

Scott Trent

Dr. John Gooch

Digital Rhetoric 7335-501

27 April 2007

The Facilitated Classroom and Beyond: A virtual Space for Dialogue

Introduction

The conventional college classroom is heavily lecture based and traditionally taught deductively. Although research shows an inductive approach to teaching is more effective and encourages students to adopt a deeper approach to learning (Prince 14), instruction still tends to follow a less interactive model. Many types of active based learning and student-centered approaches are available to enhance the learning environment. This paper argues that most instructors could dramatically enhance the learning environment and immediately improve communication within the classroom with a simple shift in perspective. Communication within the conventional class is ineffective and destructive at times. The lack of effective communication inhibits a holistic approach to learning and discourages full class participation.

This paper addresses current issues within the classroom, how to address these issues, and a communication technique called Bohm dialogue that promotes effective communication. The most important paradigm shift must occur with the instructors that lead these classes.

The educator must take on the responsibility of a facilitator, as well as a teacher, combining these roles as she manages the conversation and the meta-communication. Curriculum must be more flexible and inclusive, and lectures dialogic. The active classroom allows information to flow 360 degrees with the students standing side-by-side with the instructor in the creation of course curriculum.

The facilitated classroom represents an immediate solution to current issues. New technologies are available that can engage, capture and stimulate rich conversations while the instructor creates safe, clearly defined parameters for these discussions. The premise of this paper is that classrooms are a space where effective communication is expected and necessary. I argue that the art of discourse and dialogue are missing, and often ignored in many learning environments, and for effective communication and effective learning to occur, the classroom must be facilitated, not lectured based.

Finally, this paper proposes a virtual tool that can facilitate effective communication and provide a space for enhanced learning that reaches beyond the current classroom and communication issues. While a computer in every classroom is not feasibly possible, yet technology continues to surge forward and the virtual platforms are available that offer unique and exciting opportunities. By the time every student has access to a computer, current computer mediated learning will seem elementary. The proposed dialogue box is a virtual learning environment that utilizes current technology, applies effective communication techniques and addresses classroom issues such as low engagement, poor retention, and less than 100 percent

participation by students. This technological tool, if it performs as envisioned, will always be relevant even as computer assisted technology continues to advance.

Two commonly used terms throughout the paper which require special attention and clarification are *effective communication* and *dialogue*. Although, both terms are ubiquitous in our contemporary lexicon, this paper poses a specific definition that is germane to the argument and different from common usage. *Effective communication* describes a transfer of information where the sender's message is received as intended. The idea is simple but difficult to achieve as preconceptions, personal biases, prejudices, and mental models as described by David Bohm (Ross 9), influence how clearly we process the incoming data. The *dialogue* in this paper is a structured type of communication that was developed by the late physicist, David Bohm. Bohm dialogue is described as the "glue" or "cement" that holds people and societies together (Bohm 6).

The research methods employed were case studies, published research, and controlled group studies conducted at The University of Texas at Dallas. Bohm dialogue, similar to the study of communication, is difficult to quantify. This discipline is multi-dimensional in scope and extends into psychological studies, the realm of human behavior, and even reaches to the fields of spiritual growth and universal wisdom (Ross 3). For the purpose of this paper, dialogue is a very specific form of communication developed by the late physicist, David Bohm.

Bohm Dialogue

Bohm dialogue is a disciplined approach to a higher level of communication that generates a previously unrealized understanding, insight, or truth. David Bohm created

this form of dialogue and spent the last twenty years of his life immersed in researching and attempting to perfect the science and art of effective communication. He was born in 1917 and lived until the age of seventy-five. He was a quantum physicist by trade with contemporaries such as Robert Oppenheimer, Niels Bohr, and Albert Einstein. Einstein once described Bohm as his “intellectual successor” (Peat 1). In his later years, David Bohm explored the limitations of language and use of words, as well as the art of effective communication. At this stage of his life, he developed the discipline of Bohm dialogue. Bohm spent a considerable amount of time engaged in thought experiments with the Indian spiritual leader Jiddu Krishnamurti; independently, he studied human thought and traveled extensively promoting conscious awareness and the benefits of dialogue.

The purpose of Bohm dialogue is to facilitate a deeper connection and greater degree of learning by improving the level of retention, comprehension, and engagement. Bohm dialogue moves communication from rhetorical discourse to highly interactive, collaborative, and generative exchanges. Bohm describes the primary difference of dialogue to other forms of communication as dialogue does not focus on making a point. He goes on to say that dialogue is necessary for society to survive (Bohm 29). Bohm illustrates the differences further by exploring the root meaning of the word discussion. Discussion shares the same Greek root as percussion or concussion, meaning to break things up (Bohm 6). In contrast, Dialogue is derived from the Greek word dialogos translated as “through meaning of the word” (Bohm 6). This is the principle of dialogue. Most forms of communication entail one person defending or promoting a point of view in an effort to persuade or convince the other party. Dialogue

is an exchange to understand without persuasion or any effort to convince. Bohm dialogue slows down the communication process and allows participants to connect.

