"Is it really a natural fit?": The construction of "technology" in composition studies

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"IS IT REALLY A NATURAL FIT?: THE CONSTRUCTION OF "TECHNOLOGY" IN COMPOSITION STUDIES

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
English Composition

by
Irina Fealy
September 2005
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OF "TECHNOLOGY" IN COMPOSITION STUDIES

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ABSTRACT

In recent years, composition studies and internet technologies have had a profound, mutually constitutive effect upon each other. There have appeared numerous publications in which authors suggested various approaches to Computer-Assisted Instruction (CAI) and claimed that this pedagogy formed a "natural fit" with new rhetoric of teaching writing. If we believe that "new rhetoric" centers on students, composition process, and collaboration as the pedagogy, then the question is how CAI fits in with that "new rhetoric."

In this thesis, I analyze two popular CAI writing programs at the college level: Daedalus Integrated Writing Environment (DIWE) and Blackboard (BB). The major focus of the exploration is to find out whether these programs are really a "natural fit" with the high expectations of new rhetoric compositionists.

I analyze both programs from the intersection of social constructivist approaches and process pedagogy and then take three major aspects of that intersection (student-centered learning environment, process pedagogy, and collaborative pedagogy) as the major points in my analysis. Such analysis helps us explore how these aspects
come together in teaching writing and play into compositionists' expectations of technology.

The results of the analysis demonstrate that any software for writing instruction is not a solution and that the compositionists' expectations of technology are unreliable. Compositionists must learn to work around these technologies, considering them as available tools as they craft their pedagogies. It is not technological tools that can transform teaching, but the teachers themselves.
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CHAPTER ONE
THEORETICAL OVERVIEW OF SOCIAL CONSTRUCTION THEORY AND HISTORICAL DEVELOPMENT OF COMPUTER ASSISTED INSTRUCTION IN COMPOSITION

Contemporary rhetoric and composition scholars have become ardent proponents of a "new praxis" which is student-centered, process-oriented and engages collaboration as a cornerstone of pedagogy. This progressive pedagogy views knowledge as socially constructed and negotiated, and marks an epistemological shift in the field of composition and the way we teach writing. The proponents of this pedagogy claim that student-centered classrooms empower students and that collaboration introduces democracy and social negotiation of knowledge into our classrooms.

Compositionists greeted the advent of computer technologies and proclaimed them as perfect tools to enhance and promote democratization and liberalization of the writing classroom, where group learning and collaboration would further empower students, while revision and editing in the medium of Computer-Assisted
Instruction (CAI) would emphasize writing as a process. Most of these scholars embraced the merging of computers and communication technology and announced it as a "new educational frontier, albeit a virtual one" (Hobson 475). The proponents also emphasized the new medium as it facilitated the communication process. In other words, we may say that they viewed technology as a "natural fit" to the new praxis.

While software companies reinforce the notion that it is the tools that make a difference in student learning, compositionists argue that it is not technology but theory and pedagogy that determine the composition classroom. As Richard Lanham writes:

> The most profound changes wrought by computers in the composition classroom are social, political, and pedagogical, not technological. Digital technology enfranchises this revolutionary pedagogy but does not mandate it. (xiii)

Compositionists consider the available tools as they craft their pedagogies, which in their turn are guided and grounded in composition theory. As Dawn Rodrigues claims:

> By trusting their own understanding about teaching rather than turning to the software for
solutions, teachers can create technologically and pedagogically effective teaching environments with whatever tools they have available. (par.1)

Thus, we can claim that technological tools cannot transform teaching writing, but teachers can.

Hence, the question arises: to what extent do computer technologies fit into this "new praxis?" To answer this question let us first define the social constructivist approach of the new praxis and analyze its major components for writing instruction. Second, let us look at such rhetorical constructs as "democracy," "freedom," and "empowerment" that compositionists set as goals for particular, historically and culturally grounded, reasons. Next, let us explore the ties, explicit and implicit, between computer technologies and teaching writing as a process. And finally, let us analyze what writing instructors would expect from software to make it "fit" social constructivist approaches to teaching writing, and whether there can even be such a fit.

Defining the Social Constructivist Approach To Teaching Writing

A group of scholars claim that a paradigm shift occurred in composition studies in the late 1960s and 1970s
as an alternative to traditional rhetoric. Richard Young borrowed the concept of the paradigm shift from Thomas Kuhn's "The Structure of Scientific Revolutions" and by using the term from Daniel Fogarty's "Roots for a New Rhetoric" referred to the conceptual system which he claimed was established by 1900 and governed the teaching of composition for the following three generations as the "current-traditional paradigm" (30-1). According to Young, a new paradigm was emerging that viewed composing as process not product.

In 1982 Maxine Hairston supported Young's notion that a "revolution" or "paradigm shift" was occurring in the teaching of writing and listed twelve features of the process-centered paradigm (80). Whereas traditional rhetoric emphasized the author's corrected finished text and a final product of composing, the process paradigm suggested that a preliminary critique stage was necessary. Process pedagogy became an important psychological model to define writing and explored the connection between experience and feeling and its communication through language.

Linda Flower and John R. Hayes presented writing models for process and emphasized the relationship between
"writing behaviors and concomitant mental activities" (15). David Bartholomae, James Berlin, Patricia Bizzell, Kenneth Bruffee, and others argued that cognitive models did not include the complexity or dynamism of the writing process and presented models which included social constructivism.

As composition moved to professionalize itself and to disciplinary legitimacy, compositionists accepted the term "social-construction" or "social constructivism." Social constructivism maintains that writing (and language) is a social and cultural activity based on the interactions between and within "discourse communities." It also holds that the individual and the community are mutually constitutive and that they constitute each other through language. A social constructivist pedagogy encourages social exchanges as the basis of writing and learning.

Clearly, "process pedagogy" and "social constructivist theory" are not the same thing, and there are a variety of theoretical approaches that emphasize "process" that have little or nothing to do with social constructivism. For the purpose of my thesis, I will focus on that particular intersection of the two constructs "social-constructivism" and "process"; further, for purposes of brevity, I will
refer to this intersection as "constructivism" and the proponents of that approach as "constructivists".

There are a variety of ways to emphasize process in the classroom, but the analysis of constructivist approaches to process will help us explore how they come together in teaching writing and play into constructivists' expectations of technology.

Social construction theory is grounded in philosophy that views language and all knowledge as a social product:

A social constructionist position in any discipline assumes that entities we normally call reality, knowledge, facts, texts, selves, and so on are constructs generated by communities of like-minded peers, 'community-generated and community-maintained' linguistic entities that define or 'constitute' the communities that generate them. (Bruffee 774)

Hence, a social constructionist perspective has shifted the focus onto discourse communities - communities that share the constructs generated by these communities and also share "values, objects of inquiry, research methodologies, evidential contexts, persuasion strategies and conventions,
forms and formats, and conversational forms" in addition to conventions rooted in language (Reither 18).

Thus, we can claim that an important theme in some constructivist composition studies reflects a broad-based epistemological shift in how we view knowledge. Richard Rorty argues that to understand knowledge we must understand the social justification of belief and introduces the term of the "normal discourse" where knowledge is established and maintained (Philosophy 115). Andrea Lunsford elaborates on the definition of knowledge, and claims that knowledge is a product of interaction that is made through a process of negotiation and consensus (93). The statement heralds acknowledgement that the knowledge-generating process is tightly tied to collaboration. If we accept that the knowledge negotiating and generating process is a social construct, then the cornerstone of this process is collaborative learning, which engages students in knowledge negotiating and collective-decision-making practices within their discourse communities. Lunsford ties in knowledge and collaboration: the shift involves a move from viewing knowledge and reality as things exterior to or outside of us . . . to viewing knowledge and reality as
mediated by or constructed through language in social use, as socially constructed, contextualized, as, in short, the product of collaboration. (93)

Hence, we can state that social constructivists view writing as a process and collaborative writing as a pedagogy that effectively models language as a socially constituted medium. Further, we can state that they consider knowledge a social product that is negotiated by communities of peers.

As early as 1998 Fred Kemp summed up the social constructivist approach to teaching writing:

For years the leaders in Rhetoric and Composition have espoused a 'new rhetoric,' a process-oriented, student-centered, collaborative pedagogy. (1998)

Thus, the three major cornerstones of social construction theory can be said to be: (1) a student-centered classroom where knowledge is being negotiated; (2) a process-oriented, recursive approach to writing through which peers respond to each other’s writing and then respond to each other’s responses, thus making numerous revisions to the knowledge generated within the community; and (3) a
collaborative pedagogy that engages students in the process of negotiating knowledge and the writing process.

If we accept that knowledge is a social construct maintained and negotiated through discourse communities that engage in collaboration practices, then the next issue is collaboration and the implications of this term for writing instruction.

Defining Collaboration

"Collaboration" and related terms have been used to encompass a wide range of ideas about people working together. Collaborative writing, generally, is teamwork in which more than one person participates in the writing process and shares the authorship of the writing product. Generally, theories of collaboration involve two or more writers who receive feedback in any form during any stage in the process of writing. Compositionists and writing instructors view collaboration as a way of engaging students with the text and also with the professional community.

Anne Ruggles Gere, another proponent of collaboration, notes, "all writing group theory radiates from the fact that these groups assume a social definition of writing"
Gere claims that "writing groups exist as vehicles for learning" (55). Gere's most important emphasis is on social interaction of collaboration practices within writing groups.

Bruffee, Lunsford, Harvey Wiener, and many others have argued that collaborative learning may be viewed as a form of groupwork that engages students in a process of knowledge negotiating and collective decision-making practices. They claim that the benefits of collaborative writing include self-awareness and self-confidence in student's ability to write, a heuristic for discovery of ideas and of organizing principles, a sense of audience early in the process of writing, an ability to find one's own voice, and editing intervention early in the process of writing. Thus, on the one hand, the shift from a "product to the process" models in teaching writing renewed attention to further research in collaboration learning and revealed the crucial role that conceptions of audience play in writing process.

