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Editorial

Now for Round Two

This second issue of the Journal of Applied Educational Technology brings the introduction of our Board of Review. The journal continues to hold the mission of providing useful technology articles for classroom teachers and educators in the field, as well as a forum for current research. Due to this focus on research we have gathered a variety of experts within the field to assist us with a system of peer review for articles submitted to JAET. Dr. Calvin and I are therefore proud to announce the formation of our Board of Review, and I welcome all the fine professionals aboard who have agreed to serve in that capacity.

An additional introduction in this issue is the book review section. We hope to offer a wide variety of discussions on books in our field, and explore academic as well as mainstream offerings that pertain to applied educational technology.

If this is your first experience with JAET, let me also introduce you to our ambitious dissemination plan. We permit electronic copying of the issues in PDF format. So, if you find the journal to be useful we hope you will take the opportunity to forward it electronically to friends and colleagues.

Finally let me mention our search for quality articles. We are interested in discussions of successful applications of technology in the classroom as well as articles detailing pertinent research.

Our website address for the permanent hosting of the electronic versions of all our issues is www.eduquery.com/jaet. We hope to continue serving our community of educational professionals with both electronic as well as print versions of the journal.

- John Rice

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The Journal of Applied Educational Technology (JAET) serves an audience of teachers, educationists, and educational administrators who deal with technology in the K-16 environment. It seeks to offer solutions for educators through the use of applied technology as well as providing a publishing platform for current research. The journal publishes articles focusing on classroom uses of technology, book reviews, and research in the field. Research articles are subjected to blind peer review before acceptance for publication.

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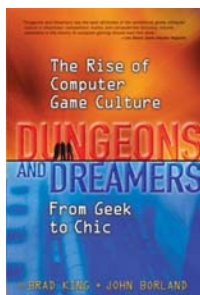
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Book Review

Playing Games in the Electronic Dungeon



Dungeons and Dreamers: The Rise of Computer Game Culture from Geek to Chic. Brad King and John Borland. New York: McGraw-Hill/Osborne, 2003, ISBN: 0072228881, 273 pp.

by John Rice

When I dug into chapter one of *Dungeons and Dreamers: The Rise of Computer Game Culture from Geek to Chic*, I groaned. Not another tome whose sole purpose is to idolize Richard Garriott, I hoped.

Don't get me wrong. I'm an old fan of Garriott's work. Richard Garriott, for those not familiar with the name, is considered by many to be the godfather of graphical computer gaming. His story ranges from selling his first game at a local ComputerLand outlet in Ziploc bags to creating the highly successful Ultima series of adventure games.

Garriott's biographical data serves as a frame for the remainder of the book, so there was much new information for me once we got past his early years. He's not a bad choice for starting and ending the book since he's been so influential in the industry and is widely assumed to continue being a major force for years to come.

Personally, I became familiar with Garriott and his electronic counterpart Lord British in Ultima V, which I played off of 5.25 inch floppy discs back in the day. And I've read more than one praise piece and at least one book on the man, detailing how he got turned on to programming at an early age and turned his love for games into personal riches. Garriott has been good for computer games, and computer games have been good to Garriott, who lives in a castle (literally) outside Austin. I contributed to his wealth by purchasing several more games from his company, Origin Systems (which was later picked up by Electronic Arts), down through the years.

Dungeons and Dreamers starts out with a rather bug-eyed sense of enthusiasm. Yes, this changed the world. Yes, this was historical. We get the point, repeatedly. Somewhere around chapter five, however, the book starts to hit its stride. At this point, in Part 2 of the book, readers begin to appreciate how computer games are truly impacting society. Game play, we are told, is replacing television viewing among young men. Electronic games have become a multi-billion dollar industry that outpaces Hollywood in sales and profits. Programmers are

coming home in Ferraris, convincing their parents they are employed in productive pursuits.

Inevitably, the Columbine incident is brought up, thanks to the fact the two teen-aged gunmen were avid players of violent video games. The resulting Senate hearings and other hand wringing by various groups and media figures are also subsequently discussed. Into this foray academics gained a public forum to discuss the nascent field of electronic game research. Specifically, the authors focus on the research and writings of Henry Jenkins, director of MIT's comparative media studies program; David Walsh, founder of the National Institute on Media and the Family; and Craig Anderson, chair of Iowa State University's Department of Psychology.

Like any good modern book on computers, the publisher maintains a site on the Web, www.dungeonsanddreamers.com, where prospective buyers can read the first chapter and a blog maintained by one of the authors.