In dialogue, awareness of our thoughts and the meta-conversation creates tools that enhance the communication process. Assumptions, biases, and prejudices are identified which allows the receiver to access the message with less filters or personal attachments. A new space of understanding emerges and the conversation becomes generative in nature.

Bohm dialogue leads people to deeper connections and new realities. The gap between thoughts and actions, or facts and perceptions, begins to close when the participants are open to expanding their horizons and expecting a deeper connectivity. Bohm dialogue slows down the communication process and requires participants to be aware of their thought process in order to react or interact in a consciously aware state. The four elements of Bohm dialogue are: 1. Listening 2. Identification of assumptions 3. Inquiry and reflection 4. Suspension of judgment.

Listening

Listening is a critical aspect of Bohm dialogue. Similar to the specific definition of dialogue, stated previously listening in Bohm dialogue takes on a greater importance than implied in common usage. The difference is in how one listens and a higher degree of focus than is commonly practiced. In Bohm dialogue, the listener first focuses on the sender's message. In the process of listening, the receiver attempts to keep their inner dialogue focused on the sender's message without personal attachments of meaning. The opposite is apparent when you can physically observe a person considering their response before the speaker has finished their statement. The very act of formulating

one's own response is a sign that listening has ceased. The same person might argue that they knew what the sender was going to say and did not need to finish listening. This might be true, but to anticipate and assume another person's message is detrimental to effective communication and leads to the next element of Bohm dialogue.

Identification of assumptions

As soon as the receiver quits listening to the sender's message, they have begun the process of assumption. A person forms assumptions from past experiences, their educational background, family, friends, ideas, opinions, prejudices, and biases to name a few. In short, assumptions are ideas formed by our experiences and have nothing to do with the sender's message. Bohm describes how humans construct their realities by thoughts comprised of assumptions and how these realities are unique to each person; although we assume a common reality. In this sense, reality describes a person's perspective on life: Their paradigms in relation to their surrounding environment. As our thoughts occur, we construct our reality and react accordingly. The variable often ignored is that our perspective is developed by a multitude of stimuli, many colored by biases, prejudices, emotional attachments, and other uniquely personal influences. Thoughts create our world perspective, and many times we interact with others as if a common reality existed. This assumption can be a barrier to open communication. To truly connect, two or more people must find a common meeting place; finding a common meeting place begins by identifying and acknowledging that multiple realities are present. Many times assumptions are accurate and help move a conversation along; but it is the times when complete understanding is vital, or some type of mutual understanding would benefit the relationship, that assumptions can hinder effective

communication and even cause irreconcilable differences. Bohm cites assumptions as the reason religions are separated as incompatible denominations and nations go to war against other nations (Bohm 22).

Inquiry and reflection

Inquiry is an important aspect of listening. As the listener attempts to focus and direct their internal dialogue, inquiry is the best way to check the ever-present assumptions. The term active learning is a commonly used phrase used to describe this process of listening. The process of inquiry and reflection intentionally slows down the communication and directs attention to fully mining the sender's message. Reflection and inquiry are intertwined as the receiver focuses on the original message without peripheral attachments or alterations shaped by assumptions. Inquiry and reflection are a key element missing in a non-facilitated classroom.

Suspension of judgment

Understanding the thought process is the next step in dialogue after listening and inquiry has occurred (Ross 28). As we identify our assumptions, beliefs, biases, and prejudices, we gain a better understanding of our actions and reactions. Dialogue helps the individual realize that even though a thought crosses their mind, it does not mean an action on this thought is required. Once the choice has been made not to act on a particular thought, this very non action re-wires the synapses and continues to redefine the individual. Many thoughts are rooted in cultural stereotypes, family lore, or societal biases, and acted on as a global reality. A disassociation from these prejudiced thoughts can help the individual process incoming information with less of a personal bias and act in a more deliberate and inclusive fashion. The result is we choose the

ideas we embrace and do not blindly accept the attached reality of all our thoughts. This is how suspension of judgment occurs.

The main premise of Bohm dialogue is that a person must separate their identity from their thoughts in an effort to make a connection with another individual. The most difficult application of this is to be aware of our thought process and then to accept the idea that we do not have to be personally attached to these ideas, beliefs or opinions. Once a person achieves this level of attention to the process, they can consciously choose the thoughts and ideas which will influence their actions. Dialogue is a group process that requires participants to simultaneously disconnect and reconnect as a deeper level of collaboration emerges.

Current state of the classroom

Jay Lemke of the University of Chicago writes that curriculum based learning is a failure (Lemke 85). He describes an environment that teaches top down with many of the students lost to a “one-size-fits-all” approach to learning (Lemke 85). Richard Felder is a chemical engineering professor at North Carolina State University and author of numerous papers addressing effective teaching. He promotes active learning in the classroom and a more experiential approach. Felder argues that lecture based learning is ineffective and a more dialogic approach is necessary. Felder describes lecturing as talking over the students’ head and hoping that the information trickles down into their minds (Felder 57). I argue that the current classroom has abandoned the art of discourse as instructors leave the important aspects of communication to chance. I propose that to create a rich learning environment and the most effective communication, the classroom must be facilitated.