On the other hand, the opponents of collaboration claim that collaboration practices tend to dominate individuals and repress the expression of difference. David Foster analyzes group practices in writing/reading
classrooms and notes that "a number of critics have argued that such communities [classroom communities] can be inequitable and oppressive" (2). He further observes that the general theme of criticism "is that group strategies in English classrooms are an expression of middle-class liberalism, and fail to address the inequities of power relations and cultural and social differences: "knowledge-making communities ignore or erase difference in order to maintain a single, authoritative, 'normal' discourse" (2). Kate Ronald and Hephzibah Roskelley also support that point of view, writing:

It's a theoretical commonplace now that the solitary writer's voice doesn't really exist, that all language is constructed in communal contexts. And yet, in academic contexts, the continuing belief in the original and separate voice leads to the false assumption that collaboration causes an individual writer's voice to get lost, that writing produced in tandem becomes devoid of personality, responsibility, and creativity. (262)

While opponents argue that the use of consensus in collaborative learning is an inherently dangerous practice
that stifles individual voices, proponents claim that collaborative learning engages students in a process of knowledge negotiating and collective decision-making practices. John Trimbur notes that "consensus . . . can be a powerful instrument for students to generate differences, to identify the systems of authority that organize these differences" (603).

The focus of the research about pros and cons of collaborative writing seems to concentrate on one main issue: whether teaching collaborative writing is more effective than teaching product-oriented grammar-based theories. For example, Daryl Haley cites Comprone:

most of theoretical work focused on collaboration in composition classrooms argues that such oral interaction [peer conferencing] in writing courses has positive effects on the composing process of students, and therefore also a positive effect on those students' writing texts.

(3)

Let us assume that the term "process" encompasses writing as a recursive process that engages knowledge negotiating through collaborative writing, through which students provide and respond to the feedback of their peers. Then
the next step would be to analyze the impact of collaboration on writing and the way collaboration works in peer response groups.

Collaboration and Peer Response Groups

Writing instruction reflects the growing appreciation for the value of conversation; hence, a peer writing group is a way to encourage students to participate in the conversation, to write and revise with the help of peers' feedback and awareness of the audience. Peer collaboration, writing groups, and peer conferences have become a pedagogical tool in a wide range of teaching/learning contexts. For example, Trimbur discusses the basic rationale for teaching collaborative writing, "... teachers proceeded by trial and error to organize students in groups so that students could pool their knowledge and experience by working together" (1985). A heightened awareness among composition teachers of the importance of social interaction in the writing process presents a problem for theorists and composition teachers: how to organize writing instruction through the group interaction of the students.
Research shows that classroom talk and small group conferences can be a positive aspect in the writing process. For example, Andrea W. Herrmann notes:

Research indicates that students writing without reactions from a writing group often do not anticipate an audience. A Comparative study of freshman writers and professional journalists revealed that the journalists thought of their audience and readers more than the students did. The study concluded that students need audiences in addition to the teacher/grader. (2)

The constructivists’ approach to teaching writing emphasizes a recursive process through collaboration in which peer response groups are discourse communities that negotiate and generate knowledge, become active audiences, and establish a position of authority over their texts. The interactive nature of peer groups allows students to exchange abstract ideas, suggest concrete revisions, generate and share knowledge, and negotiate to establish a position of authority over their texts.

Now that we have discussed the major aspects of social constructivist approach and process pedagogy, let us explore how CAI plays into expectations of the
constructivists, analyze whether computer technologies promote and enhance democratization and liberalization of the writing classroom, and discuss what is implied by the terms of "democratization" and liberalization." Since we defined that the first cornerstone of constructivist approach as a "student-centered classroom," let us explore how computer technologies affect teacher-student relationship.

The Teacher’s Authority and Physical Classroom Arrangement

Some compositionists claim that the teacher-student relationship changes significantly due to the very shape of the classroom equipped with computers. For example, Carolyn Boiarsky claims that "A computerized classroom can blur the line between teacher and student and enhance students’ active participation in their learning" (50). Boiarsky suggests that computer classroom should imitate newsrooms with workstations arranged in clusters of three to five desks where "The classroom inevitably becomes a workshop in which students, as young writers, learn to write by writing, acquiring skills as they write with the help of a teacher who now assumes the role of editor" (55). Cluster plan proponents argue that the division of the classroom
into workstations arranged in pods of four to six students encourages small-group collaboration that is integral to writing instruction; they further claim that the design is inherently student-centered.

Many composition theorists and teachers have raised the issue of decentralized classrooms and desk arrangements to enhance and encourage collaboration among students. According to Reynolds (1988), even the physical layout of a computer lab can encourage greater interaction among students. Reynolds claims that the overriding principle for computer classroom design is to facilitate communication and observes that a significant amount of collaboration occurs around tables, desks, bulletin boards, and file cabinets.

Another example of teacher-student relationship is Todd Taylor’s analysis of the issue of classroom authority, student-centered pedagogies that encourage democratic distribution of classroom authority, and “new methods of coercion and control that have recently been devised to maintain traditional types of authority in computer-assisted classrooms” (110).

However, the question is if the same arrangement can also benefit a traditional classroom. Thomas T. Barker and
Kemp write about collaboration techniques in decentralized classroom where students work in groups:

If desks can be positioned in circles, then four or five groups must hold discussions in the same room at the same time. Noise and distraction abound, and no one can escape the suggestion that this is traditional instruction in a traditional classroom within the traditional class period but disguised as project work . . . (12)

Though desk arrangement is a very important issue for collaboration, especially for computer-mediated collaboration, it is not as vital as the teacher-student relationship that determines the nature of authority in a classroom, as authority cannot exist apart of its constituents, instructors, students, administrators, process theorists, or legislators. What really matters is that the main role of the teacher becomes that of a facilitator, when the teacher does not lead the discussion and edits students' papers but, rather, guides the students and helps them master writing as a joint effort in the learning process and the academic inquiry.

According to Barker and Kemp, there exist many problems in every attempt to decentralize the classroom.
For example, they claim that since students lack reading or editorial skills of teachers:

many students are simply at a loss when it comes to reading critically. They ape editorial remarks as well as they can, and generally fall back on vague affirmations or rejections ("I like your ideas." "You have problems expressing yourself."). (14)

Moreover, Barker and Kemp observe:

Although the psychological theories that support attempts to decentralize the classroom and denormalize the text seem intuitively right, the sheer managerial problems of reducing the dominance of the instructor by empowering the student seem insurmountable. (14)

The authors introduce a term "network theory" and suggest that networked and programmed computers dissolve the proscenium teacher-centered classroom as, “The essential activity in writing instruction is the textual transactions between students” (15).

Barker and Kemp contrast computerized classrooms in which computers serve only as text-communicating or text-sharing devices to networked computerized classrooms in
which computers are not only networked but also programmed with the instructional system software. The authors argue that in such classrooms while the instructor still retains a considerable authority as she is responsible for curriculum and evaluation, the programmed software empowers students to participate in the discourse of their community. They write:

The instructional system software . . . manages the verbal transactions of the networked computer-based classroom in a way that is roughly analogous to the instructor who stands at the front of a proscenium classroom and directs activities, but with many advantages over such a traditional situation. In contrast to stereotypical expectations, networked instructional systems generate many times more student-to-student transactions than traditional instruction, even when such traditional instruction is augmented by peer critiquing and group work. (17)

It may seem that to make a classroom student-centered it is enough to arrange desks in circles and to ensure that computers are networked and programmed with the
instructional system software. The question is whether it is the software that makes a classroom student-centered or the pedagogy applied that ensures more liberating and democratic atmosphere in the classroom. To answer this question, let us explore whether the knowledge-negotiating process becomes more liberating in a networked computer classroom and analyze the terms “democratization” and “liberalization of writing process.”

Democratization and Liberalization of the Writing Classroom through Computer Technologies

Besides the assumption that a networked computer-based classroom decentralizes the class and facilitates students’ textual transactions, compositionists also claim that networked computer classrooms affect the very nature of students’ textual exchanges. They argue that computer-mediated textual transactions are more democratic and bring the knowledge-negotiating process to a new level, which is also more liberating, as compared to either traditional classroom or computer-based classroom equipped with only text-sharing devices.

Before we explore whether computer technologies make writing instruction truly democratic and more liberating
than traditional way of teaching writing, let us define what is implied under the two terms “democratization and liberalization of writing process.”

As can be seen from the previous examples from Barker and Kemp, Taylor, Cyganowski, and others, writing instruction in traditional classroom is teacher-centered: the teacher dominates the conversation, closely monitors the discussion, and is the only audience that reads and grades students’ writing. Peer response groups that provide feedback through oral discussion expand the audience but fail to address the inequities of cultural and social differences.

When class discussion moves to the virtual space, the situation dramatically changes: the students get more freedom to express and argue their opinions as they no longer face each other physically but do it through textual exchanges where one cannot detect an accent or pronunciation typical to certain social groups or regions, where one cannot see the color of the skin or guess the gender of the writer. For example, Becky Rickly speaks about her research on “students who are ‘silenced’ as a part of the normal oral classroom.” Rickly observes that one of the most fascinating statistics she collected was:
the HUGE difference in direction of
discourse: in oral classes, almost ALL discussion
was aimed back at the teacher, reminiscent of the
'call and response' pattern of old, rather than
the student-centered process approach we tend to
espouse. In InterChange, however, almost all of
the discussion was student to student: they
really came to see each other as 'knowers.'
(Kairos 1998)
Rickly also notes that according to her research female
students were much more active in virtual discussions.
Joel English also believes in the democratic nature of
virtual discussion. In the same listserv conversation, he
refers to Gail Hawisher's article called "Electronic
Meetings of the Mind," writing:
indeed online conferencing grew up in the context
of social constructionist theory, and it espouses
that theory completely: it allows voices to come
together and create knowledge together in a
democratically modeled (Friere) environment,
where no voice is in control over others,
and... no dominant character necessarily can
take over (unless the others let that person take
It is a true language-creating-communal-knowledge experience. Moreover, the participants of virtual discussion can speak anonymously by taking pseudonyms thus making it even more difficult to figure out the gender, race, or class of the speaker. For example, Rickly observes that as students participate in online discussions:

- they experience an 'out of body' phenomenon . . .
- they are no longer using traditional social constructs such as gender, race, apparent economic level, etc., to influence how they react to others. (Using InterChange)

Moreover, the teacher moves from the dominant position - behind the desk in the center of the room - to a "peer" position at the computer station, thus making the presence of authority less threatening. This re-position allows even the most shy students speak up and lets all the class participate more actively without the fear of being interrupted or ridiculed.

