

2004

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Recommended Citation

Phillips, Donna Kalmbach and Carr, Kevin, "Writing to Re-Invent: An eTextbook about becoming a Teacher" (2004). *Faculty Scholarship (COE)*. Paper 14.
<http://commons.pacificu.edu/edufac/14>

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Writing to Re-Invent: An eTextbook about becoming a Teacher

Description

How can authors use digital technology to write and publish from a poststructural theoretical framework, opening up spaces of possibilities that could not be achieved by writing and publishing in a traditional format? The authors share from their experience of authoring and testing *Becoming a Teacher through Action Research*, an eTextbook for preservice teachers. Macromedia Authorware is used by the authors to produce an eText in which readers construct layered-meanings and openly engage in the dilemmas of teaching. The results of pilot testing in summer 2004 are discussed.

Disciplines

Education

Comments

Paper presented at the Second International Conference on the Future of the Book, Beijing Friendship Hotel in Beijing, China, 29-31 August 2004.

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International Journal of the Book

Volume 2

Article: BC04-0011-2004

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WAYS WITH WORDS, OLD AND NEW
Proceedings of the Book Conference 2004

This paper is published at www.Book-Journal.com
a series imprint of the [University Press](http://theUniversityPress.com)

First published in Australia in 2004/2005 by Common Ground Publishing Pty Ltd at
www.Book-Journal.com

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ISSN 1447-9516 (Print)
ISSN 1447-9567 (Online)

The International Journal of the Book is a peer-refereed journal published annually. Full papers submitted for publication are refereed by the Associate Editors through an anonymous referee process.

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Writing to Re-Invent

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Abstract

*How can authors use digital technology to write and publish from a poststructural theoretical framework, opening up spaces of possibilities that could not be achieved by writing and publishing in a traditional format? The authors share from their experience of authoring and testing *Becoming a Teacher through Action Research*, an eTextbook for preservice teachers. Macromedia Authorware is used by the authors to produce an eText in which readers construct layered-meanings and openly engage in the dilemmas of teaching. The results of pilot testing in summer 2004 are discussed.*

Keywords: Interactive Textware and eTexts, Teacher Education, Action Research

How might academic textbooks look and function in the future? How will students and teachers read and use future textbooks? How will textbooks be written and published in the future? What words and ideas will replace the current meanings of “read,” “write,” and “textbook” in a future made possible by a digital computing-centred technology? The authors of this paper, two university professors serving in a preservice teacher education program, have undertaken a textbook production project in which the possibilities of digital technology are employed and tested. By producing a CD-ROM based textbook, *Becoming a Teacher Through Action Research*, the teacher-authors are re-envisioning the relationships between “reading,” “writing” and “textbook.”

Making *Becoming a Teacher through Action Research*

As teacher-educators, we engage with graduate students who enroll in our program to become a teacher. While seemingly simple, the phrase, “to become a teacher” is layered both with collective Western cultural innuendos and expectations. First, we each come to the task of “becoming a teacher” with personal experiences and fantasies of what the role *teacher* might entail. At the same time, *becoming* is more than simply taking on a new label; it is an act of personal transformation. The journey from preservice teacher to in-service teacher is complicated, requiring to some degree or another loss and mourning of one ideal to find another, alongside the acquisition of skills and behaviors to engage and teach students from a diverse society (Mackwood, 1997).

We have found *action research* - a form of teacher-research - to be a powerful roadway for this journey. Action research is both a place and space for student teachers to deconstruct and reconstruct their ideas, concepts, and skills as future teachers. While the action research roadway is powerful, the vehicle for such a journey, as represented in traditional textbooks, has not always fit the complexities, dilemmas, and obstacles encountered by the preservice teacher.

So we began to imagine: How might authors write, publish, and engage preservice students in an action research textbook? How would an action research textbook look and behave that acknowledges not only the subjectivity of the reader, but positions the reader as active and in quest of meaning? Could such a text be a transformative literacy event opening spaces of possibility that do not exist in traditional, linear text? Could such text scaffold preservice teachers’ conceptual development of action research resulting in praxis? How would such a text change us as teacher educator/researchers?