The results of such disengagement in the classroom are limited participation, a potentially disrespectful and counter-learning environment, a one dimensional approach to information dissemination, as well as, the common mistakes of confusing opinions with facts and not fully exploring the subject matter. Communication within these classrooms is not generative in nature and does not promote the best learning environment.

The flow of communication within a classroom accurately reflects the degree of engagement and can give insights into the level of student comprehension taking place. In a lecture environment, communication flows in one direction as the instructor stands in front of the classroom and talks at the students. In many classrooms, the discussions are limited to only a few students participating and the flow of information is severely restricted. A contributing factor in the restrictive flow of communication is whether the classroom environment is safe and inviting to all levels of students. Most people have an aversion to speaking publicly, and many students do not feel comfortable with the level of assertiveness required to be heard in a large classroom, or “fighting” for the floor to make a point or comment on the topic of conversation. This lack of consideration to different communication styles, promotes the students who are comfortable speaking publicly and are more assertive but, excludes a large percentage of the class, placing these quieter students in a peripheral position to the conversation.

In a non-facilitated classroom, instructors are apt to ignore disrespectful behavior such as side conversations and disruptions. Ideas are not fully explored by the teacher or the students in some classrooms, limiting the depth of information. Generally when communicating, the receiver assumes they know what the sender intended to convey;

but in reality, they are attaching their own ideas and opinions and missing the opportunity to expand the conversation - not to mention potentially missing the intended message. Specifically in the classroom, student's comments are not fully mined by the instructor or classmates and lessons are often left unexplored by the class without a clear understanding of the original premise or a full grasp of the concepts. The natural inclination to not question or clarify severely limits a conversation to a one dimensional exchange and a non-generative discussion.

Lecture based classes are deductive in nature and provide little incentive for the students to further explore any given topic or lesson. Lectures are presented as a one way communiqué where someone knows something and they are transmitting it out to those who do not. In many instances, this model is appropriate; yet, even the ideal lecture setting can benefit from a more interactive, dialogic approach to teaching. The lecture model talks at the audience and leaves much of the information presented undeveloped and open to assumptions. It disseminates information in a generic format and requires the audience to access it on only one level. The level of relevance is low and student engagement is equally poor.

The most troubling aspect observed in the conventional classroom is the instructor's lack of leadership in healthy discussions and absent facilitation of discourse and debates. The classroom must be an environment where ideas can be expressed, explored, and examined. Such dialogue requires a safe environment with a common language and agreed expectations by all participants. In the same classroom, debates and deep discussions require rules of engagement and guidance for the students to keep the discourse on topic and not allowing it to degenerate into personal attacks or

exaggerated exclamations. The classroom provides an optimum environment for lessons in all types of communication and this respectful, generative dialogue requires practice and facilitation.

The facilitated classroom

Addressing the issues of current classrooms dictates a different type of instructor and a new approach to instruction. The change proposed is dialogic in nature, implementing elements of Bohm dialogue and an instructor who is a facilitator as well as a teacher. To create a space that promotes effective communication and a generative learning environment requires a facilitated classroom.

The facilitated classroom presents a different relationship with education in general. This classroom presents information differently and interacts with the students in a radically new manner. It mandates a paradigm shift from the conventional curriculum based learning model to a multi-media, multi-dimensional flow of communication. This classroom fully engages the students, beginning with a body of knowledge, but generating new realities (knowledge) previously unavailable by any one individual. In the dialogic process, an engagement and ownership is created that enhances knowledge retention and a deeper level of learning.

Dialogue is the foundation to create a new learning environment. Four areas to address the current classroom issues are: 1. Create a learning environment. 2. Inquiry 3. Interaction 4. Engagement.

A learning environment

Creating a learning environment requires a focus that defines and establishes ground rules for the space. Clear expectations, rules, and defined boundaries are a part

of creating a focused classroom and establishing the parameters for learning to occur. The focus is an attention to the meta-conversation and the communication process. A traditional instructor might only consider content for the course, the arrangement of the class, and class attendance, but a facilitated classroom goes further to addressing the process once the class begins. A learning environment requires the students to know what is expected of them as an individual participant and an invested contributor to the larger group. It requires students to understand their role in directing the curriculum and discovering the class lessons. As opposed to leaving the conversation to chance and expecting participants to understand the intricacies of effective communication, a facilitated classroom constantly shifts between the conversation and the meta-conversation. It requires the instructor to monitor the flow of communication, and the students to be responsible for the process and final outcome.

Case Study

Dr. Venus Opal Reese, a professor at the University of Texas at Dallas leads her graduate students in dialogue with a process that engages the students and forces them to struggle in a constant search for the collective wisdom. This means students are encouraged to build on each others' contributions and keep mining the conversations, personally and academically, until new meanings and insights are discovered by the class at large. I witnessed Dr. Reese literally cull out students in the beginning two classes of the semester in an effort to create a learning environment. With a complete understanding of her curriculum, and the conversations that would ensue throughout the semester, she opened the first class with a broad discussion of topics and her expectations of the depth to which the students would be expected to

delve. Dr. Reese maintained a laser-like focus on the content of her curriculum and where she would lead the class.

