STUCK IN TIME: THE DECENTRING OF THE TEXTBOOK IN HIGHER EDUCATION

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Recognizing the textbook as a central, and significantly evolved, element of modern university education, this research attempts to address the lacunae that exist within our understanding of textbooks as pedagogical tools. Specifically, this exploratory research addresses questions pertaining to textbook development over time, textbook use by students, and the relationships that exist between the textbook, the educator and the student.

Introduction

The textbook has been a core element of modern education and textbooks as pedagogical instruments have, as a consequence, been the focus of much discussion and debate (See, for example Cameron, Ireland, Lussier, New, & Robbins, 2003; Crowther & Carter, 2002; Doane, 1994; Ferree & Hall, 1996; Griffin & Cashin, 1989; Holden, 1992; Krislov, 1958). Despite this weight of attention, we argue that the research on the role and place of the textbook suffers from two significant lacunae, and that these gaps exist as a function of academic conceptualizations that have not accounted for the significant changes in the educational environment. Specifically, we will address changes in the form and function of the textbook and the impacts of the emergent information environment within which students are now learning.

In the first instance, the majority of extant research is based upon a textbook – centric model. That is, most of the research treating textbooks and their use has focused on such variables of interest as individual characteristics (e.g. learning styles), the learning environment itself (e.g. supportive, individual, group), and the materials and methods (e.g. modes of information and presentation), as employed in a classroom setting. This leaves us with a distinct lack of attention to the activities or behaviours students engage in outside of the class, either before or after classroom sessions (Earley, 2003). Second, as scholars our understanding of the place and position of textbooks in the relationship between student, teacher and knowledge(s) has rarely involved students (Bruner, 1987), despite the fact that the textbook has been a central tool used in their learning processes (Blum, 2002).

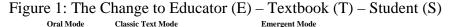
So how is this problematic? After all, higher education has been using textbooks since the publication of Comenius' *Orbis Sensualium Pictus*, which first presented learning materials in a standardized sequence – in effect, the precursor to the textbook in its modern form (Connors, 1997). Since then textbooks have had a significant influence on the structure and content of curricula offered at educational institutions. As the textbook increasingly penetrated modern educational institutions, paralleling the development of a highly competitive market for textbooks in higher education, mimesis can be observed in two forms; first, within textbooks

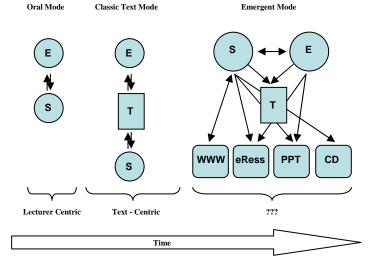
themselves as they increasingly adopt the same structure, form and format; and second, the resulting standardization of the curricula in classes that reflects the textbooks in use (Meyers, 1992). Given the standardization of today's university curricula and the central role given to textbooks within it, it is obvious that this method has historically met with success. However, a deeper analysis of the evolving relationship between knowledge(s) and learning, educator, student, and the textbook demonstrate otherwise. The taken-for-granted-nature (Meyer & Rowan, 1977) of the textbook has perhaps blinded us to these changes.

The Modern Text

The advent of the Internet and the World Wide Web, with the plethora of connective technology and computational devices available to and for students, has resulted in a massive explosion of information and learning resources. Part of the paradigm shift brought on by this information revolution was the evolution of textbooks into 'multimedia pedagogical objects' as they were heavily influenced by technology (Austin & Kruzich, 2004; Goddard, 1993). As a consequence, the conventional dimensions of texts are increasingly being supplemented by three additional knowledge elements. First level elements are typically pre-packaged knowledge(s) in electronic form such as; the supplementary reading documents and notes, presentation slide graphics, or video and audio based information from the publisher. Second level elements are typically interactive knowledge artifacts such as; online testing mechanisms, interactive tutorials, decision tree based learning, and living case studies using real time datasets drawn from the Internet, again usually supplied by the publisher. Third level elements are additional material(s) either sourced or supplied by the instructor and may be either similar or dissimilar to the other knowledge elements (e.g. instructor created powerpoints, class notes, or journal articles). Textbooks have evolved beyond being carriers of pre-packaged knowledge, as represented by the text and imagery contained within the physical textbook, and now also have 'virtual extensions' that reach out to various knowledge(s) contained in the World Wide Web or other electronic networks.