We began to experiment with digital technology as a means for re-thinking a textbook (and thus re-thinking our teaching) of action research to graduate preservice teachers. This paper is an early report on this project, whose working title is *Becoming a Teacher Through Action Research* (BTAR). We have approached the writing deliberately from a poststructural feminist framework (Britzman, D. P., 1991; Ellsworth, E., 1997; Gore, J., 1993; Luke & Gore, 1992; Lather, P. 1991; Spivak, G. C., 1993; Weedon, C., 1987) and from a literacy stance that acknowledges that “meaning” is never in the text, itself, but rather resides in the reader (Goodman, Y.M., Watson, D. J. & Burke, C., L., 1996; Goodman, K.S., 1994; Halliday, M.A.K., 1975;



Rosenblatt, L. M., 1983; Smith, F., 1994). Such a combined framework recognizes the subjectivity of a reader who comes to the text in quest of meaning within a specific context, bringing to the text personal and collective experiences, memories, and assumptions. Using *Macromedia Authorware*, a software tool designed to allow the user to construct interactive text and multimedia, we have reimagined a textbook that rejects the myth of continuity and an obsession with skill sets and technique alone and hopes to travel the efferent-aesthetic continuum of reading processes (Rosenblatt, 1994). We use the term “interactive textware” to describe what we have begun to construct.

In summer 2004, we implemented the first section of BTAR in teaching the first semester of a three semester course sequence on action research. We collected data from 36 graduate preservice teachers. What follows is an overview of the integrated theoretical framework surrounding BTAR and how the project attempts to reflect this framework, followed by description of how we used the text and who our participants were, and finally, the results of early data collection using the interactive textware.

Theoretical Framework of BTAR

Textbooks and their authors communicate a (usually) unspoken theoretical framework. We come to the *Becoming a Teacher through Action Research* project with a combination of poststructural and feminist theory, a coupling of two powerful ways to re-consider what is “normal” in becoming a teacher (Britzman, 1997; Luke & Gore, 1992). Poststructural feminist theory questions authority, the taken-for-granted and assumed “truths” of education. Teaching/research done from this position seeks to de-center the subject, focusing particularly on the social construction of self and the analysis of power/knowledge as it works as discourse at the site of self (Popkewitz, T. S. & Brennan, M., 1998). The theory of subjectivity views the self as elaborate, complex, and a site of “selves” formed by multiple discourse of power/knowledge. In this way, the theory rejects the notion of a single, unified self (Britzman, D. P., 1991; Lather, P., 1991; Weedon, C., 1987).

Authors acknowledging subjectivity in this way might view text as yet another discourse seeking to influence subjectivity. In a modernist view, the text is the authority, the “expert voice,” and the reader, is the “blank slate,” being “filled up” with knowledge directly transmitted from the authors/text. In the poststructural feminist view, the reader is socially constructed, bringing multiple lived experiences and interpretations of those experiences, to the text. The many discourses present at the reader’s site of subjectivity confuse, haunt, argue, and ignore the text-expert voice, flirting, rejecting, accepting

advances that might challenge and subsequently change paradigms of thinking.

Such a positioning is consistent with theories of reading rejecting the notion of a generic reader or a generic work of literacy (Rosenblatt, 1983). Readers as subjectivity come to text in a quest for meaning, as an act of problem-solving, and/or a desire for inquiry (Goodman, Y.M., Watson, D. J. & Burke, C. L., 1996; Goodman, K.S., 1994; Rosenblatt, L. M., 1983; Smith, F. 1994). There is the potential for “dynamic change” when readers choose to actively engage with text (Goodman, Y.M., Watson, D. J. & Burke, C. L., 1996, p. 3) since “...both the knower and the known are transformed in the process of knowing” (Goodman, K. S, 1994, p. 1114). Readers bring to text their lived experiences (these bound by their historical, cultural, and societal place in time) and with this *a priori* knowledge, they interpret and interact with text. Furthermore, “Since comprehending is a constructive process in which readers make sense of text, it goes on during reading and even long afterwards as the reader reconsiders and reconstructs what has been comprehended” (Goodman, K.S., 1994, p. 1118). The reading experience, if powerful and enticing, enjoys a “shadow life” or a kind of after life that lives well beyond the time the reader leaves the page (Birkerts, S., 1994, p. 95).

Project Vision and Design

In approaching authorship of BTAR, we have adopted a poststructural feminist view of reader and text. We resist the belief that language is self-contained, a system to transmit and imprint knowledge. Yet, we acknowledge that the “transmission” view of readers and text is “deeply engrained” and “continues to function, tacitly or explicitly, in much theory, research, and teaching involving texts” (Rosenblatt, 1994, p.1059).

We want instead to create interactive textware that is deliberate in positioning the reader as not only active, but set in context of culture and place as well as cognizant of the role of the authors/text as discourse. So we began our textware deliberately with inquiry. Rather than giving the reader an “overview” from the authors’ point of view, we began each section with a question. Furthermore, we created within the textware itself interactive spaces for readers to respond, to re-write or re-draw responses, or to cluster or web responses, and in this way, make more transparent the transaction between reader and text. By inviting response, we create a form of dialogue between authors and readers in co-constructing meaning.