The title of the course was Hip Hop as Discourse and Dr. Reese took the students from the concepts of being, to the power of societal influences on the slave and the master, to methods of expression through music and entertainment. Two students left at the suggestion of the professor. The word cull is appropriately used; although, no student was ordered to leave or mistreated in any fashion. Dr. Reese knew exactly what would be discussed in the course and directly questioned the students' ability to discuss these areas in a generative fashion. She questioned whether one of the students would be able to objectively and academically explore the issues of what makes a human being and fully engage in the dialogues without an agenda or being limited by preconceived ideas. The second student, a talented musician, left in frustration when Dr. Reese would not accept his work because it did not fulfill the assignment; although, the work was open to interpretation, and the message was recognizing the framing and how to contribute to the current discussion. She not only expected students to produce relevant work, she expected them to participate in the meta-conversation. This required thinking beyond one's own interests.

Dr. Reese created boundaries for the creativity to flourish, but it was a disciplined structure that was respectful to the other class members and consistent with the vision of the course and she was strict in her enforcement of these original parameters. The result was a highly focused group of students fully exploring a tough topic that can easily get diluted with peripheral issues and deeply rooted prejudices. The final

individual projects were quality works of art and enlightening academic papers resulting from a group collaborative effort.

Inquiry

An important component in the facilitated classroom is the process of inquiry. Similar to dialogue, the idea of clarification and asking questions to understand, as opposed to assuming a common reality, is vital to a healthy conversation. A process of inquiry represents a paradigm shift...This is a paradigm shift for the instructors as well as the students, since the traditional instructor/student relationship reflects a one dimensional flow of information. Lemke describes the classic classroom as a curriculum based environment where a removed administrator decides what is important to learn; the instructor pushes this information out to the students and they retain as much as possible as ultimate truth (Lemke 84). Especially at the university level, thinking must be a more complete exploration of all topics. This classroom includes input from the students and collective research to expand the topic beyond one instructor. Lemke proposes an education that is relevant to the individual and not information designed for the masses (Lemke 84). Inquiry is a technique that promotes a fuller conversation and expands the knowledge base. The very act of clarifying allows a person to develop an idea and ensures a higher level of comprehension within the classroom. Once a common understanding occurs, the idea can be expanded and built upon, leading to new discoveries within the group. Often an instructor cannot generate these expanded ideas alone. Common classroom discussions are monologues or rhetorical diatribes with each student pushing their own ideas and opinions without collaboration or

creativity present in the dialogue process. In essence, effective communication is not possible if the process of inquiry does not exist.

Interaction

The degree of interaction within the classroom is established by the instructor. The expectations of the instructor, combined with the rules of the classroom, and even physical settings, can dictate the level of participation by the students. A heavy lecture environment has the lowest level of interaction. The computer mediated classroom or an environment that can utilize a computer workstation and allow research and projects to be done through the computer is the ideal interactive learning environment. A low tech way to ensure a high percentage of interaction is group discussions that are facilitated and ideally structured around the principles of Bohm dialogue. The facilitated classroom can increase interaction even using the traditional lecture approach to learning. Instructors must refocus their attention to techniques and processes such as dialogue and experiential learning.

Students do not have to be a passive audience and the instructor's challenge is to keep the audience engaged and active in the discussion. The first step is approaching any presentation or lecture as a dialogue. This dialogic approach is a different emphasis for the presenter and often happens intuitively, but with dedicated attention can be dramatically improved. To deliver any presentation as a dialogue requires attention to the audience. It entails understanding the audience and considering the questions and concerns they will encounter because of the information they are receiving. The presenter must anticipate the student's responses and consider common points of views or influences that will affect their reactions. The lecture must be

designed with the premise that information is not flowing from an all-knowing source to empty vessels, but as a 360 degree discussion presented through a single channel.

Questions are a common way to engage the students during a lecture. The challenge is keeping the presentation to a desirable length. Once again, in consideration of the audience's position and perceived responses, questions can be tailored to be rhetorical in nature but feel interactive, encouraging the students to consider the question and answer with a simple, "yes" or "no." Questions that are directive and not open ended will illicit short direct responses as opposed to long trailing diatribes that are difficult to reign-in. Felder proposes a hybrid lecture technique that inserts mini-group projects within a lecture to help the students filter and process the information in the moment and among their peers (Felder 68). This break in the mono-directional flow of communication, enlivens the group, and fully engages the participants.

Case Study

Dr. John Gooch, Director of Rhetorical Studies at the University of Texas at Dallas, effectively uses computer mediated learning to expand the class discussions. By implementing email, discussion boards, and chat rooms, he has found different venues to engage the students and fully integrate the students into the classroom learning experience. In his graduate class, Dr. Gooch had the students log-in to the classroom terminals and partake in a discussion by posting on the school's discussion board. The very act of reading and typing presented a different way for the students to process and reply to the information and each other. By typing individual messages, the discussion is slower and more reflective. The computer mediated conversation gives

access to an on-line dictionary to clarify words or better express a point, and links with searchable references are available for immediate viewing. The structure of such a discussion is more inclusive. One person cannot talk, or type in this instance, over another student. So, the issues of discomfort with public speaking or lack of a desire to fight for the floor to speak is a not a factor. The other benefit of such a computer mediated discussion is the ability to archive and display the posts for further references. This type of discussion expands the interaction and archives the content.