Emily Hughes writes about her experience in online discussion while in a teacher training shop:

The experience of reading the screen and following the conversation while I typed my own
response felt like moving with the rhythm of galloping horses. As a participant in a teacher training workshop, I was part of a team of horses: I bowed my muzzle to the screen and galloped full force ahead, determined to keep pace with my colleagues.

Hughes compares her experiences when she was in the role of the student to her feelings and emotions while she switched her role to that of the teacher:

Later, when teaching my own students . . . I was pleasantly surprised that instead of becoming the jockey who steered our direction with spurs and whips, I was still just a horse. I tried to keep the discussion on track by writing responses that summarized comments and moved the discussion forward, but students could choose to follow or dismiss my cues . . . I liked the way InterChange virtually erased the teacher-student hierarchy by encouraging students to listen and respond to each other without relying on me to fill in gaps.

Thus, theoretically speaking, the writing process becomes more liberating as virtual textual exchange empowers students and allows their voices to be heard irrespective
of class, race, or gender. Besides, the conversation through text helps students build their writing skills at the same time as they practice expressing their ideas clearly. The goal of virtual textual exchanges shifts from achieving consensus to negotiating knowledge, an act by which each individual voice has the chance to be heard instead of being stifled by group dominance. Moreover, the writing process becomes more democratic as that new freedom of expressing one's opinion and presenting the arguments in support of the opinion shifts the power relationship in the classroom from teacher-centered to student centered where each participant is equal.

Thus, computerized network classrooms make writing instruction more liberating and democratic under certain circumstances. As the teacher allows the students have the textual exchanges flow in the direction the students want, the students acquire more power from the very principle of decentralization: the teacher moves from the role of the dominant authority to that of facilitator who, though guiding the students along the road to knowledge, does not dominate and closely screen the textual exchange. As for the question of whether it is specific technology or particular software that liberates or democratizes writing,
it is doubtful; it is not software but the teacher who decides.

Collaboration in Electronic Writing Environments

Electronic communication introduced new ways of collaboration and new variations in written language use: students' oral discussions moved from class-limited to web-based discussions; electronic text has made the physical process of composing easier, allowing quick reorganization and editing capabilities; and Web space introduced a new rhetorical space and new audiences. On the Web, non-linear, alternative structures allow online audiences to navigate writing through hypertext, creating new complex perspectives and heightening awareness of traditional rhetorical elements.

Electronic media have revolutionized the composing process, encouraged participation in writing activities. For example, e-mail and online chats provide a non-threatening atmosphere and encourage even timid writers, who usually keep silent in face-to-face discussions, to actively participate in online discussions. Besides, the Web provides an area, a space where the writers can present their work to a real and larger audience, which motivates
students' writing, increases opportunities for collaboration in writing, improves students' attitudes toward writing, and encourages students to produce more text.

Traditional Classroom Collaboration Compared to Collaboration Practices in Electronic Environment

The interactive discussing, generating, and evaluating ideas comprise the nature, the core of collaboration in the writing classroom. The active interaction allows each participant of the collaborative effort to make a contribution to the discussion, to have a chance to voice his/her opinion, to get feedback from the teacher and other participants, and eventually to integrate the ideas into writing (with subsequent revision and editing to produce the final product of this collaborative effort). In short, collaboration in writing instruction comprises various activities we undertake during the invention and composing phases of writing and can range from a dialogue between two persons to a complex interchange between a writer and a group of readers for feedback, responses, input and suggestions.

In traditional classrooms (classrooms not equipped with computers) such discussion will be either class-wide,
teacher-led discussion or it will be a small group discussion, followed by individual completion of the writing assignment. For example, Barker and Kemp compare traditional classroom and computer-mediated collaboration and observe:

The traditional writing classroom presumes that the students are the writers and the instructor (or grader) is the sole reader . . . The students gain insight into how effective their writing is through the fourfold feedback: grades, editing symbols, margin comments, and writing conferences with the instructor (6).

The authors also claim that even the shape of the traditional classroom emphasizes the leading role of the instructor, thus making the discussion orchestrated by the teacher who controls the nature of responses, asks rather specific questions, and calls on students at random. Thus, the teacher is in charge of her class collaboration effort in any discussion while the students feel rather tense as any of them may be required by the teacher to speak in front of the whole class to confirm that she was following the discussion, has completed the reading assignment, and is able to express her opinion that is in conjunction with
the class discussion. Barker and Kemp also note the authoritative, teacher-centered nature of the instruction: the instructor remains the pivotal agent in question-answer. She produces the questions and she evaluates the answers; she directs the class dynamic, and no student would doubt that (11).

Thus, we can say that as a rule the teacher and the most active students in the class dominate traditional class discussion, while other students remain passive participants in that kind of collaborative effort. Composition theorists call such classrooms "teacher-centered," where the writing instructor leads and dominates the conversation.

On the one hand, such collaboration has very positive features: it is effected at a high speed supported by facial and body language, the feedback is spontaneous and immediate. On the other hand, collaboration in traditional classroom has certain negative features, as it is mostly teacher-centered instruction while the work of peer groups is more of the critiquing nature than constructive criticism and suggestions that students can benefit from. Carol Cyganowski also supports that point of view and criticizes group techniques in the traditional classroom.
She claims that the techniques "can require structures unnatural to conversation and to putting peer suggestions into direct practice in inventing or revising writing" (70).

These are just a few examples of those in the field of composition who criticize traditional classroom strategies of collaboration while claiming that computer technologies have become an integral part of teaching writing and have favorably changed collaboration practices. Thus, if we agree that collaboration is a key component of constructivists' approach and empowers students to truly negotiate knowledge, then we can conclude that a student-centered classroom is vital for constructivist writing instruction.

If we assume that writing is a form of conversation carried through a text, then we can claim that collaboration in writing is a textual process of interaction and negotiation of knowledge in pursue to justify our beliefs, to challenge each other's biases and presuppositions, an effort to establish and argue our values and interests. If writing is an interactive textual process, we can claim that CAI takes that process to a new level, providing students a virtual space where they can
present their ideas, argue their point of view, and get feedback from their peers not through oral conversation but through textual exchanges.

Besides, if we agree that collaboration is a heuristic for discovery of ideas and of organizing principles, then the expanded audience, that virtual space provided early in the process of writing, empowers students by providing them an ability to find their own voice while negotiating their ideas and looking for arguments that could convince their audience. Moreover, computerized classrooms make it possible to have the textual exchange empowering for the students by its very principle of decentralization where the teacher moves from the role of the dominant authority to that of facilitator.

Now that we have determined that CAI promotes collaboration and also assists classroom decentralization, let us explore whether there is software that would be "perfect" or "natural" fit.

Software Requirements and Constructivism

Now that we have determined that the constructivist approach views writing as a recursive process that requires collaboration to ensure knowledge negotiating, early intervention into writing process, and emphasizes student-
centered learning environment the next question is to determine what kind of software would "fit" these requirements to make writing a truly liberating and democratic process.

Some proponents of computer-assisted instruction claim that special instructional software is absolutely necessary to ensure that collaboration succeeds and the students' writing improves. For example, Barker and Kemp argue that "without the management provided by the collaborative software, whatever interaction takes place would probably collapse into the kind of undirected social discourse one finds at a party" (17).

On the other hand, some proponents claim that writing instructors do not need sophisticated software and networked computer classes, as for example the proponents of minimalist approach to computerized collaboration practices Schroeder and Boe suggest to "focus on the traditional tasks involved in teaching writing, allowing experienced teachers to adapt the machines to their own classroom methods, strategies, and content" (31). The authors' main goal is "to keep the focus on writing, to make the computer as inconspicuously simple as a pen and paper" (31).
While the push for technological literacy triggered the research in the field of composition how to use technology wisely, the compositionists that teach writing from the constructivist approach seek software that would encourage not only collaborative writing and peer response group revising, but that would also allow each individual voice to be heard. They seek software that would enable each student to express his/her opinion without fear of being ridiculed due to accent, color of their skin, or gender: such software would transform the process of knowledge negotiating into a truly liberating and democratic process that will take place in student-centered classrooms where the teacher guides the students by helpful remarks and constructive suggestions.

While software companies are offering numerous programs for writing instruction, the compositionists keep looking for electronic tools that could meet their expectations. Are the expectations too high? Some compositionists decided not to wait for some "perfect" software and made an effort to create a program that would meet constructivists' requirements. As a result, there appeared Daedalus Integrated Writing Environment (DIWE) program, the software created by writing teachers and
targeted for teaching writing at a college level. DIWE is mostly focused on writing as a process and is an integrated package of writing/thinking tools designed with writing classroom in mind. The software is comprised of six modules, each designed to address a specific task or stage of producing a piece of writing. The program focuses on interactive written discourse and encourages collaboration, critical thinking skills, and communication that reflects the constructivist approach to teaching writing and is effected through the network of computers.

While the proponents of constructivist platform were enjoying networked computer writing classroom and the software focused on writing as a process, the software companies presented Blackboard on the market. Though Blackboard electronic environment (BB) is not restricted to teaching only writing, the software allows writing instructors to build an interactive course website to support traditional classroom or to teach an entire course on-line. The enthusiasts that welcomed BB claimed that the program further broadens class horizons by taking discussion from the limits of a networked computer classroom to the infinity of Internet, thus expanding the audience, further decentralizing the classroom, and
enabling students engage collaboration on a wider scale. Since both programs are widely used in teaching writing, let us research these two programs in order to see to what extent they might fit into constructionist pedagogy.
CHAPTER TWO
ARE DAEDALUS INTEGRATED WRITING ENVIRONMENT
AND BLACKBOARD THE PROGRAMS THAT ARE
A "NATURAL FIT"?

The main question that this chapter will deal with is to analyze the two most popular programs from that particular intersection of constructivism defined in chapter one. The main objective of the analysis is not whether DIWE and BB do what they say they will, but rather how these two very popular software packages play into (and, perhaps disappoint) constructivists' expectations of technology. While analyzing both programs let us look at the model of discourse community that the programs foster. How do BB and DIWE allow instructors and students to form their own discourse communities within the larger construct of what the interface recognizes as "normal discourse?" Let us also explore how participation is regulated and visually articulated. How is voice constructed? Is one model of voice privileged over another? Who gets to participate and who doesn't? Who gets to decide who gets to participate? The answers to these questions will help us to come up with an idea of what constitutes (and is encouraged as) the
ideal model of a learning community within the larger context of the "normal" discourse of the community that produces Blackboard and DIWE. In other words, it will help us find out whether any of the programs meets high expectations of constructivists.