Objectives and Challenges

The objective of BTAR is to guide preservice teachers through an action research project, fostering the integration into teacher identity the role of

researcher. The interactive textware, replacing the traditional textbook, attempts to facilitate the transformation of “students” into “teacher-researchers.”

Preservice teachers come into our program with a limited understanding of the term “research.” Like “teacher,” the word evokes certain cultural images, fictions, and narrow methodologies that play at their site of subjectivity as they develop a professional identity (Brizman 1991). Their schemata for interacting with text concerning action research, then, is usually shallow. There is a need for scaffolding the learning (Piaget, 1971), to provide cues for the readers, and well as to evoke narrative tools of metaphor and imaging to connect the newer concepts of action research to the preservice teacher’s previous experience and current experience as a student teacher. How could we do this as authors? How could we honor the existence of readers who may share, for example, the experience of student teaching but in drastically different contexts with drastically differing results? How could we resist isolating action research, and instead set it within the context of learning to teach?

Scaffolding Understanding of Teacher-Research

BTAR adopts an inquiry framework as its approach to knowledge development. The text does this by inverting the usual approach to text writing. In most textbooks, definitions and ideas are first presented and explained by the authors, followed by supporting material from other authors, and finally, a prompt for the reader to offer a summary of what has been outlined. BTAR uses the interactive possibilities of interactive textware to instead prompt user understanding at the outset, guiding the user to reexamine and expand understanding through deep introspection, critical examination of ideas of others, and finally, presentation of the authors’ ideas and perspectives. BTAR allows the user to explicitly and actively express, deconstruct, and reconstruct understanding by writing responses into text boxes and creating diagrams and artwork as an integral function of the text itself. This work is saved and recalled dynamically by the text for later re-examination and revision. The technology allows the authors to maintain the centrality of user understanding by keeping user ideas at the front and center of the screen at all times.

Diversity of Students

When students interact with BTAR, they contribute actively to the text itself. Students are invited to write their own metaphors and use native language throughout the text. Rosenblatt (1994) notes that, “When a reader describes, responds to, or interprets a work - that is, speaks or writes about a transaction with a text - a new text is being produced” (p.

1074). Even so, a student/reader’s ideas become part of the text itself, as each instance of BTAR becomes an individualized space for learning that transcends the biases, wishes, and even intents of the authors; in other words, readers assume the authorial and privileged stance typically reserved for the text authors only. While somewhat disconcerting to us as authors and teacher-educators, we believe that this high level of flexibility leads to powerful learning and transformation for students.

Resisting Isolation

Finally, BTAR employs the possibilities of technology to resist the tendency of text to isolate their content within the boundaries of limited content and linear navigation. Paper texts are largely limited by size and page restrictions presenting a “straight line” journey through an action research project. There is no room in the print medium for maintaining connection to either the larger context in which action research takes place or to the inner world of the reader and action researcher.

BTAR, because it is built using a CD-ROM format, is able to employ three concurrent strands—*Doing Action Research*, *Action Research in Cultural Context*, and *Self-Analysis*. BTAR avoids isolation not only by transcending the information limits imposed by print media, but by allowing students to read as readers do—skipping, jumping between text, between strands, or following each strand through in a linear fashion.

In doing this, we provide space for readers to examine their “institutional biography” (Britzman, D. P., 1991) as preservice teachers, to examine the myths and assumptions about teaching while allowing the reader to construct their own meaning about how their ethnicity, gender, class, and other cultural positioning influence their own interpretations of their students, classroom practice, and school culture. We argue here that if reading is transactional, and if action research can be a transformative process for preservice teachers in their becoming a teacher, then our goals as authors of an action research text must seek to re-invent that text. The re-invention must not only honor the readers’ desire to create meaning, but scaffold the reader as preservice teacher to interrogate self, practice, and context in the creation of alternative images of “teacher,” “student,” and “learning.”

Results of the Early Data Collection

36 graduate preservice teachers participated in a pilot study in the summer of 2004 (24 female and 12 male). Participants were enrolled in the first of three courses taught in action research by the authors of this study, and included those seeking elementary, mid-level, and high school licensure. Participants

used BTAR in a computer lab setting for 12 hours during a single week of courses.

Data sets include for each participant a) work completed while using the interactive textware, including between 20 and 30 data entries as well as drawings for each participant. b) observation notes made by a both the teacher-researchers of this study and a third party observer, and c) surveys distributed at the end of the course. From these data sources, the authors were not only able to discern user satisfaction and engagement with BTAR, but were able to evaluate the interactive textware's effectiveness at scaffolding understanding of action research by piecing together the emerging, transformative progression in participants' emerging concept of "action research," and "student-teacher/researcher."