Finally, dialogue is a process that ensures full interaction because inclusiveness and collaboration are the keystones to the Bohm technique. Participants might even stop and address another student who has not spoken and encourage them to interject their thoughts or ideas. The paradigm shift that all participants have something valuable to add, even to the most technical discussions, encourages the students to listen with an investment in the exchange and a feeling of ownership for the class discussion. The conversation becomes something different once students can realign their thinking and move from trying to show how much they know to exploring what others have to contribute, the conversation becomes something different. In the collaborative nature of such a conversation, it becomes generative and enlightening to all.

Engaging

The key factor that prohibits effective communication in contemporary classrooms is the low level of engagement. Any instructor will say that they prefer complete participation and full engagement within their classrooms, but the statistics show must less than 100% participation. Although it is apparent that numbers are much lower than complete engagement, instructors seem resigned to this lower level of

participation. The very acts of redirecting the attention of the instructor to the meta-conversations and providing interactive assignments for the students are immediate actions with real, in-the-moment solutions to common communication issues.

The final variable in increasing the level of engagement within the classroom, and equally important, is considering individual and group dynamics. Learning styles discussed by Dr. Felder are important when designing curriculum that engages most students. The three primary learning styles include audio, visual, and tactile (Felder 60). Most students use some combination of all three when processing information, but are characteristically more dependent on one style over the other two. Low levels of engagement occur when lecturing to a person who best processes visual information while their weakness is auditory processing, or asking an audio type learner to process information in manuscript form with large amounts of reading.

Along the same lines of understanding how people process information and considering these factors when designing curriculum, is Bruce Tuckman's article on the four stages of group development, published in 1965. The four stages are forming, storming, norming, and performing (Tuckman 2). These are important when considering a group process such as classroom discussions and group projects, and the participants' ability to communicate effectively. Tuckman's model is relevant when discussing the meta-conversation and instructors' reluctance to facilitate the classroom. The second stage of Tuckman's model is storming and this describes a very important aspect of deep, insightful communication. The storming stage allows participants to identify commonalities and dissimilarities. This stage distinguishes an important step in establishing a common language, a place for further explorations and pockets of shared

realities. This stage must occur before genuine and generative communication takes place and is an integral aspect of dialogue. Groups that are not allowed to properly storm will not be able to get past superficial, courteous communication and can expect non-engaging discussions at best. Most classroom environments use forming, avoid storming, and expect performing in the group dynamics which include class discussions.

In a facilitated classroom, the instructor understands learning styles and considers these when developing curriculum. The same instructor understands the value of group dynamics for effective communication and promotes healthy discourse. He or she creates a safe environment with classroom rules, expectations, and activities that fully engage the students and promotes them as collaborators and not a passive audience. Finally, in this classroom the techniques of Bohm dialogue are practiced and attention is directed to the conversation and the meta-communication. Dialogue allows for a generative exchange and effective communication, which ultimately leads to deep learning and a rich education.

Case Study

In a course I teach called Digital Imaging at The University of Texas at Dallas, the primary tool taught is Adobe Photoshop and I am constantly searching for engaging ways to teach a technical topic in a non lecturing, dialogic manner. Photoshop is a powerful editing, creation and publishing tool in which the most dedicated artist continues to discover nuanced features and previously unapplied applications. Traditionally, a technical curriculum that entails learning new software is lecture-based with classroom time to interact with the software. I have introduced a different approach to the class that moves me to the back of the room, not lecturing, fully engaging the

students, and utilizing the dialogic approach to class management. The challenge is teaching the nuances of the software while considering the diverse range of aptitudes and levels of mastery within the classroom, from the students who have never used Adobe Photoshop, to those who could teach the class. My solution is to divide the class into small groups of three to four students. To form the groups, I ask the students to classify themselves as expert, moderate, or novice in competency. Once the skill levels are identified, one person from each competency is placed on a team, thus having at least one expert and a novice on every team.

The class assignment is to select one of the predetermined tools to research, master, and present back to the class. The class spends thirty minutes in small groups learning about their specific tool and then each group is given five to ten minutes to present their “lesson” to the class. The class is encouraged to ask questions and challenge the group’s knowledge of the tool. Each group must have access to a computer with the software and internet accessibility is a bonus since as many of the groups explore tutorials at the Adobe web site and use other helpful resources.

We repeat this exercise three times throughout the semester and the final time, the students are asked in advance to select the tools to be taught the following class. I found this to be an effective in-class assignment or equally engaging out of class group project that allows students to work together, while thoroughly exploring the benefits of Adobe Photoshop. The small groups allow students to learn at their own pace and the presentations add additional incentive for team members to fully understand the topic matter and provide a fresh approach to teaching the material.