While exploring DIWE and BB let us focus on these three cornerstones of constructivists' expectations: student-centered classroom, writing as a process, and collaboration.

Brief Overview of the Daedalus Integrated Writing Environment

Daedalus Integrated Writing Environment (DIWE), winner of the 1990 Educom/NCRPTAL award, is a commercial software package that is designed to facilitate collaboration, communication and revision in a learning context. DIWE is comprised of six modules, each designed to address a specific task or stage of a writing process: Invent, Write, Respond, Mail, InterChange, and BiblioCite.

Invent is a module that helps students to explore and develop topics through a series of questions that include standard prompts. Instructors can also create their own prompt series using PromptManager.
Write is a word processor designed for in-class writing. It provides standard editing, formatting, and spell checking capabilities and creates files that are compatible with other word processors.

Respond module guides students through the process of reading a peer’s draft and writing suggestions for revision. It also includes standard prompts for specific kinds of writing and general revision.

InterChange is a space for online class discussions such as brainstorming, analyzing readings, and other collaborative activities. This module allows transcripts of class discussions to be saved, reviewed, and modified for other uses.

In brief, DIWE is an integrated and integrating writing environment, designed by instructors for computer classrooms. It is an open-ended program as it allows the teacher to personalize the entire experience to whatever their pedagogical goals may be with the help of the Prompt Manager. It integrates two approaches to writing instruction: the process approach described by Flower and Hayes and the collaborative approach popularized by Kenneth Bruffee and others. The program is mostly used in
computerized classroom to support traditional classroom instruction.

Student-Centered Classroom and Daedalus Integrated Writing Environment

Chapter One discussed the conflict of the teacher-centered classroom emphasizing that "the sheer managerial problems of reducing the dominance of the instructor by empowering the student seems insurmountable" in traditional classroom (Barker and Kemp, 15). If we believe that computer-based classroom decentralizes the classroom and empowers the students, let us see what DIWE does to that effect and whether constructivists’ expectations are met in this respect.

First, let us look at DIWE’s interface. It appears friendly with the major focus on the aspects of writing and on the surface seems student-centered space. However, if we look at Invent and Respond features, we will see that the students are still locked in the labyrinth of prompts, either default or written by teachers.

Second, let us look at teacher-student relationship, in particular at teacher’s authority and control. Barker and Kemp argue that networked computer classroom dissolves
the proscenium classroom and changes teacher-student relationship in the classroom:
The computer-based classroom, when networked using an egalitarian instructional system such as the Daedalus Instructional System, provides a different diagram. Here, the links or lines of contact proceed from every workstation to every other workstation. No link is privileged. There is no master control over them. If the instructor wishes to participate in the discourse, she must choose a workstation and participate at a transactional level equal to that of any other person sitting at any other workstation...

Networked microcomputers dissolve the proscenium classroom. (16)
The statement seems to solve the problem of teacher’s control and authority in a networked classroom, transforming it into genially student-centered. On the one hand, the potential advantages of synchronous conferencing over traditional oral classroom discussions allow decentralizing the classroom and empowering the students: the participants cannot be physically singled out, no one can be interrupted, and everyone is ensured a voice on the
network. DIWE, as one of the programs that represent Local Area Networks, or LANs, link computers together and, in effect, link people together. Students are able to conduct conversations, share ideas, view each other's work, and even work collaboratively in real time as well as asynchronously.

Thus, we may say that networked computers have a possibility to transform the computer from a tool used for individualization to the tool used for socialization. For example, Cynthia Selfe notes that student-centered discussion ensures increased participation, which does, in turn, "encourage new, different, even revolutionary patterns of information exchange and conversations" (124-5). Margaret Barber, a professor at Colorado State University, has been employing DIWE for the last 11 years and also supports Selfe's observation by claiming that InterChange function of the program is actually "freeing" in ways. Selfe used the Interchange function for gender-role switching exercises and teaching argumentation exercises: she observes that using InterChange is like using a MOO, only simpler.

Students who used synchronous conferencing software seem to be overwhelmingly positive about their experiences,
sometimes maybe too positive. For example, Hawisher and Selfe warn against an "uncritical enthusiasm" in the "Rhetoric of Technology and the Electronic Writing Class." They write about a survey conducted at the University of Texas in which 61% of the students claimed that DIWE’s InterChange function "allowed all members of the class to contribute to the discussion." In addition, 37% felt that the program had the most impact on them as writers (Butler, "Report" 7, 9). All the above seems to prove that DIWE promotes classroom decentralization, liberates the students out of the classroom shoebox, and moves the instructor from the forefront, literally or figuratively, as in traditional (often lecture-led) classes.

However, what is empowering in one context might be disabling in another. For example, Billie J. Wahlstrom warns:

Although computer networks can encourage a multiplicity of voices - a heteroglossia - in the composition classroom, the technology has a reverse side about which we have spoken little. Making students computer-literate on networks may not enable them to find a voice once they leave the classroom. (182)
Besides, physical constraints of the classroom allow the instructor to choose the authority/power role. For example, if the instructor chooses to stand in front of the class during the class period, it will put her in a traditional position of authority even in a networked computer classroom. If the instructor chooses to arrange desks in a circle and to join the circle as one of the members in a traditional classroom environment, it will diminish the overt authority of her physical presence.

The claim that any networked computer classroom, DIWE included, enables each student express her opinion is also doubtful. First, the InterChange discussion still allows identifying teachers and students by language cues, by the level of complexity of their discourse, and by their names that precede their comments.

Another problem is "flaming," that may be very disruptive and shaped by the dominant culture of the classroom. Though, as Barker and Kemp note, the networked computer classroom is "textualized," and the text is recursive: it allows students go back to it, comment on it and present new information, students may never benefit from the discussion and spend their time on testing boundaries (flaming). Moreover, any LAN (DIWE is no
exception) still confines the students within the computer classroom where the teacher’s presence is both physical and virtual, thus reminding the students who is in charge of the classroom.

If we assume that constructivist approach is to promote student-centered pedagogy and empower students, not teachers, by allowing each voice to be heard with the teacher’s guidance, not orchestration, then we can see that DIWE is not a constructivist panacea. Though the program attempts to promote student-centered pedagogy it still empowers the teachers, not the students and enables the teacher’s control over every activity. Thus, we may say that as for teacher-student issue DIWE fails to meet constructivists’ expectations.

Does Daedalus Promote or Impede Writing as a Process and Collaboration as Pedagogy?

Constructivist approaches view writing as a recursive process, a social act of communication and social interaction. The epistemology of constructivism provides us with a model of writing that is not a step-by-step hierarchy of development, but a particular community in which each member has a voice in the construction of
reality, or knowledge, which is reached through a social consensus. If we believe that education, as Rorty has put it, is a process of learning to "take a hand in what is going on" by joining "the conversation of mankind," and agree with Bruffee's assertion that "collaborative learning is an arena in which students can negotiate their way into that conversation," then the question is whether DIWE meets constructivists' expectations in promoting writing as a process and engaging collaboration as a pedagogy. The answer to this question will help us to find out the extent to which DIWE meets constructivist expectations of technology.

**Network Theory and Daedalus' InterChange**

Barker and Kemp suggest that network theory supports a "computer-based collaborative approach" to writing. They define the network theory as follows:

The essential activity in writing instruction is the textual transactions between students. These transactions should be so managed by the network as to encourage a sense of group knowledge, a sense that every transactor influences and is influenced by such group knowledge, and a sense that such group knowledge is properly malleable.
(responsive to the influences of each transactor). The result of textual transactions so managed is a deneutralizing of text itself and a greater emphasis and skill on the part of the transactor in rendering such text (15).

The authors also claim that a software package which allows students and teachers to take full advantage of constructivism and process theories underlying the pedagogy is DIWE.

Marilyn Cooper and Selfe also support Barker and Kemp's claim about the power of network computer writing classes and describe network forums as spaces which "allow interaction patterns disruptive of a teacher-centered hegemony" (847). They oppose traditional classroom discussions that are centering on the teacher to networked computer classroom discussions and argue that networked computers are:

... powerful, non-traditional learning forums for students not simply because they allow another opportunity for collaboration and dialogue - although this is certainly one of their functions - but also because they encourage students to resist, dissent, and explore the role
that controversy and intellectual divergence play in learning and thinking. (849)

Let us take DIWE's InterChange feature to explore if the software really supports collaboration in a new sense as opposed to traditional classroom with the focus of exploration on writing as a recursive process through dialogue, peer review, and revision.

Daedalus InterChange feature is probably the most important of the Daedalus software in terms of collaborative learning and writing as a process as it allows students to engage in synchronous discussion of topics, develop their ideas, negotiate their points of view, and express their opinions. The medium allows any number of students to participate in the discussion simultaneously with the help of the split screen. The upper portion of the screen displays the initial prompt about the topic, the students type their responses, choose "Send" and their message appears in the upper half of the screen. Students may use their own names or they may adopt pseudonyms. The program allows scrolling through the previous messages (that are in the upper window of the screen) at any time during the discussion and respond to one another. Instructors may choose to stay out of the
discussion entirely, or they may enter into the ongoing conversation at any time during the discussion.

The InterChange feature also allows setting up group conferences and its medium is fluid as it can be adjusted at any point in a conversation. The advantage of InterChange is that it allows all students participate, provides each participant of the conversation with equal chances of expressing his/her opinion, and no one can interrupt any of the participants. The feature allows students to learn by doing, not by listening to the teacher’s lecture.

Moreover, when students have completed an InterChange session, instructors can transform the on-line discussion into a transcript, which is automatically saved to network. The transcript can be printed out for future references and students can also access this transcript through “View a Document” feature.

It seems that the feature is ideal for student-centered discussion and promotes collaboration, but it also depends on the instructor. For example, Lady Falls Brown observes that when she wanted students to consider specific questions and decided to type the questions in all caps it “caused the conversation to become more teacher centered
than student centered" (80). Overall, Brown finds DIWE to be "nearly perfect" from the position of collaborative learning and the social construction of knowledge. Peter Sands also supports Brown's enthusiasm, and though admitting "how buggy it can be in the DOS version," notes, "there is significant magic going on, particularly in the InterChange module."