As the textbook is the main carrier or mechanism for learning in both secondary and postsecondary institutions (Cameron et al., 2003; Cunningham, 2003), it is surprising that there has been little concerted research into these changing relationships. Additionally, it is surprising that little has been done to understand how the changes in the form of the textbook have impacted their use by students. Given the centrality of the textbook in our classes, the implications this has for modern pedagogical development are immense - particularly at the undergraduate level where the textbook is the main structural and learning linkage in the triumvirate of educatortextbook-student. These new multimedia textbooks are heralded as an advance over printed textbooks as they foster interaction with the different modalities of information contained or packaged with them (Santor, 1995) and subsequently, the argument is made that the incorporation of these newer forms of technology and knowledge makes for active rather than passive engagement with the students (Smith, 2000). In this conceptualization, the new materials are intended to be pointers at the periphery of the textbook (Richardson, 2002), which reaffirm the text as the central and true arbiter of the knowledge. However, there still exists a lack of research and study to determine what features and characteristics of the modern textbook are utilized (or not) by students, how they are used, and how this has impacted the educatortextbook-student learning dynamic. We believe that the development and inclusion of these 'extension elements' has/is fundamentally changing the learning environment by changing the relationships between knowledge(s), educator, student, and the textbook – and changing the role, place, and use of the textbook itself in the modern classroom. The potential change to these relationships is graphically portrayed at Figure 1.





This begs us to ask three interrelated questions. First, exactly how have textbooks changed over time? Second, given these changes 'how do students actually use the multimedia textbook for learning in today's classroom?' Finally, answers to the first two questions will permit us to answer a third, and perhaps the most important, question. That is, how are the emerging relationships between educator, textbook and student, different? This is considered a particularly acute issue as this form of technology increasingly penetrates the classroom and affects how information is accessed, presented, processed and used.

The Centrality of the Text

The centrality of the textbook in university education is not a new debate. Some scholars argue that the text is no longer sufficient and should be used in conjunction with other information sources (Clark, 1999) and they call for the textbook to be replaced entirely by technology in the classroom (Simon, 2001) as in the Texas initiative to replace all printed textbooks with laptop PCs (Chapman, 1998). Others believe textbooks should continue to be used and be complimentary to technology (Clark, 1999), and finally, a third view posits technology as representing a barrier to the text-centric model (Besser, Nan, & Stone, 1999).

However, few studies have addressed the implications of any of these approaches from either a comparative or holistic approach. Much of the research centers on one knowledge element in isolation of the others, rather than the relationships that exist between various elements, and the results remain inconclusive. Besser et al (1999) found that the majority of respondents used and relied on the textbook whereas other studies have found that business students, in particular, dislike textbooks and minimize their use (Stitt-Gohdes, 2001). Other early empirical evidence

suggests that more technology may actually detract from the learning experience rather than enhance it (Overland & Mindt, 2002). As noted by Overland and Mindt (2002) perhaps the technological supplements are consuming time and effort, leaving little time for students to actually engage with the printed textbook itself. Contrarily, other studies have shown that students rarely engage the ancillary Internet based components of the multimedia textbook and only do so when 'forced' by the instructor (Overland & Mindt, 2002). In sum the studies of the use of these additional knowledge elements, those commonly associated with the modern text, remain limited in scope providing us with little concrete understanding.

Method

The primary goal of this preliminary phase of the research was to identify and explore how students interact with their texts and related pedagogical tools. Specifically, we were interested in identifying the centrality of the text, as actualized by the behaviours in which students engage, in relation to their textbooks. A qualitative research method permitted us a more flexible approach to the study of this phenomenon of interest, allowing for exploration and the exploitation of serendipitous discoveries (Neuman, 2000). Specifically, focus groups were used to identify and explore student behaviours within an emergent behavioural domain that suffers from a lack of previous empirical understanding, were deemed an appropriate method for this research (Campbell & Fiske, 1959; Teddlie & Tashakkori, 2003). Focus groups are a "research technique that collects data through group interaction on a topic determined by the researcher." (Morgan, 1996 p. 130); and they may be considered a particular form of interview (Morgan, 2002). Similar to an interview, the focus group method permits researchers to "get closer to the thoughts and experiences" of the respondents involved (Morgan, 2002 p. 142). While not as efficacious in producing information depth as some interview methods (McCracken, 1988) the focus group yields richer and more in-depth information than purely quantitative methods (Berg, 1989; Saint-Germain, Bassford, & Montano, 1993) as it permits respondent reflection and exploration (Kitzinger, 1994).