User Satisfaction with the Learning Experience

One component of text effectiveness is user satisfaction with the learning experience. Students in the BTAR test group indicated the interactive textware "has the potential to be a powerful learning tool," agreeing or strongly agreeing with the above statement at a rate of 83%. This response is positive, especially taken in the context of "beta" testing, in which users uncovered numerous technical glitches in the textware previously unnoticed by the authors. Users reported that "supportive" aspects of BTAR included 1) its ability to facilitate an inquiry focus by allowing a constant reassessment of developing ideas and concepts, 2) freedom of pacing and navigation, 3) space to include one's own ideas that are integrated into the text, 4) inclusion of non-text-based learning styles. Aspects reported as "frustrating" included 1) technical glitches and lost work, 2) occasions where too much text was displayed on the screen, 3) monitor fatigue.

Scaffolding Understanding of Action Research

Development of a partnered teacher-researcher identity first requires awareness and deconstruction of the individual discourses surrounding "teacher" and "researcher." The interactive textware guided participants through this process. Initially, participants were prompted by the textware to write definitions of "good teacher" and "good researcher," and to use an integrated drawing tool to draw pictures to accompany their definitions.

Participants described "good teacher" affectively, using nurturing and leadership characteristics such as "good listener," "caring," "helpful mentor," "good hearted," "empathetic," "motivating," and "passionate." Teachers were generally pictured in drawings as happy, flamboyant, involved with people, and female, fitting simplified cultural myths

that cast teachers as maternal care-givers, personal saviors, or both.

"Good researcher" was described by participants very differently, using primarily cognitive terms. "Unbiased," "organized," and "data-driven," were ubiquitous in our students descriptions of "good researcher," and were pictured graphically as solitary, focused, involved with books and apparatus, and most often male. These descriptors fit simplified cultural myths about research that cast researchers as dispassionate seekers and protectors of truth.

These results illustrate the expected lack of "complex concept" (Vygotsky, 1987) in teaching and research identity in preservice teachers. In order to help preservice teachers interrogate their own myths surrounding "teacher" and understand how these myths are often culturally grounded, *BTAR* facilitates deconstruction of personal history, as well as public images of "teacher," through hands-on investigation of how teachers are visually depicted in media, marketed to by manufacturers of gift products and clothing, and portrayed in Hollywood films.

Evolving Definitions of Action Research

The next section of the interactive textware led the participants to construct a beginning definition of action research (AR) through a guided inquiry of AR cases and "expert AR talk." The preservice teachers first completed, using the textware, a text web around the terms "action" and "research." The participants were then prompted to write tentative initial definitions of AR based on the webbing activity. These initial definitions were generally well aligned with the stereotypical images of research.

The textware then led participants in a self-guided exploration through in which they examined and reflected on 1) a series of short descriptions and summaries of preservice AR projects, 2) a series of differing and sometimes conflicting textbook definitions of AR given by other authors (e.g., Mills, 2000), and 3) a creative definition of AR written by the *BTAR* authors. After each successive step in this section, the participants were asked to re-examine and revise their initial definition of AR.

Preservice teacher definitions of AR evolved, slowing integrating elements of both teacher and researcher. For example, one participant's definition evolved as follows:

"...action research is conducting an experiment in which you are not just an outsider but are involved. You seek out a topic of interest, plan how it will be put into action, and hypothesize the outcome. You are also responsible for taking an active part in the research and are the one manipulating what you want to take place. You are observant of the actions of those involved and carefully record the data so that it can later be reviewed and interpreted."—Initial definition, Student 25

“Action research is the opportunity to put into practice the ideas and dreams we have to make a classroom better. Just as the title suggests, it is research in which we take an active stance rather than just merely observing. We pick out a specific curiosity or problem, decide how it relates to the students, and then manipulate the situation to see how the students will respond to our idea. Action research requires observation, recording those observations, and then interpreting the findings to understand the students better. It will also spark many more curiosities and ideas of making the classroom a safe, yet challenging place.”—Iterated definition, Student 25

Note the shift in the above pair of definitions from words like “you,” “experiment,” “hypothesis,” “manipulation,” and “data,” to “we,” “opportunity,” “dreams,” “relates to students,” “curiosities,” and “safe.” The iterated definition preserves useful elements of “research,” while bringing in useful elements of “teacher.” The data contain many examples of similar shifts in understanding, made transparent to the authors by the interactive textware.