Most of the teachers find DIWE's InterChange function ideal for brainstorming, idea generation, and class discussions. In DIWE's newsletters teachers at the University and college level speak in detail about the InterChange function emphasizing the advantageous and problematic sides of the program. Shalin Hai-Jew sums up the general opinion of teachers that employ InterChange for writing classes. Shalin finds that InterChange function provides a student-friendly environment that makes students:

think on their feet and overcome inhibitions about self-expression. InterChange helps students share their thoughts, emotions, experience, and memories in an impromptu environment, and encourages them to suppress the internal critic that can often limit classroom discussions. In
InterChange conferences, an idea or thought becomes tangible and 'real' when it is translated into electronic hard copy.

According to that enthusiastic summary, DIWE meets constructivists' expectations in engaging collaborative pedagogy. However, it would be extremely short-sighted to claim that DIWE does not promote collaboration, it would also be overrating to claim that DIWE perfectly meets the expectations of constructivists. The main shortcoming of InterChange is that InterChange is a closed-environment chat room where students can communicate only with each other and their instructor. Though DIWE reinforces the dialogic nature of argument and knowledge construction so dear to constructivist approach, "the advantages of such small networked places seem increasingly limited in the age of the information superhighway" keeping the students' communication within a safe environment of their classroom peers (Nancy Peterson).

Besides the fact that LANs overall go out of date as they are much more expensive to maintain than Wide Area Networks (WANs) and every LAN, DIWE included, needs its own support staff to manage hardware and software.
configurations, there is also the matter of who is in control. Peterson argues:

LANs can allow teachers to recreate current-traditional classrooms if they so choose - and many, of course, do - thus undermining what research in composition studies has been telling is for quite some time now: the more control writing teachers exercise at the level of utterance, the fewer risks student writers will take. (par. 3)

Thus, we can see that though the program promotes collaboration and writing as a process, it still limits the discussion to the small group of peers, and hence does not expand the audience. Besides, instead of empowering the students the program has all the features to empower the teachers and may even recreate current-traditional classroom if the teacher chooses so.

Moreover, even Fred Kemp, the compositionist who founded DIWE as a tool for collaboration to promote writing as a process, in 1999 on the WPA-L list acknowledged the limitations of LANs in general and DIWE in particular, saying that “computer-based classrooms have reached their peak as a concept,” suggesting that LAN-based approaches
are dying or dead. Kemp further observed that "DIWE has instructional grit. I'll bet Daedalus has something of the same quality up its sleeve for the WEB."

Thus, compositionists seem to agree that "computer-based classrooms have reached their peak as a concept," suggesting that LAN-based approaches are dying and the Web is all. The new server-side and client side web capabilities can duplicate almost anything that a LAN program can do, and the advantages of cross-platform performance and unified browser interface (mostly) make well developed web capabilities much more useful" (Kemp, WPA-L listserv discussion).

If we assume that compositionists are right and "the Web is all," let us then move to Blackboard, since it is a web-based program and explore whether BB meets the high expectations of constructivists. While exploring, let us focus on the same three cornerstones of constructivists' expectations that we used to analyze DIWE: the student-centered classroom, writing as a process, and collaboration as pedagogy. The analysis will help us answer the question whether BB may meet high expectations of constructivists.
What is Blackboard?

Blackboard (BB) is a program in a box that can be used for both purposes: to support traditional classroom and for distance education purposes. It is a virtual space, a course management system similar to WebCT or Nincenet and houses students' assignments, syllabi, discussion lists, and their grades.

If DIWE has been designed strictly for writing instruction, BB system can be used for many purposes, and too often, like other course management systems, it serves as a way of presenting a traditional course online without altering it, so-called the course-in-a-box (CAB). Each participant of BB virtual space has a login screen and his/her own Blackboard portal. The portal includes a list of personal tools (calendar, tasks, grades, address book, personal information), a list of all the classes in which the user is enrolled as a student or as an instructor, and course announcements or events.

The student also sees a course announcement page with a set of option buttons: announcements, course information, course documents, assignments, communication, virtual classrooms, external links, and tools. The teacher has an
access to three more buttons below the general menu: resources, course map, control panel.

Student-Centered Classroom and Blackboard

If we compare interfaces of DIWE and BB, we’ll see that unlike the DIWE’s friendly interface the menu buttons in BB are arranged in the order that suggests hierarchy with the emphasis on the teacher as the authority, thus embodying teacher-centered virtual space, which in its turn affects the model of discourse with the teacher dominating the discourse and forming her own discourse community. Thus, the interface itself already suggests teacher-centered environment.

Now let’s look at the teacher’s control and authority in a web-based classroom. In this respect the Blackboard environment seems friendlier and more student-centered, as it goes beyond the classroom and is Internet based software as opposed to LANs. However, if we look closer at BB space we will see that students are still confined to their small community of classmates and teacher, who embodies distinctive messages about education and authority. Moreover, it may, in almost all cases, be supervised by the instructor and the system administrator. Noting the
restrictive nature of the software, Davis and Hardy compare BB’s space with panopticon, employing the metaphor to illustrate the disciplinary and surveillance functions of the Blackboard while they refer to Foucault’s admonition that “visibility is a trap:”

Given the surveillance functions of Blackboard, it is tempting to read this electronic space metaphorically in terms of its carcereality rather than domesticity, panopticon rather than house. (par. 3)

On the one hand, some compositionists claim that such distribution of power is a move to a more positive set of teacher-student interaction. For example, Marilyn Cooper argues:

a teacher who sets up a classroom discussion online is not giving or sharing power with students, but rather is performing an action that sets up a range of possibilities for action by students . . . Constitute relations of power. (146)

On the other hand, some compositionists see the power relations in the Blackboard’s space “in less liberating
ways." For example, Davis and Hardy note that Blackboard space reminds a Panopticon. The authors observe:

There is no more panoptic image in Blackboard than the Statistics page . . . The resulting dissymmetry between seen and seer extends educational discipline beyond its traditional reach . . . As a mechanism of discipline, Blackboard enables modes of omnipresence . . . (par. 10)

Though later on in the article the authors admit that "the metaphor of Blackboard as a panopticon may finally seem overstated," they still claim that the metaphor:

does serve to remind us that the way spaces are structured, even (and perhaps especially) if they are virtual, alters significantly the relations of power and knowledge in the communities that use them. (par. 15)

Thus, we can see that Blackboard does not empower students, as it sooner empowers the teachers and the administrators. If we take Blackboard’s communication area that combines visual and written communication into one tool, the Virtual Classroom, we can see that it is still the instructor’s choice to give full control over the drawing area and the
chat room to students or to disallow student manipulation of any area of the classroom. The instructor's role is still that of authority that requires students "raise their hand" before being "given the floor", thus not only interface, but also Virtual Classroom offers additional instructor controls and retains teacher's authority. Thus, we may say that as for teacher-student relationship, BB does not meet constructivists' expectations as it sooner empowers teachers, not students.

Bearing that in mind, let us look at Blackboard's electronic environment from the position of teaching writing as a process and employing collaboration as a methodology.

Blackboard's Discussion Board

Since the purpose of Blackboard's analysis is to find out whether this web-based software meets high constructivists expectations in relation to writing as a process and collaboration as a pedagogy, we'll mainly focus on two features of Blackboard program, namely Virtual Classroom and Discussion Board.

Virtual Classroom is the collaboration tool designed for live, synchronous interaction and supports a text-based
Chat environment. The advantage of BB’s Virtual Classroom feature as compared to DIWE’s InterChange is that synchronous discussion may take place in the computer classroom or the participants can log on from their homes or whatever place they choose to be during the discussion. In addition to text-based chat, the Virtual Classroom provides a collaborative whiteboard, group web browsing, private question-and-answer, and breakout room capability. As well as DIWE’s InterChange all chat sessions can be logged and archived.

The major difference between DIWE’s InterChange and BB’s Virtual Classroom is that BB’s Virtual Classroom conversations are conducted with fixed name tags that come from the BB’s overall system, while DIWE’s InterChange provides an option of pseudonym discussions that free the students from their material bodies and allows students to be more creative and more outgoing in their textual exchanges. On the one hand, pseudonym discussions can result in “flaming,” thus detracting students’ attention from the main topic of the discussion, on the other hand, pseudonym conversations help participants overcome the barriers of sex, race, and economic status, thus providing each participant equal opportunity of expressing their
opinions openly. Thus, BB's Virtual Classroom is more restrictive as a collaboration tool as it makes every participant more 'visible' in this particular virtual space.

Moreover, Blackboard, like other course management systems, does both: enables communication and at the same time limits it. While Virtual Classroom space allows students to feel free to encounter each without the drag of a static text that must be properly shaped and grammar right, it also restricts participants as they have to remember that "each utterance has two audiences: the conversation partners to whom it is addressed, and the instructor who controls the space in which it occurs" (Davis and Hardy). While the advantage of Blackboard, as compared to DIWE's InterChange, is that it combines visual and written communication into one tool, the Virtual Classroom with the Whiteboard for real time visual communication, it also gives the instructor control over turn taking rules in the discussion as opposed to more student-centered discussions in the space of InterChange, "... only the instructor can start a virtual chat, and the chats can always be archived and examined as concrete pieces of writing at a later date" (Davis and Hardy).
As for claims that synchronous discussions allow each student equal opportunities of participating in the ongoing conversation, both, InterChange and Virtual Classroom are virtual spaces that empower the participants with efficient reading and typing skills and keep slow readers and typists out of discussion.

Emily Hughes expressed her concern about the students “who can’t keep pace with the galloping speed” (par. 4). While Hughes writes about the problems students encounter in InterChange discussions, we may assume that slow readers and writers will encounter the same problems in any synchronous environment.

In this respect Blackboard has an advantage as it provides virtual space for asynchronous communication, such as Discussion Board. The question is whether this friendlier environment provides students with equal participation opportunities. As opposed to the immediate dialoging space of Virtual Classroom, Discussion Board allows conversation flow, the forum has threads with subsequent responses, all left-justified and arranged in order of posting. The threads and subject lines are clear markers of an engaged discussion. The interactions are presented without any hierarchy other than the way posting
occurs in time. However, besides the fact that group asynchronous discussions are conducted with fixed name tags, according to Davis and Hardy:

Blackboard insists on a certain representation of the authoring voice as originating from a single, contained individual, . . . and acts as a solitary, formalized author throughout the space. (par. 5)

Besides, the instructor screens the postings and can check the number of responses the posting generated and the number of times the posting has been read, thus providing the instructor additional power of control over the discussion. In both, DIWE and BB, spaces the instructor still lurks in the background and supervises students’ discussion to make sure the students stay on track and follow the assignment guidelines. Thus, we can conclude that though Blackboard promotes collaboration and helps revision as students have access to the discussion archives that allows them to incorporate their peers’ comments and insights into their writing, the collaboration is supervised by the instructor.