For this first, exploratory phase of the study, student volunteers were solicited using a university e-mail system. Students were chosen for this particular study as their knowledge and experience with the area of focus is undeniable and is essential for focus group research (Cozby, 2001). Within the university all students currently enrolled in the business program were sent an e-mail asking them to volunteer for a focus group on textbook use. The names of the researchers were withheld so as to not unduly influence students' participation. Participating students were not compensated for their participation. Thirteen students responded positively to the e-mail and ten undergraduate students participated with seven business students and three from various other disciplines. The focus group lasted approximately one hour and fifteen minutes. While a focus group guide was used to direct the discussion, the guide merely contained open-ended, grand tour (Silverman, 2000a), questions which enabled a free and open discussion. Student participants appeared at ease and the discussion was frank and free flowing. The session was audio-taped and the audio tapes were later transcribed.

Results

Using constant comparison (Silverman, 2000b) the transcription of the discussion was analyzed iteratively with the researchers returning to the data at each step. This analysis presented the researchers with several insights into student use, as well as student perception of ranked importance, of textbooks and their related pedagogical knowledge elements(s). In light of the extant literature and historical centrality of the textbook as a pedagogical instrument, many of the responses were not anticipated. The results are presented below categorized within the themes that evolved from the data.

Theme One - The 'New' textbook

Participants confirmed extant conceptualizations of the evolution of the text and the proliferation of 'add-ons' and additional resources. Comments included, "Every class that I have a textbook for has either a CD, PowerPoints that come with it, or a Web link that has like additional information", and "Every textbook has something in it now. It's pretty standard". There was consensus that these additional resources provided the students with additional information and were generally perceived to be of some value by the students.

Theme Two - The Relationship Between the Professor, the Knowledge, and the Student

Much of the discussion in the focus group centered on various aspects of the relationships between the individual students and their learning experience inclusive of educators and texts, and these discussions clearly identified the various ways in which they approached classroom activities and learning. Several sub-themes emerged under this general rubric including:

Variability of use by educators.

Students were quick to identify that the centrality of a text, as signaled by their classroom educators, did indeed vary from course to course. On one end the spectrum, they noted circumstances where professors utilize the text in its entirety - complete with the PowerPoint presentations and test-banks provided by the publisher. Further along the spectrum are those educators who require students to purchase a specific textbook but then seldom lecture from these texts, preferring instead to focus on a select few elements as well as drawing additional information from other sources. At the opposite end of the spectrum are courses where the professor does not require a text at all and relies exclusively on alternate sources of knowledge. Almost all participants had experienced at least one course where a textbook was not required. Descriptions ranged from, "It was an environmental class. She didn't want us to purchase these big mounds of paper" to "We used the case based method and selected readings". Regardless of the explanation behind the decision not to use a text, this approach seemed novel or different to the students, although they admitted that the trend appeared to be growing.

Participants also noted the increase in use of alternative knowledge elements by professors. They indicated that there was an increasing demand by educators for students to seek 'outside' knowledge for research projects and case studies. This was not deemed problematic as "it seems that information is free these days". In fact, students commented that this quest for 'other'

sources made sense because "textbooks don't have enough information about any one topic. You need external sources".

'Useless' texts. Perhaps most surprising was the passionate discussion that centered on 'useless' texts. This is perhaps the most alarming theme to emerge – both for those educators who use a text-centric model and for those in the publishing industry! Students clearly identified that there were instances where they were required to purchase texts which were not used.