Beyond

Taking technology into consideration, the next step beyond the classroom is a virtual platform. Although computers are not new to the classroom, the virtual environments are a relatively new venue and still unfamiliar. Improvements in computer interfaces and participants' presence are two factors that have made this electronic environment a viable alternative to the class. How participants are able to interact with the medium is important to the overall experience and the unique ability to engage. The second aspect is an individual's presence in the virtual world. As computer memory expands in capacity and shrinks in cost, computer graphics are improving and constantly pushing the edge of technology forward. More capacity and better graphics allows for life-like avatars and virtual environments that look like photographic landscapes. Realities have already begun to blur as virtual environments display fantasy worlds in images that look real. Because of the graphically realistic environments and a participant's presence within these spaces, virtual realities are blurring the boundaries of real and perceived experiences. The ability to be fully immersed in such an environment opens possibilities for unimaginable future learning opportunities. Beyond the benefits of computer enhanced applications, a virtual environment offers features that improve the communication process.

First is the issue of equality and the ability to strip away physical distractions such as social status, class distinctions, and even race or gender. In the virtual environment, participants are engaged as equals and judged strictly by their present actions. Within this space, there is the added benefit of a hyper-focus and complete lack of distractions if desired. In a virtual space, the designer can decide on what

environmental elements are present and which are absent. The space can be dedicated and tailored to fit a predetermined purpose.

Second are the visual qualities and vast arrays of tools that are available that are available for full expression. In a virtual environment, all the senses are engaged and the process of creating is accessible to anyone. A virtual environment promotes individual authorship and creativity and allows participants to navigate within the canvas. The visual aspect of a virtual environment strongly resonates with the ubiquitous visual culture that has evolved since the advent of the internet. The virtual space is designed with people Lemke calls Hybrid people and their multimedia literacy (Lemke 83). This is a sophisticated audience that expects a hyper-linked, multi-media, faster culture where information, news, art, and entertainment all blend together, shaping our collective consciousness. A virtual venue is the only place this much information can be contained, accessed and dispersed.

Finally, a virtual environment is fully immersive, partially because of the interface and avatar presence, and partially because it has a visceral affect and engrossing influence that allows the participant to believe the illusion. This aspect has caused the online gaming industry to explode, but more importantly it has moved the classroom closer to an accurate electronic verisimilitude, predicted in the not so distant future to surpass the physical environment in comfort, engagement, and promotion of an effective learning experience.

The proposed dialogue box, called dbox, will represent a space, the shape of a cube, within a virtual environment where students are represented by animated icons. The dbox will utilize the elements of Bohm dialogue and implement the techniques

outlined for a facilitated classroom. Communication will be facilitated following the elements of Bohm dialogue and information presented in a multi-dimensional, multi-media fashion using images, text, color cues, and proportional sizing to enhance the communication process. Participants enter the box, shedding their online avatar for an expressive orb of light. The session begins once all participants are present and signaled by a change in room color. The participants/orbs are arranged in a circular fashion and randomly rearranged throughout the process (Diagram A).

Learning Environment

The entire environment within the dbox is interactive and promotes learning. The interior walls serve as display boards to facilitate the conversation. There are three types of boards which serve as the walls. The white board displays key words and various participant points captured from the conversation, a blackboard allows free hand images to be added to the conversation, and a pixel post is available to display images or photos. These boards can be pre-loaded or participants can interact with them while in a session. The participants are immersed in the text and images as the information surrounds them and is accentuated depending on the flow of the conversation. The key point of a discussion will be displayed and new points may replace this text or move off to the side as a distraction from the ongoing dialogue. This key point can be established before the dialogue session begins. Key words and images appear and fade as their relevance fades from the conversation and color, lighting, and text size are used to emphasize a point or redirect the conversation.

Communication is conducted by typing and the text is displayed at various points within the dbox space, according to the type of informational input. Words are displayed

on the inner walls of the cube to emphasize the current topic, point, or idea. Words will be highlighted or will fade depending on group usage (Diagram B). The current comments are displayed in the center of the dialogue circle and eventually move to a separate window displayed outside the dbox. This separate display will be available for immediate reference and saved as a permanent archive for future use.

Located in the center of the dialogue circle is a glowing splash of color. This serves as a gauge of the group's success in dialogue and connection between participants. The splash of color expands towards speakers and enlarges depending on the degree of interaction. Participants' orbs expand or contract according to the number of times the student contributes to the conversation. A number is displayed above their orb indicating their level of participation, and the dbox facilitates participation by limiting consecutive inputs and literally not allowing any one participant to dominate the conversation by blocking excessive inputs. A ratio is calculated by the number of participants and amount of input per students to equitably distribute the students' input.

Emoticons are used to indicate emotions or feelings pertinent to the exchange (Diagram C). Six basic emotions are available to use throughout the session. The emoticons are displayed next to the student's orb and provide important information that can help the group stay connected and understand each participant's emotional position.

A valuable feature of the dbox is the transcribed file created from each session in the box. All typed text, key words, and images are archived for later review and distribution. Words on display and archived files are linked to a dictionary for meaning and participants can attach their own definitions that reflect how the word was used in

the context of the conversation. For non-participants who want to observe the communication process, the exterior walls of the dbox are transparent and observers can watch the process outside the contained environment without disrupting the interior dialogue. Three areas that promote effective communication in a facilitated classroom are emphasized in the dbox environment: Inquiry, interaction, and engagement.