Following the argument about collaboration in the Blackboard space, it would seem that since BB is an
Internet based software, the program takes collaboration learning environment to a new level as it goes beyond the classroom, thus providing students with a wider virtual space. However, Blackboard’s potential for its virtual space is not infinite, like Internet for example, and within its spaces students will encounter dead ends and the virtual voice of restriction imposed by BB administrators and the teacher. Davis and Hardy observe that BB’s virtual space only seems “alluring because it is web-based, yet it is also web-resistant.” They write:

Students are confronted not with the World Wide Web but with a syllabus, not with an open system of infinite links but with a closed system of a single course. And it is within the contained space of the course management system that the disciplining of the student occurs. (par. 5)

The authors also note that “Blackboard’s practical containment of the web can foster an illusion that our students are working in a public space, when in fact the space is semi-public at best” (par. 6). Though the authors admit that Blackboard still “makes it easy to take the goals of a student-centered class one step further, potentially introducing peer response and peer critique
into every level of the composition process," the space is still very restrictive as the participants are enclosed into the space of their community and are "cut off from the chance encounters with difference that the public sphere is usually seen to entail" (par. 6). This apparently open student activity is both protected and directed by the spaces that contain it. Hence, we can see that, though web-based, BB is still a restrictive environment that keeps students within the limits of a closed community under strict supervision of the teacher.

To What Extent do Daedalus and Blackboard Meet Constructivists' Expectations?

If we view teaching writing from the constructivist approach, will it mean that DIWE or Blackboard are hostile to collaborative environment and teaching writing as a process? Well, yes and no. On the one hand, Internet and web publishing expands the content of students' writing, promotes continual revision throughout the semester, and can completely change the way students write as it provides access to real, diverse, focused audiences, contexts, and experiences outside the writing classroom. On the other hand, the Internet can be a scary, crowded, and confusing environment, especially unwelcoming to those who encounter
it for the first time. DIWE and Blackboard environments can help to introduce students into the wilderness of the Internet.

We may conclude that neither DIWE nor BB meet high expectations of constructivists, since both programs only bring them (constructivists) closer to make it a better fit, to ensure that collaboration and writing as a process can be brought to a higher level, to empower the students and make their voices heard beyond the classroom restrictions, to expand discourse communities, thus liberating and democratizing the classroom as constructivists would expect.

The compositionists in the foreground of the research are still looking for the best software that would liberate both the teachers and the students, and that would bring the issues of collaborative learning environment to a new level and expand the classroom horizons. So, if we agree that Blackboard and DIWE limit the horizon and do not exactly fit in the constructivist approach, then what? Is there such a thing as a natural fit? Is there any program that exists or some "perfect" program of the future that may claim to be that natural fit? What are the alternative ways to teach writing and to implement the constructivist
approach on a new level that modern computer technologies offer us? Chapter Three will discuss these alternatives.
CHAPTER THREE

ALTERNATIVE APPROACHES TO COMPUTER-ASSISTED INSTRUCTION

Most compositionists agree that the main problem with the existing software is that it still contains students within the limits of the classroom and this contradicts constructivist approaches to teaching writing. Hence, the main issue for research in the CAI instruction is finding alternatives to make writing instruction more liberating and democratic, to empower students and help them find their voice, to help them overcome barriers of gender, race, and economic status. In other words, constructivists are still looking for programs that would meet their expectations and would better fit their ideology.

It would be presumptuous to claim that this research will provide some perfect solutions to make CAI a really "natural fit" to the constructivist approach, since, clearly, in a constructivist model, "natural" is itself a problematic term. However, it is useful to explore the new trends of CAI in the field of composition and analyze what approaches would really help compositionists to more truly liberate and democratize writing instruction. In other
what technologies would meet high expectations of constructivists and help them bring CAI to a new level? This chapter will explore some new web-based computer technologies that are most widely used in writing instruction with the main question in mind whether these latest trends in CAI fit in with constructivist ideology.

Brief Overview of Web-based Approach To Teaching Writing

Fred Kemp, in his open letter to Kairos in 1996, writes:

I'm sure the Internet is going to rapidly go far beyond mega-firehose power. The problem has never been Mac vs. Windows, Daedalus vs. Connect, the hardware problem or the software problem, but rather the knowledge problem -- the 'wetware' problem ('wet' referring to both the organic nature of the brain and the sweat most of us generate when our students turn on their workstations wondering if writing instruction, that most resistant to change of all human endeavors, is actually going to be different this time). (2)
In 1996 the Web roared and there appeared an abundance of web-based programs, like WebCT, SyllaBase, Etudes, and others. While some writing instructors were experimenting with the web-based software that still kept students within the classroom boundaries, others claimed that the web is all and we should broaden class horizons by using the Internet. In 1999, John Francis Ronan from the University of Florida attacked closed-source systems, like DIWE and Blackboard, on the acw-1 listserv wrote:

my first real contribution to this list was a flamewar over the utter uselessness of propriety systems like Daedalus, no need to rehash that contentious argument, but one thread that comes up again and again, in various disguises, is support and usage, open source: not a software, a philosophy. (par. 2)

Thus, the most progressive compositionists who once praised computer-networked classroom, such, for example, as Taylor and Kemp, also come to the conclusion that web-based tools are a step forward as compared to LAN-based software or such, though web-based, closed systems as Blackboard or WebCT. For example, Taylor acquired DIWE program in 1998,
yet in 1999 Taylor acknowledges in the acw-l listserv discussion:

However, I would not make the same choice today because our campus' immediate and long-term future requires us to think in terms of web-based instructional tools, not LAN-based ones. A week ago today on the WPA-L list, Fred Kemp himself wrote, 'computer-based classrooms have reached their peak as a concept,' suggesting that LAN-based approaches are dying or dead. (par. 2)

J. Unger adds her voice in favor of web-based instruction by reiterating Elizabeth Pass's words "match the technology to the task," and claims that "all too often, instructors fail because they match the wrong technology their pedagogical goals." Unger looks at software from the constructivist approach and argues that if we agree with Bruffee and consider that "writing is primarily a social act ("Social Construction" 784) and "the matrix of thought is not the individual self but some community of knowledgeable peers and the vernacular language of that community" (777), then it is logical "to develop such social constructivist theories as discourse community and contact zone into a viable classroom pedagogy," so that we
"try to find a way to put students into real social situations that have meaning for the students" (778). Unger criticizes close-end software as she views such programs as artificial boxes that contain students within "artificial communities made from the class itself." Thus, we can see that the compositionists find it vital to expand the classroom by providing the students more possibilities to encounter disparate audiences and introducing them to new discourse communities.

When such programs as DIWE or BB appeared on the market, the proponents of group collaboration enthusiastically proclaimed online peer workshops as a "natural fit" to social constructivist approaches. They praised the new possibilities of textual exchange via networked computers and web-based programs like Blackboard, WebCT, or CommonSpace. What everyone ignored was that those new discourse communities were still locked in the box of the classroom and actually were artificial communities. While most proponents of peer-response workshops claim that getting and giving feedback in a small group setting enables students to enlarge their concept of readership as those peer groups expand the concept of audience from the teacher as the sole reader to a group of peers with
diverse, and sometimes, contradictory reactions, Unger voices the doubts of some compositionists and argues that peer-response workshops still keep the students within a box of the class and their peers. Unger, who looks at computers and software from constructivist position, observes:

Ironically, a problem creeps in when these theories [social-construction] are applied as pedagogy to the writing classroom. That problem is simply boredom. After a short while, the students realize that they are writing to the same idea-exhausting set of people day after day. The reason is that the class' discussion groups are artificial communities made from the class itself. Most collaborative classrooms remain closed systems, and according to the Second Law of Thermodynamics, they must degrade into disorder. (par. 3)

Unger's argument against "artificial communities" in no way contradicts the research in composition that indicates the advantage and effectiveness of online collaborative pedagogies as compared to traditional lectures, the argument just pinpoints the major problem of close-end
software, namely at the limitation of online classroom environment. It also suggests that Internet can help us "break the boundaries of the local-area-classroom and open the system up, whether it be simply emailing others on the Internet, publishing essays on the World-Wide-Web, or having synchronous conferences in a MOO."

Provided we accept the claim that the students will benefit if we expand classroom boundaries and move students out of the classroom shoebox, what will happen if a closed community of the teacher and class peers is moved to the open community of the Internet and the World Wide Web? Will that move make CAI fit more closely the social constructivist concept of teaching writing? With that major question of the research in mind, let us explore how compositionists use the WEB and Internet to liberate and democratize writing instruction.

If we assume that the constructivists view writing as a recursive process based on an awareness of audience. If we believe that collaboration pedagogy employs the social plurality of opinions and knowledge negotiation that results in meaningful revision. Then the question is what the web provides to make the writing process more liberating. In other words, let us explore what Internet
and web-based approaches to teaching writing gain from constructivist approaches and analyze whether that Internet-based approach makes CAI more useful. Since it is next to impossible to analyze all aspects of web-based computer-mediated writing instruction let us focus on the issues of audience, identity, and the nature of collaboration strategies, as the Internet based instructions affects those issues most.

Internet and the Issue of Audience

As Rebecca Busker notes, "The gradual movement of rhetorical theory from oral to written has brought with it a complication of the classical notion of audience" ("Audiences"). While Ong and others argue that a writer's audience is a fictional construct employed by the writer to address some imaginary "invoked’ audience, Reiff, Ede, and Lunsford claim that for effective writing it is necessary to write for the audience “addressed.” However, the online medium affects the concept of audience as the discourse changes its nature from the writer-reader relationship to the physical audience of online discursive communities:
the reassertion of the physical audience in AOD [asynchronous on-line discussion] spaces complicates attempts to fictionalize and inscribe them [audiences]. However, the 'collectivity' which Ong ascribes to the oral audience cannot truly be said to apply to the AOD audience, either: the fluidity of participation and such phenomena as crossposting make defining audience impossible. (Busker, screen 3, par. 3)

Thus, according to Busker, we can say that the shift from the classical notion of "audience" that was based on listeners present during the discourse to modern and postmodern views of "audience" that focus on potential readers for some text do not fit the notion of online "audience." Each online audience member has the chance of immediate reversal of reader's and writer's roles, and textual exchanges are somewhere between oral and written types of discourse.