- "Sometimes they say that a book is required and I've had, well, two classes specifically, possibly three, where the textbook was absolutely useless and I barely cracked it open".
- "Because it's not used in class and when the teacher like goes over what they feel we should be learning it's not reflective of what, like the textbook is so huge and they pick out like a couple of topics and then they don't make any reference to the textbook".
- "I had one course where I had to read the textbook. It was one where the theory was really, really important" (4th year honors student).

Cost and Value of texts. Another surprising observation was the lack of discussion about the cost of textbooks. Although we tried to avoid a priori assumptions when embarking on this study, it was anticipated that one of the reasons students don't buy textbooks is their cost prohibitive nature. However, contrary to this, student participants did not mention the price of books as a deterrent and were more likely to cite 'uselessness' than cost as a reason for not purchasing a text.

Theme Three - The Student - Knowledge Element Relationship

Two sub-themes emerged under this category:

Satisficing behaviour.

In many cases, the students made reference to attempts to gauge what would translate into success in the classroom as a guide to determining centrality of their own use of the various knowledge elements. This occurs regardless of the importance placed on the text by the educator. For example, in a course based specifically on the text, students appear to turn to the PowerPoint presentations when pre-studying for class or when studying for tests. The participants indicated that PowerPoint presentations are more direct, often easier to read which made it simpler to ascertain what was important to the professor and, thus, the most probable testing material. Similarly, when a research paper was the assignment of focus, participants indicated that the textbook is often used only to point the student in the right direction seeking additional external sources of information. It became evident that students, faced with several knowledge elements and their various pedagogical tools, were forced to choose which elements would bring about the desired results. The prospect of using all of the tools available to them was a foreign concept. The following comments are indicative of the students' thought processes in regards to which tools to spend the most time utilizing:

• "It depends on the class" (response when asked to rank order use of five pedagogical elements).

- "I usually use my books for research. The only reason I would read a book is if the teacher teaches directly from it."
- "Go to class. Download PowerPoints. Only read parts of the text that the professor talks about" (written response to a question about how the student uses the textbook).

PowerPoint presentations – more important than the text?

All participants identified the popular use of PowerPoint presentations in the classroom. It was noted that the university's business school professors tended to use them more than those in other disciplines. For the most part, these PowerPoint presentations were made available to the students, either before or after their presentation in the classroom, through various communicative channels (Intranet, handouts, online course web pages). Frequently, these presentations became the central focus when preparing for tests and exams, taking priority over the textbooks. Textbooks were often only referenced for explanation or clarification, as the following comments indicate:

- "I use those (PowerPoint presentations) to learn the material in the textbooks. Like if I'm being tested on the textbook, I use the PowerPoints to learn the material but if there is a term on the PowerPoints that I don't understand, then I go look it up in the textbook".
- "I think the PowerPoints are there to help me sort through the clutter. And then I go in and then I'll read what I think is necessary to read".

Discussion and Future Research

Although exploratory in nature and preliminary in scope, this study heralds the need for a better understanding of the evolution of the textbook and the subsequent impacts on the educator-knowledge-learner relationship. The discussion of findings and implications for future research will be discussed in light of the themes that emerged.

The 'New' textbook

The findings within this theme are not surprising - the discussion merely confirms the trend in the increased use of additional knowledge elements in the classroom and the prepackaging of additional knowledge elements by the textbook publishers. Student reaction to the 'new' textbook is generally equivocal, neither positive nor negative - the additional knowledge elements are just accepted as 'part of the package'. Despite the mere confirmatory nature of the findings, the implications for future research are extensive.

Given that the modern textbook increasingly provides multiple sources of information to students and professors (Richardson, 2002), the impact of these multiple sources and the increase in information provided must not be overlooked. Important questions need to be addressed. For example, of what value are these additional resources? Are we at risk of creating situations that foster information overload? This is a particularly acute issue. Learning in the modern information rich environment where students have access to a wealth of information from a multiplicity of sources represents a new and distinct challenge. Classic, linear textbook-based processes of teaching and learning have been demonstrated to breakdown in this environment

(Scharf & Smith, 2000). The presentation of too much information in multimedia sessions may actually detract from student learning and retention. In a series of experiments Mayer, Heiser and Lonn (2001) found that the presentation of multi-channelled information actually detracted from student learning performance. It is essential that we try to develop pedagogical strategies for dealing with information overload (Cole, Mandelblatt, & Stevenson, 2002) as we increasingly present additional information and knowledge(s) to students.