Inquiry

As in the facilitated classroom, inquiry is equally important in the dbox environment. Visual cues are available to give insight to participants, but an easy mistake that can happen in dialogue is receivers assuming they know what the sender intended. Inquiry is the only effective method of clarifying the original message and intentions. The dbox will facilitate thorough inquiries and not allow a statement to be removed from the circle until at least one clarifying statement has been posted. Questions will appear above the recipients' orb and remain until the message is clearly stated for the group. The dbox further slows the conversation and makes the process intentional and focused. Clarifying questions are an important part of the process and required to communicate in this environment.

Interaction

All participants will begin with an avatar presence. Once they enter the dbox they will go through a process of removing the skin of the avatar and take form as a glowing orb of light. This is the first instance of full immersion into the process and interaction is represented in multiple fashions inside the box. The students type their comments and the text appears within the environment based on the relevance of the comments to the ongoing dialogue. Generative comments are displayed within the center of the circle,

while disruptive or off topic text appears outside the circle. Directed questions appear above the recipient's orb and a splash of color will connect the participants who are currently engaged in the exchange. Emoticons represent emotions...Emotions are represented by emoticons which appear next to the orb of light as well as reflected in change of colors. Cool colors represent calm, agreeable, passive, while hot colors reflect a passion of some type. Initially, the dbox will appear overwhelming with too much information and stimuli. This is similar to the beginning driver behind the steering wheel for the first time, he or she is flooded with a rush of information flying through the windshield as street signs, lights, and surrounding traffic zoom past. The dbox uses information and cues that are necessary to facilitate the flow of communication. The goal is to develop intuitive stimuli that blend into the environment and naturally prompt the student to engage and participate. Like the novice driver who quickly acclimates herself to the speed of traffic and rush of data to become a competent driver, the dbox user will become comfortable with the reality of being immersed in a conversation and surrounded by prompts and information that are all present for a purpose.

Engaging

The student's orb of light is a visual representation of their participation in the conversation. The orb enlarges and brightens when speaking and changes color depending on the emotional tone of the comments and emoticon used. The orbs will shrink as the students disengage from the conversation, reflecting a distance from the group and separation from the dialogue. The dbox has one aspect which classrooms often fail to implement and that is the clearly stated intentions of the class. The dialogue box serves as a dedicated venue where learning is emphasized and effective

communication is the goal. When a student enters they are committing to a defined purpose with explicitly characterized intentions. In the classroom setting, however, there is an implied purpose and commitment on the part of the student, the intentions and goals of the students and instructors often stray and become less distinguished. In the vbox, even when a student is not participating, they are interacting with the group process. As the environment evolves to better serve a classroom, it might be appropriate to eject students who do not engage in the process after a predetermined amount of time. This same feature might be used for students who are disruptive as well. Since the instructor is absent in this virtual world, the ejection feature would serve the same function as the instructor who directs questions and prompts input throughout a conventional classroom setting.

The vbox is a facilitated classroom. It removes the instructor from the front of the room and places the students in the center of the discussion. Curriculum is interjected directly into the conversation and the communication is tailored specifically to fully explore and generate new knowledge. The vbox combines the attributes of new technology, effective communication, and a facilitated classroom and immerses the students in a highly engaging, dedicated learning environment. The vbox is a virtual space for dialogue that takes the classroom beyond mediocre teaching practices.

Conclusion

Current classrooms rely heavily on a deductive approach to learning as opposed to an inductive learning model. The conventional style uses lecture-based teaching to present a mono-directional flow of information and fails at fully engaging the students. A facilitated classroom implementing the techniques of Bohm dialogue ensures a higher

level of interaction and engagement by the students, thus a richer learning experience. Effective communication is an art and difficult to achieve without facilitation. Bohm dialogue provides a technique to achieve this higher level of communication. The steps to effective communication and improved learning begin with an attention to the process. This paper proposes a tool created in a virtual environment to achieve this level of communication. Beyond the traditional classroom, the dbox can facilitate dialogue and effective communication in a virtual classroom. Dialogue in a virtual environment, facilitated by the dialogue box, can potentially make a difficult process accessible and effective communication in the classroom manageable. The dbox is the first step to fully utilizing current technologies for the purposes of education and promises to offer benefits that will surpass the conventional classroom experience.

