the service of the preservation and recapitulation of an ancient tradition that was entirely *textual*. Later, through the influence of both printing technology and Protestant theology, text and the spoken word entered a very different relation in the form of the catechism. Salvation, according to Luther, occurs *sola scripture*—by the written word of the scripture alone—but is complete only through its simultaneous verbal proclamation (as scripted by his *Smaller Catechism*; e.g., see: Lotz 1983). Later, the early 17th century, the conviction that it is the primal nature of language to be *written* resulted in the silent printed words and diagrams of Ramus and Comenius' *Orbis Pictus*. Regardless, the key university practice of the oral disputation or defense carried on—and the catechism remained a staple in the education of the masses.

The evidence thus suggests Ong's conclusions about the silent spaces of print destroying the role of voice and listening is overstated—at least when it comes to education. Orality and literacy, again in education, do not appear to be opposed to each other in zero-sum game where one can only advance or give way to the other; it is much more contradictory and complex than this. It seems that media ecologist Neil Postman had some of these complexities in mind in *Technopoly* (1992) when he considers some of the possible effects of the personal computer in the classroom:

> In introducing the personal computer to the classroom, we shall be breaking a four-hundred year-old truce between the gregariousness and openness fostered by orality and the introspection and isolation fostered by the printed word. Orality stresses group learning, cooperation, and a sense of social responsibility… Print stresses individualized learning, competition, and personal autonomy. Over four centuries, teachers, while emphasizing print, have allowed orality its place in the classroom, and have therefore achieved a kind of pedagogical peace between these two forms of learning, so that what is valuable in each can be maximized. (p. 16)

Briefly setting aside Postman's concern with the personal computer for the moment, it is important to note that this paper certainly confirms his understanding of orality and literacy as always being present in some measure in the classroom and the study and lecture hall. And it appears entirely true that what is valuable in both orality and literacy is actualized (in various ways) in this context. However, the relation of orality and the textual that I've outlined in this

paper is neither one of a long-standing truce, nor marked by centuries of "pedagogical peace." Instead, it is one of considerable dynamism, in which print and orality have played highly differentiated but closely interdependent roles, with long periods of synergy or symbiosis, and with other times when one is subsumed and sublimated by the other. And any apparent "truce" or "peace" between the two can suddenly collapse under the weight of new cultural conditions—as it appears to have happened in 1800. It is these cultural conditions that I aver "constitute a historically very powerful formations" that shape the generation, preservation and circulation of knowledge. Whether it is in the form of an oral exam, or "self-talk" in response to inductive questions, the immediacy and adaptability of the oral appears in various ways to compliment or counteract the demanding abstraction and precision of writing. Perhaps one could say that in education, the spoken word initially enculturates the young into the challenges of text and writing, and that later, it offers a space for their vivification, negotiation and disputation.

In any case, the configurations of the oral and literate illustrated in this paper can serve to allay Postman's and others' concerns about the personal computer—or some other new technology—upsetting the ecological balance of educational spaces. If the 600-plus years of the history of the textbook tell us anything, it is that new technologies will not turn the classroom (or the lecture hall) into a space of silent, spatialized thought, rendering it obsolete as a locus collective or communal learning. Nor will they turn the classroom into the exclusive domain of sound and voice. Instead, text and speech will remain in dynamic interrelationship, being reconfigured in response to changing cultural conditions, rather than being forced into dominance or obsolescence through the computer or any other technological advancement.

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