However, if online communication is effected via textual exchanges, we can still claim that though the Internet has changed the concept of audience, the medium still allows addressing a specific audience, especially in writing instruction. Although the Internet encompasses
practically limitless virtual space, online discussions do not happen in some unidentified virtual space within the Internet framework, but take place within rather definite virtual spaces, such as, for example, listservs, Usenet groups, or chat groups, where each virtual community member is both reader and writer, sharing the same interests and forming rather specific audiences.

While the Internet opens up a more complex and varied opportunities of communication and provides enormous possibilities for writing instruction to expand the concept of audience and take discussion on a new level by breaking the boundaries of the classroom, the medium also impacts the ways the participants construct their audience. It also affects audience-related skills, such as awareness of cultural differences, anticipation of audience questions, and appealing to the values of readers. Moreover, asynchronous and synchronous online discursive spaces, while reinforcing the dialogic nature of discourse, also change the character of the discourse by complicating it through issues of identity, gender, and race.

The Internet allows writing instruction to expand classroom boundaries by expanding the audience and making students aware of writing as a social act. How, then, does
that expanded audience affects students' writing in online medium? What happens to students' voices?

The Issues of Identity

Online interaction in cyberspace allows students to find a certain freedom from their predetermined identity, through the possibility of pseudonymous discussions where students may bait each other with provocative persona, cross-gender themselves, or cross-dress, especially in discussions of gender issues. The opponents of web-based discussions may argue that LAN-based environment, such as DIWE InterChange for example, also allow students the same options. However, if such pseudonymous discussion takes place within the classroom, it isn't only the language, types of comments or references made that may betray the student's identity, it is also the fact of the classroom boundaries. For example, Barbara Monroe comments on the issue of identity in her traditional class with an added networked classroom component during electronic conferences:

The class immediately developed something of a split personality. During the electronic segment, the class was personal and social, playful and
thoughtful, supportive and challenging . . . But as soon as they left the computer room, they would fall into awkward silence, like strangers on the street. In class, my efforts to generate spontaneous class discussion invariably fell flat . . . The response was always directed to me, and that discussion thread dropped, students rarely responding to one another. (par. 3)

That "split personality" demonstrates that students do not feel really protected behind their virtual pseudonyms or various personas in the containment of the classroom, which may still stop some students from participating in the discussion. Moreover, Monroe admits:

The last day in our electronic conference, I entered the computer classroom to find students turned around in their chairs, responding face-to-face to online remarks. Only after we shed our virtual selves did the class begin to emerge as an actual community. I'm not sure if our virtual intimacy/anonymity personalized and protected us, enabling our eventual sense of community - or prevented and postponed our developing face-to-face friendships. (par. 4)
It is unclear whether such electronic conferences within the boundaries of the classroom really empower students to voice their differences in virtual space, since their material bodies betray their virtual personae. What happens when we move electronic discussion to true cyberspace where participants can communicate with each other only online through textual exchanges? How does that kind of online discussion affect students’ voices, their identity, their sense of audience, and finally their writing? What electronic environments allow participants to communicate in truly liberating environments?

Leslie Harris argues that one of such liberating virtual spaces is the MOO space (Multi-User domain, Object Oriented) that allows students to communicate in a truly democratic way with disparate groups of writers/readers, thus making the students aware of different audiences. Besides, the MOO space also provides students a more liberating way of communication, since the students are allowed to express their opinions in a more sincere way without their true physical identities interfering. The students are entitled to take any virtual identity, male or female, white or colored, which, in its turn does not allow the issue of race, color, or gender interfere into
discussion, thus offering different conversational power structures and enlarging their concept of readership that makes all the participants equal, as their digital personalities will not be sitting next to them in class later on. Harris joins the camp of compositionists who argue that Internet communication provides the truly liberating and democratic medium. Like Unger, Harris further develops Unger’s idea of the classroom boundaries and notes that the major problem of face-to-face or electronic peer conferences within the boundaries of classroom is that students:

. . . have an audience of very similar peers — fellow students at a similar stage of development, who share similar backgrounds, who have chosen to attend the same university. Because of these similarities, the students share many basic assumptions that remain unstated, and they have little sense of what is necessary to persuade a disparate audience of the validity of their views. The MOO can provide such a disparate audience. Remote learners can ‘meet’ on the MOO, conducting synchronous class sections in a text-based environment. (screen 2, par. 1)
Harris also claims that this online environment also encourages shy students who would not participate in the classroom discussion for fear of being rejected or contradicted. Moreover, though the students’ instructor is still a part of the audience, their online participants’ instructor may also hold a different point of view, thus shifting their perception of audience.

Beth Hewett, another supporter of Internet-based instruction, also notes students’ awareness of disparate audiences in online communication. In a study that discusses computer-mediated discussion and revision Hewett observes an unusual hybrid nature of messages in online discussion in that they are personal, yet public messages, as all participants are able to read and respond to the message, which makes students aware of how individual readers respond to writing differently and help them recognize the biases, opinions, and preconceived notions of their audience. Other scholars also agree about a new awareness of audience in these relatively new writing situations. For example, Kemp claims, that “the value of written conversations and extended e-mail exchanges (such as found in Internet discussion lists and on NetNews discussions) lies in the organic and open-ended nature of
knowledge making they display . . ." (187). However, Kemp also notes that writers’ awareness of audience is just developing, while Leslie Blair observes that “Students may go from feeling completely unaware of how other readers will interpret their message to a stage of heightened paranoia—fearing the way that their writing can be misinterpreted” (screen 5, par. 1)

Thus, we can see that on the one hand Internet can encourage some of the students express their opinions in a more outgoing way: the shy can hide behind their virtual personas, female students can be more outspoken without the fear that their male correspondents would snicker at their remarks because of their gender, ESL students are encouraged to “speak” as nobody can hear their accents that sometimes interfere in oral discussions, minorities and colored students feel real equal as nobody can see the color of their skin. On the other hand, the Internet sometimes proves to be a very scary environment where one can never be sure about the real person’s reaction to textual exchanges, as the real people are hiding behind their virtual bodies. However, scary or not (anything can be scary, even face-to-face discussions if a person is afraid to speak up in fear of being rejected or ridiculed),
MOOs still provide a unique environment for real-time communication that allows imaginative play and exploration where:

people can describe themselves as they wish, setting their gender to one of many possibilities. ‘Leslie’ can be male, female, neuter, royal, plural (among others); he/she/it/we/they can set his/her/its/our/their description to reflect chosen gender. Other users cannot see their fellow players . . . , and so they rely on reduced and manipulable clues to determined the identity categories — for example, gender, race, and age — that appear at first glance. Since such identity clues are manipulable, the environment relies to a strong extent on trust.” (Harris, screen 1, par. 2)

Harris observes:

MOOs are excellent environments for the teaching of writing. They are text-based worlds, created by language and fostering an articulation of one’s ideas in writing — that is, as texts composed at the keyboard, written for others and in front of others. (Screen 2, par. 6)
Sounds too good to be true? Right.

Although MOO environment can be great for synchronous sessions where text exchanges allow everyone to express their opinions simultaneously without being interrupted, where every participant can choose to respond to only one comment or to address all the participants, where playfulness and seriousness of discussion are intertwined in the web of characters and spaces, MOOs also have their challenges and problems. For example, Michael J. Day while enjoying using the MOO for himself and his classes points out certain problems students encounter in the MOO environment. According to Day, some students have the feeling of frustration and a sense of being left out, as the screen scrolls quickly and one can’t follow the discussion, hence the students find the speed of interaction daunting.

Besides, it’s hard to participate if the student doesn’t have good reading and typing skills. Sometimes, disagreements and flaming occur just because text fail to convey the irony or sarcasm intended, thus making a comment "look downright rude or affrontive. Students can get angry, and because of this, feel demoralized." Day, as other MOO-using teachers, also notices that some discussions,
especially "cross-cultural issues on the MOO. . . can . . . result in conflicts which polarize them, resulting in an 'us' versus 'them' standoff between groups of students."

However, Day also suggests that though:

we need to alert students to the possibility of these problems; we also need to encourage them to analyze and discuss these interactions (perhaps by using transcripts of the conversations) with the class to shed light on the effective and ineffective use of rhetorical strategies in computer-mediated communication. (par. 3)

Now that we have discussed pros and cons of synchronous communication in the MOO environment that encourages the liberating spirit of knowledge negotiating, let us look at that virtual space from constructivist point of view.

If we believe that writing is a process where knowledge is constantly negotiated, then we should agree that the diversity of opinions that MOO encourages, the expressive and dynamic text of virtual exchanges, the very fluidity of the text where only opinions matter irrespective of identity issues makes that virtual environment a much better 'fit' to constructivist approach to teaching writing.
The possibility of freedom of exploration through mistakes and discoveries, agreement and disagreement, will result in true knowledge negotiation, so dear to constructivist approach. And where can students have more chances to encounter that diversity of opinions and negotiate knowledge, where can they explore the variety of opinions and empower their voices by expressing their own points of view irrespective of their identity, age, race, gender, class? They can do it only if we broaden the classroom horizon by allowing our students go public, employing the versatility of Internet possibilities.

It isn’t only the MOO environment. There’s much more to the Internet, and MOO is only one of many other possibilities that the Internet provides to broaden the classroom boundaries - listservs and Newsgroups, IRCs (Internet Relay Chat), and M**s (an abbreviation for MOOs, MUDs, and MUSHs, all synchronous chat spaces), also provide students numerous opportunities to make their voices heard, to write for wider public and to tremendously increase the audience. Unlike MOOs that ensure only textual-based communication, Web writing has also a rich potential and creates a new medium for teaching skills and strategies we value in composition. In support of web writing, Madeleine
Sorapure, another supporter of Internet-based instruction, argues that the Web:

provides student writers with an audience beyond the confines of the classroom, and it provides them as well with genuine rather than hypothetical contexts in which to situate their writing. Publishing their work on the Web may serve to increase students' motivation to write correctly and well, and it may also enhance their awareness of rhetorical dimensions of audience and purpose. Because of unfamiliarity with this medium, the various stages of their composing process may be more evident to students as they decide on the content, structure, style, and tone of their site. (par. 7)

Many compositionists note the fact that the Web provides students with a "real-world" audience - an audience external to the classroom - and may help increase students' motivation to do their best writing. Students will most probably be motivated to achieve clarity, correctness, and stylistic effectiveness when they realize that their writing will appear on the Web for anybody in the world to see.
Besides, the Web also allows incorporating visual and audio elements to convey information and interact with a specific group of readers the website is focused on. But it isn't only the audience and the issue of identity that helps students to conquer the vast domain of Internet virtual reality by enabling them to interact with other professionals, writers, and tremendously increase the readership. The Internet also dramatically changes the collaboration aspect of knowledge negotiation, so dear to constructivists.