The key value in *Dungeons and Dreamers* for educators is an opportunity to figure out what all the hubbub is about over computer games. Often, the allure they hold for our students is a mystery. By detailing the history and examining the cultural issues surrounding computer games, the book can help teachers make this increasingly predominant form of entertainment become less of a mystery.

In the Classroom

The Search for Free Media

With copyright laws the way they are, educators desiring electronic sound files, movie clips, clipart and digital photos need to be cautious about the materials used in classroom projects, whether teacher- or student-designed. With that in mind, we set out on a quest for media free for use in the classroom and easily available on the World Wide Web.

Clipart

Of the many sites available with free clipart, we liked Discovery School's best. Clipart is sorted by category and included many examples we liked. <http://school.discovery.com/clipart/>

Digital Photos

The digital photos included in the University of North Texas' Web Library are nicely organized and royalty-free. <http://web2.unt.edu/weblibrary/freemedi/gallery/>

Movies Clips

Search the Library of Congress for public domain movie clips. Go to <http://memory.loc.gov/>, click on Search, then Motion Pictures. A variety of historical sound recordings are also available.

Research

Ethical Research Practices: Collaborative Action Research Part I

by Chris Calvin

Introduction

In traditional research the investigator is separate from the process, an “impartial” observer. This approach stems from the age of reason, or as some refer to it, the positivistic era, modernity or even objectivism (Denzin & Lincoln, 1994). Often research subjects in the traditional model are treated as subordinate to the study, with no voice or choice in what is reported. This standard has come under fire in recent decades. The debate has led to a plethora of alternative research models that are more collaborative, participatory and inclusive, following a more naturalistic bent. The conventional models fall under the philosophical umbrella of objectivism (positivism—logic based) while the more recent models fall into the constructivist or post-modern realm (often characterized as qualitative research rather than the traditional quantitative approach) (Harvey, 1997). Quantitative research is often described as logic driven and numerical, while qualitative is heavily narrative. Often quantitative relies on sophisticated statistical models to justify the outcomes.

One problem with these convenient terms is their divisive nature. Two camps have formed which are very active today. A few iterations of the opposing ideology include Constructivist vs. Objectivist, Modern vs. Post-modern, and Positivistic vs. Post-Positivistic. Recently many scholars have begun to advocate for multi-method or mixed-methods based on the study’s needs (Creswell, McMillan, Mills, and Schumacher, 2002; Roblyer, 2003; Sagor, 2000). Regardless of perspective, research questions will determine the choice of methodology.

Action research is one such “mixed method.” This varied approach allows practitioners to take control of their profession by moving beyond traditional methods and refocusing on the needs of the study rather than falling victim to the paradigm wars. When practitioners conduct the research they feel is essential to their practice, their organizational effectiveness increases. They buy into the work because their observations generate it, not someone at the state capitol. This is especially true in top-down decision driven institutions like K-12 schools. Traditionally, teachers have been disenfranchised within their profession by the many competing forces involved with school decision making. The ability to present both quantitative and qualitative data to support educator assertions is one way to retake some of the lost ground in the teaching profession (Sagor,

2000). In order to do this, educators must be adequately grounded in the applications and presentations of their research. Poor delivery can alienate the intended audience and do much greater harm than remaining silent. It is therefore essential that educators become grounded in basic research methods and ethical practices in research.

Issues & Concerns

One area demanding closer examination in K-12 and higher education is that of research ethics. Many graduate level students are introduced to several key concepts based on the premise of protecting human subjects in research. These precepts come from a document known as the *Belmont Report* and culminated in the *National Research Act* (NRA). Prior to this act the protection of human subjects was left to the individual researcher.

Historical Perspectives and Cases

“Ethics” is from the Greek word *ethos*, meaning simply, “moral custom.” As applied to groups, ethics are a way to guide organizational behavior based on moral action, usually through the establishment of ethics codes. Most professional organizations today have well established codes of ethical practice. There are many examples of unethical conduct in the professions which can lead to a host of problems. Conducting research is no exception.

One infamous ethical breach in medicine was the Tuskegee Syphilis Experiments, concluded in the early 1970s. In this case study several medical organizations and hundreds of health care professionals became directly or indirectly involved in what many consider the most shameful and illegal research ever conducted in medicine – with the full endorsement of the federal government via the US-Public Health Service. In his book *Bad Blood*, Jones (1992) describes in great detail this 40-year study which allowed 431 African Americans from the rural South to go untreated for syphilis over an extended period of time to observe the effects of the disease on human participants. It was not until the media exposed this tragedy in the early 1970s that action was finally taken from within the medical profession to end the study and offer minor sanctions to some of the persons involved. For more on this see <http://www.humanehealthcare.com/vol112e/ethical.html>.