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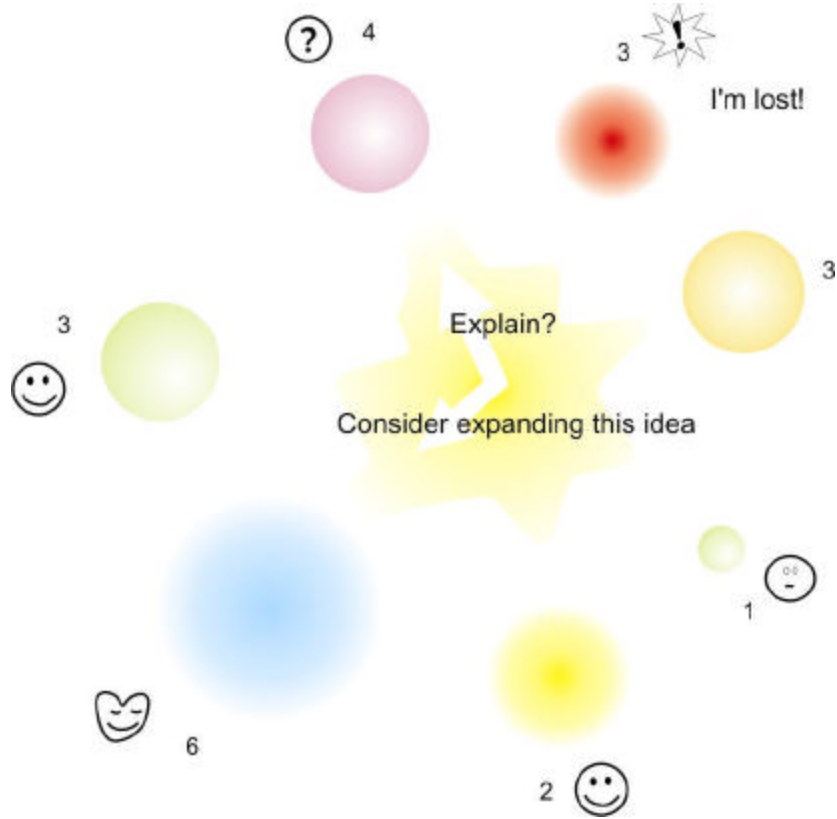


Diagram A

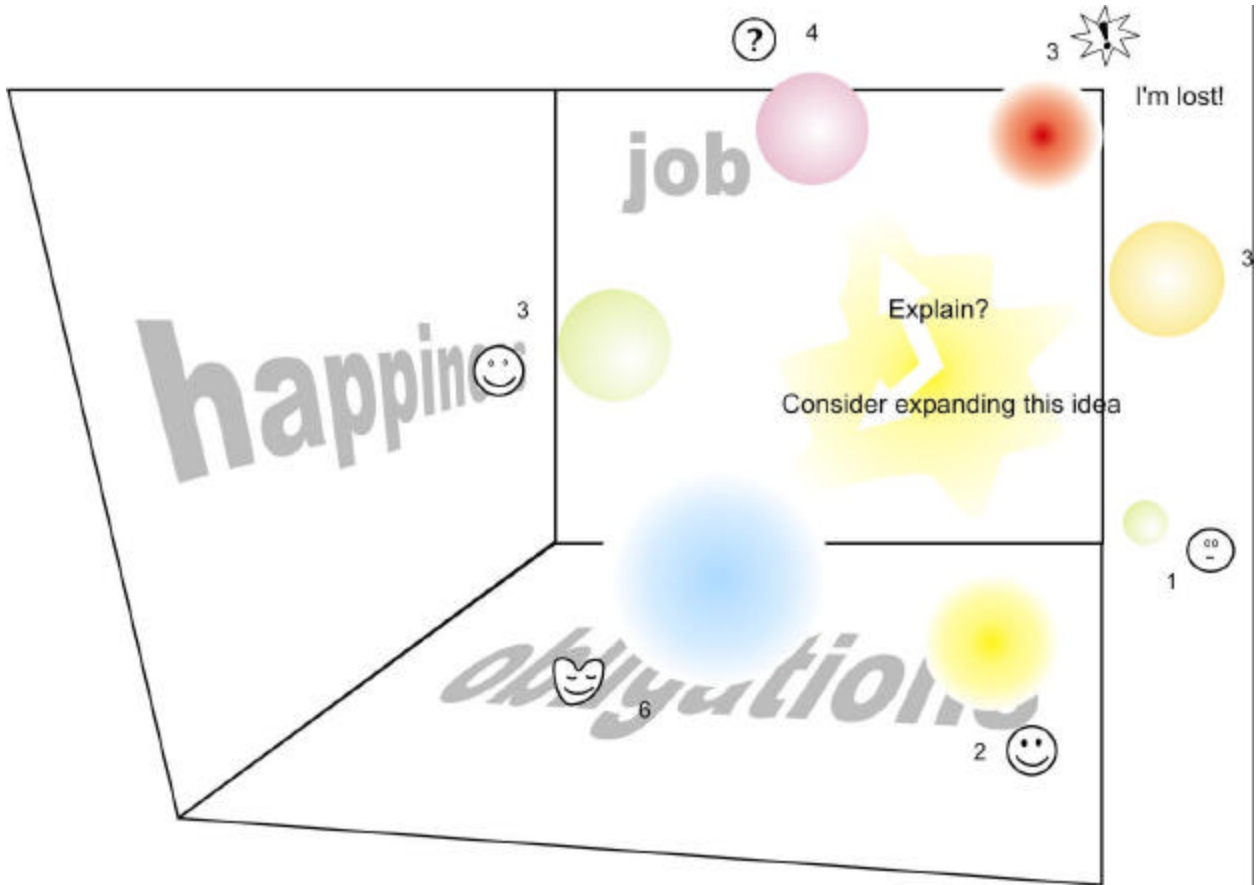


Diagram B

- | | | | | | |
|---|----------|---|------------|---|-------------|
|  | happy |  | frustrated |  | exclamation |
|  | confused |  | angry |  | question |
|  | loving |  | blocked | | |

Diagram C