The Internet and Collaboration

Since "collaboration" is a rather broad term, let us narrow it by assuming that there are mainly three forms of collaboration: (1) collaboration as teamwork, when several students combine their efforts to complete a project; (2) collaboration implemented through peer response groups, when students use readers' feedback to improve their writing; and (3) "intertextual" collaboration which employs the idea that electronic writing allows to borrow and blend text from multiple sources.

If hypertext environment on the Web adds the multi-voiced intertextual nature to writing as a collaborative
process, e-mail, mail-groups, conferencing and World Wide Web publishing enhance the collaborative process and teach students to adapt their writing styles to different media. While collaborative projects require special effort in overcoming conflict and involves coordinating activities to achieve a shared understanding, participation in peer electronic workshops offers alternative spaces and conversational power structures as opposed to traditional classroom settings. Since Chapter two has already discussed the collaboration process in networked classrooms, let us explore how Internet affects the collaboration process.

Peer collaboration has been accepted as a standard feature of writing pedagogy where peer response workshops enable students to get quick feedback on their writing. The proponents of peer response groups claim that the feedback in a small group setting enables writers to enlarge their concept of readership. While computer technologies added the socially oriented electronic communication to the already socially oriented peer response groups, online collaboration via the Internet has expanded the boundaries of the classroom by involving a much bigger audience. Bruffee's 1984 articulation of the concept of collaboration provides an excellent model for the type of collaborative
environment most writing instructors hope to foster in their classes:

Our task must involve engaging students in conversations among themselves at as many points in both the writing and the reading process as possible . . . to organize students for these purposes is to organize collaborative learning . . . (400)

However, Bruffee's idea to provide "a particular kind of social context for conversation, a particular kind of community - a community of status equals: peers" does not exactly fits in with electronic collaboration, if such collaboration happens via the Internet (400-401). The phrase "a community of status equals: peers" fits only if collaboration takes place among peers that form that particular community. However, if student writers publish on the Web we cannot call the feedback on students' writing received from "like-minded" peers, since Web readership presents a multi-voiced and disparate Internet audiences that could represent a great variety of opinions. Besides the feedback from their instructor and classmates, students benefit from the exchange of ideas with experts and
students from other locations that can be both, nationwide and international.

Moreover, the benefits of collaboration rely upon redefinition of traditional identities and authorities in virtual environment where students provide their own audiences online in place of artificial constructs of teacher or teacher and classmates as audience. Claudine Keenan suggests that online interaction also adds fun and playfulness. Keenan notes:

playfulness . . . as an aspect of composition instruction, the idea that has recently begun to garner more attention in its importance to educational goals, and not just in elementary education . . . In “Genderbending on the Mush” John Oughton also celebrates the playful capabilities of M** while exploring new identities through the use of characters. (par. 6)

In “Programming for Fun: Muds as a Context for Collaborative Learning” Amy Bruckman also finds the ease of online collaboration due to playfulness and availability of audience for completed work.
Thus, it seems that collaboration via the Internet is a better fit to constructivist approach since it better meets their expectations of empowering students and liberating learning process. The enlarged readership does provide a different feedback, which can be both enlightening and constructive, or confusing and meaningless. Besides, Web publishing attracts very different readership that we can’t exactly call a community in the traditional understanding of the term. For example, Terry Tannacito notes that “beneficial peer response results from establishing a community . . . , and it seems even more important with electronic peer response in an online environment that can easily become impersonal and uncaring” (par. 12).

Writing is a complex and cyclical task that requires more than formulating text to express ideas, and writing instruction also involves strategies and management constraints to assure effective writing. Thus, we should remember that collaboration through the Internet presents certain challenges that can be advantageous as well as confusing and scary. If we agree that community is the basis for successful collaboration in peer response groups and in collaborative projects then the focus, even in
online collaboration, should be on building a community in which every participant shares values and interests. However, the question is whether such constructs as knowledge, facts, texts, and selves should be generated by communities of "like-minded peers" to make them fit constructivist approaches. If we answer "yes," then collaboration via the Internet does not fit social constructionism well. On the other hand, if we agree with another concept of constructivist approach, namely that knowledge is socially negotiated, then the Internet provides far greater opportunities for that knowledge negotiating by leaving the constraints of the class boundaries with its "like-minded peers" and expanding the number of participants, hence inviting a variety of opinions to make that knowledge negotiating process truly liberating and democratic.

Moreover, the two most important characteristics of the World Wide Web are its ease-of-use and the ability of authors to connect their ideas by creating hyperlinks to other pages. That latter feature promotes the use of the Web as a collaborative intellectual space in which text can be combined with visual/audio features, the global audience is within the reach of everyone in the world, and the
barriers to publication are greatly reduced. The Web is a global hypertext system whose embedded links allow an interactivity between the reader, writer, and medium that re-figures the writer-reader relationship. Although that twisted writer-reader relationship of hypertext sooner empowers the reader than the writer (since it is the reader who makes the decision about destination and content of the text), hypertext is still a unique interactive feature of the Web that can be employed in teaching writing, as another form of collaboration activity online.

Conclusion

We have been exploring and analyzing CAI from the intersection of social constructivist theory and process pedagogy. Based on the definition of constructivism for the purpose of the analysis, we have agreed that constructivists value student-centered classrooms and engage process-oriented pedagogy and collaboration in writing instruction. The main question of the analysis was to find out whether constructivists are right to claim a close fit between CAI and the new rhetoric they practice. In other words, we were going to explore whether some particular software can meet constructivists high
expectations to make writing instruction liberating and democratic.

If we accept the constructivist approach to teaching we can claim that the Internet's open-ended possibilities make computer-assisted instruction a better fit than closed-system software, both LAN-based, such as DIWE, and web-based, such as Blackboard.

If we assume that we should encourage students to participate in the "conversation of mankind" then we should make such conversation more liberating and democratic by expanding the class boundaries and to let them "negotiate knowledge" with disparate audiences that Internet provides.

If we believe that it is through discussion and conversation that we endeavor to discover things about each other or to understand the topic at hand, then we should allow that conversation to happen with a wider audience to make students aware of various opinions and to provide them with numerous opportunities to argue their beliefs and points of view.

As the result of such online conversation students can become better writers since the conversation is effected through writing and becomes permanent, accessible to others at a later time in the form of transcripts. While
discussion boards can be useful for fostering higher types of skills (such as application, analysis, evaluation, and synthesis), synchronous methods, though sometimes confusing and disjointed due to scrolling text, allow for heightened interactivity and language play.

Moreover, both kinds of the discussion, asynchronous and synchronous, make the classroom more student-centered, another aspect so dear to constructivist approach, where the teacher is sooner coordinator and facilitator than a figure of authority that guides the conversation allowing students argue their agreements and disagreements.

However, we should be aware that the participants in such conversations who can construct themselves anonymously and experience an "out of body" phenomenon. They no longer use traditional constructs such as gender, race, apparent economic level, etc. that can result in pushing limits, testing boundaries, and even be used as a means of harassment. It is especially important for students who are new to the net or for those who are used to the relative "boundary-lessness" of the classroom. While the students learn the dynamic and the power/responsibility relationship in an environment that does not depend on physical cues, it is the teacher’s responsibility to teach them the rules of
netiquette, thus making the ongoing conversation in
Internet productive vs. unproductive, as in "flaming."

However, we should agree that if we believe in the
constructivist approach of student-centered environment we
should remember that the world is not arranged in rows with
everyone focused on the authority. If we believe that
students do better if they learn together, then we must
agree that students will benefit if the writing instructors
allow them to be free to explore, to make mistakes and
discoveries, as collaboration and knowledge making cannot
succeed without disagreement and negotiation. The idea of
play and diversity in reading and writing, in publication
and collaborative learning through the medium of online
environment, can guide our students to more expressive and
dynamic texts that differ dramatically from printed text.

The alternatives we have discussed in this paper are
not the only ones to make writing instruction more
effective and to make it a better fit to constructivists’
expectations. Teachers assign to set up "blogs" (weblogs or
virtual spaces for publishing online) to journal about the
readings assigned and the insights the students develop
throughout the year, as well as ethnographic journals and
out-of-class "free" journals, thus making writing more
public and democratic. Teachers also use numerous websites for online discussions within the boundaries of their classrooms or with wider audiences. Teachers use hypertext features to promote intertextual collaboration and to empower both writers and readers. Teachers do much more with the options Internet provides to make writing a more liberating experience.

And the final question is "so what?" Is it electronic tools or special software packages that will make a difference in teaching writing? Is there any problem with the constructivist approach that computer technologies do not meet their expectations? I'd answer 'No' to both questions. It seems that constructivists' expectations about technology are often too high. Writing instructors have to learn to work around these technologies, as compositionists just consider the available tools as they craft their pedagogies, which in its turn are guided and grounded in the composition theory. I'd agree with Lanham's argument that "digital technology enfranchises ... revolutionary pedagogy but does not mandate it" (xiii). To conclude my argument I'd like to repeat Rodrigues' words that I cited in Chapter One:
By trusting their own understanding about teaching rather than turning to the software for solutions, teachers can create technologically and pedagogically effective teaching environments with whatever tools they have available. (par. 1)

Thus, we can claim that technological tools cannot transform teaching writing, but teachers can make technologies a better fit to their pedagogy and ideology as ongoing research in composition makes it more promising.

Overall, this particular research is a minor part of the ongoing process in computer-assisted instruction where compositionists explore the possibilities of various software packages and the opportunities that the Internet provides to make writing instruction more effective. Though computer technologies facilitate democratization and liberation of writing classrooms it is important to view technology critically as we craft our pedagogies.
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