Being a Student-Teacher/Action Researcher

The positioning of student-teacher in the classroom makes preservice action research unique. The authors designed a section of the textware in which participants brought personal and cultural discourses of “student” into their evolving identity as teacher-researchers. Several interactive textware activities scaffold this meaning-making process as the reader blends the concepts of “student,” “teacher,” and “researcher” together. Participants then created a final perspective/drawing on becoming student-teacher/researchers.

In the final perspectives, preservice teachers generally framed themselves and their upcoming research project in positive terms:

“It is interesting that when I summarized my ideas about teacher, researcher, and student, they all meant about the same thing. I described them as questioners, discoverers, detectives, and continual changers—like clay.”—Student 7

Participant drawings showed an attempt to blend in a single individual the myths of teacher and researcher. Interestingly, some drawings showed a shift in the view of teacher from “savior” to “hard-working-human-being-juggling-many-tasks simultaneously.” The authors view this complication of the role of “teacher” as a positive step in teacher development.

Author/Instructor Perspectives

Because we were simultaneously authoring, testing and using BTAR in instructing our own students, we came to the pilot test with a unique positioning.

Through re-reading our own observations, we see further evidence that interactive textware has the potential to fundamentally change the way academic texts are used by students and teachers:

“Teaching with the BTAR text this last week has been a sheer emotional experience. I enter the classroom mostly with anticipation but I must admit, some dread - I anticipate the journey, dread any possible technological quirks that can send my stomach flip flopping.... Most memorable is the willingness of students to engage: they *like* it! I can’t wait each day to debrief and tell the success stories!

“There are the long stretches of time when the only sound in the lab is that of keyboards - up to an hour of intense work. Students know they can break any time, but they appear to be drawn into the readings and the activities. Sometimes at break, students ask me questions that make me realize they’ve been to places in the text I haven’t assigned - this teaching is transparently out-of-control. Very few of the students are actually following the suggested sequence of readings/activities that I’ve outlined on the whiteboard. I find I am really very comfortable with this, although I also question myself about whether students are all getting the “necessary information,” which is interesting since if I didn’t think all of the text was “necessary,” why did I write it in the first place?”—Donna

Shifting Positions as Teacher-Educators

Reader engagement and feedback from using BTAR shifted our positions as teacher-educators. We are traditionally positioned as “experts” who “know,” but BTAR highlighted how little we “knew” of our students. By inviting students to openly and actively “dialogue” with us, we found students’ viewpoints and opinions more transparent than in a typical classroom discussion or written response activity following a traditional textbook reading. Students appeared more willing to argue or disagree. They were observed turning to discuss BTAR text and drawings with peers. For example, students would “trade” computers to either look at one another’s drawing or to read one another’s responses. These were spontaneous conversations representing a more authentic learning experience. We overheard conversations between students talking about “teacher movies” and how these movies were useful and dangerous; we heard them comparing these movies to learning theories being studied in another course they in which they were enrolled. Furthermore, as teacher-educators, we were able to immediately “hear” our students by reviewing their writing and drawings and adjust our teaching as necessary. We often began class by using this data to either review or pose additional questions about the content. Because students roamed freely across the text (and because we were able to track this), we could not be deceived into thinking all of our students were proverbially or realistically “on the same page.” We found this allowed us to

individualize instruction and to rely more on student responses to facilitate co-learning.

For example, in a whole group discussion, we might ask how students responded to a certain section in the text. Some students would indicate they “never got there,” but at the same time, those students who had traveled to that section of text, would assume “expert” position and often inform, question, and sometime even encourage those students to “do” the prescribed section. As teacher-educators, we ascribe to this kind of learning, but

did not realize how conventional text positioned us and dictated to a certain extent, our teaching. We are continuing to analyze how the BTAR text re-invents our structuring of class sessions and ourselves as teacher-educators.

Interactive textware has provided, for us, a tool to re-position ourselves as authors/teachers, and our readers/preservice teacher students as complex beings of subjectivities. This repositioning, made possible by digital technology, enabled positive and surprising learning events to occur.

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Dr. Kalmbach Phillips teaches action research and literacy methodology for preservice teachers in the graduate teacher education program at George Fox University. Her research interest in poststructural feminism includes theorizing about how preservice teachers come to acquire the label “teacher” within the cultural confines of gender, race, and class.

Dr. Carr teaches action research and science pedagogy for preservice teachers in the graduate teacher education program at George Fox University. He has studied interactive digital learning technologies in both teacher education and science education. Dr. Carr is currently engaged in research on the design, creation and use of interactive textware for use in academic settings.