The Relationship Between the Educator, the Knowledge, and the Student

Approaches to teaching have always varied – from the 'sage on the stage' to the 'guide on the side' and now to the 'virtual educator', and educators have used the tools available to them differently since teaching began. However, what is of interest is the trend towards the inclusion of additional knowledge elements and the increased demand on students to make use of the glut of information available to them. Of equal interest is the notion that most courses still include texts, despite the plethora of knowledge elements available. This leads us to ask the following questions: Why do professors still insist on using texts? Why are students required to purchase texts that are seldom used? Is there an empirical trend toward using fewer texts? Multiple texts? What are the criteria used by educators when determining the centrality of multiple knowledge elements? Are educators feeling pressure to utilize all of the resources provided to them by the publishers? Are they, too, at risk of information overload? How are educators dealing with issues of information validity and credibility?

It is also imperative that we inquire about the content of our course materials. If the packaging has changed so drastically, what is the impact on the content? Are we requiring that students know more or less? Do the modern delivery mechanisms address the varied learning styles of our students? What are the implications on literacy, critical thinking, and depth of knowledge? As "textbooks are central to the pedagogical and epistemological processes in that they introduce students to concepts, assumptions and models, scaffolding students as they learn to tell and retell received stories" (Richardson, 2002, p. 18) and as 'textbooks' have changed so dramatically in the last decade it is now imperative that we 'dig deeper'.

The Student – Knowledge Element Relationship

It has been understood for some time that "students learn to value what they know will be assessed" (Garfield, 1995, p. 32). However, the traditional models (educator-student and educator-textbook-student) made it much easier for students to decipher what would, in fact, be assessed. Once again, information overload becomes an important issue and is spurring some to suggest that intelligent agents are needed to manage information for students (Baylor, 1999). Others suggest that the instructor needs to maintain a central role in the classroom, functioning primarily as a cognitive map for the students, drawing the linkages between concepts and information for the student (Earley, 2003). If we continue to present the student with different forms of knowledge, from numerous and varied sources, both sanctioned (e.g. educator directed) and perhaps unsanctioned (e.g. paper mills, etc.) and we do not provide a cognitive map for them, then the student will have no choice but to rely on their own judgement – and we may not like the result.

Information overload and information anxiety are two emergent challenges to students and knowledge workers in the modern work environment (Winkler, 2001) and new competencies are required for students to learn to cope with these challenges. Similarly, demand for increased use of the Internet for research poses significant challenges for information overload, information and data relevance, and source credibility that require distinctly different competencies for learning or the conduct of research at any level (Forniciari & Loffredo Roca, 1999).

Textbooks and educators are no longer the sole source of authoritative information in a classroom (Scharf & Smith, 2000) as students have technological access to the greatest wealth of information that society has ever experienced. Students are using the web, independently and at the behest of instructors, to access pre-synthesized information, and often fail to evaluate these many sources (Grimes & Boening, 2001). This is, indeed, a concern and speaks to the need for further research. It is imperative that we learn how to best arm our students with the tools they'll need to access and evaluate information from multiple sources. This is supported by the corporate world in their recognition that information literacy skills, the ability to source, evaluate and synthesize from a multiplicity of electronic and online information sources is a necessary skill for success in the modern business environment (O'Sullivan, 2002).

Concluding Remarks

Our preliminary findings suggest that the textbook, as we traditionally know it, is losing its central role in university classrooms as a result of the plethora of information options available to both educators and students. While at the surface this situation does not appear problematic at a deeper level the de-centering of the textbook and the subsequent implications must not be overlooked. The once simple relationship between the educator, the student, and the knowledge elements as represented by the textbook and other materials has been replaced by a muddier, noisier behavioural phenomenon with substantial implications for educators, students, and knowledge itself. As textbooks represent the confirmed, legitimate, or received view of knowledge within a discipline (Khun, 1962), it is therefore imperative that we, as educators, don't accept the evolution of the text blindly. We must continue this vein of research in order to investigate and understand the implications we have discussed in order to match our pedagogy to this new and emergent domain to build the most effective pedagogical tools possible.

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