In business and industry what has become known as the Bhopal incident serves as another reminder of serious ethics problems. On December 3, 1984 a gas leak at the Union Carbide plant in Bhopal, India killed 3800 and injured another 2700, many quite seriously. The eventual settlement was \$470 million, but in the process 5500 lives were directly affected and tens of thousands of families were sadly impacted by this avoidable tragedy. Many involved questioned whether this accident would have occurred if safety procedures had been followed. Substandard practices such as the ones at the Union Carbide plant continue to this day in lesser-developed countries (Vaughan, 1985). For more on this visit <http://www.bhopal.com>.

Perhaps in educational research we have no equivalent to Tuskegee or Union Carbide but breaches of professional ethics often occur. Lesser ethical concerns can occur when data is manipulated to satisfy funding agencies. Another and perhaps more common problem in educational research is plagiarism (Denzin & Lincoln, 1994). Also, the standards movement has led to false reporting and even cheating on state mandated tests at the local district level. Recently in Houston, Texas several news agencies accused the local urban school district of deliberately declaring inaccurate attendance data to increase state funding for the region.

One case in which I was involved with a few years ago involved a substantial federal grant (in the millions) which included a tier-one research institution and several school districts. The Institutional Review Board (IRB) at the university level was charged with oversight but failed to respond to repeated reports of violations. IRBs through the institutions they serve are charged with the protection of human subjects (participants).

The very nature of the way institutional review boards are set up is based on self-monitoring. So when the organizations involved have a vested interest in protecting the research can they truly effectively self-monitor? This is a question that stirs much controversy in the research community.

In the educational example offered, I was fortunate enough to be employed by the university and the department involved at the time the grant was awarded and implemented. Ironically, over a year later, I would be employed by one of the school districts and involved in the study phase of the grant as a participant. Having this perspective on the organization and implementation of this grant is somewhat unusual but allowed me insight into some of the pitfalls of this type of research.

During this study the primary problem with the research design was in how the participants were protected. E-mail addresses were used to code the participants. Later the e-mail addresses were released to administrators at the school system in an attempt to increase the rate of survey returns. Most e-mail addresses contain the names of the user. How did this constitute an IRB violation? And what action should be taken by the teachers involved?

Since this was a real case study that I was involved with I can report that when the names were released several teachers came to me with their concerns. They knew I had worked with the principal investigator (PI) the year before. Initially I met with the teachers and offered reassuring words, letting them know that I would bring it to the attention of the PI and local research coordinator—which I did. I brought the consent form and the IRB protocol which was promptly thrown into the trash in front of me. I then asked if they (the site coordinator and PI) were going to recode the data to better provide for participant confidentiality but they refused.

One side note to this case is that in previous studies the PI had low return rates, which drew some criticism from colleagues. It is possible this led to the rationale for releasing the names to administrators who then coerced faculty into returning more surveys. The goal was a 100% return rate, very rare in social sciences but nearly achieved in this case.

After the coordinator and PI refused to recode the data I met with the teachers to inform them of their option to report the lack of action to the college level IRB. The university was a benefactor of some of the funding involving this research.

The college level IRB reviewed the report they received. The PI met with his subordinates in the study prior to responding to the college level IRB to map out a strategy for responding to the inquiry. The final response from the college level IRB was that the research protocol had been approved by a prior committee and was not subject to their review. They suggested an appeal to the next level. To my knowledge this never occurred.

Conclusion

With teachers entering into the research arena through methods like collaborative action research, it becomes necessary to better prepare them for the potential of ethical conflicts. Not all violations of research practice are so blatant as the example I was involved with, but sloppy research and a drive for funding can lead to problems. Sharing cases like the ones above can help make this effort a much smoother transition. In the “real world” the processes that are set up to protect human subjects do not always work. Only through active vigilance on the part of all researchers can we better serve our public and our schools.

In part II of this series the author will share an interview with a prominent CAR researcher and leader in the field.

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Improving Literacy Using Technology: One Teacher's Approach

by Janetta Baker

Underachievement and gifted students do not seem to belong together, but in reality many gifted students do not reach their full potential in school. Because success in our society depends on being able to read and write, we expect our gifted students to excel in language arts and literacy.

Action Research

In this action research, a fifth grade teacher concerned about discrepancies between her students' high abilities and their mediocre writing decided to attack this problem from a variety of angles. Specific problems with writing were in using repetitious vocabulary, simplistic and unvaried sentence structure, lack of clarity and originality in expressing ideas and thoughts, inability to keyboard fluently, and unfamiliarity with more complex aspects of word processing programs. The students were not illiterate, but not fully literate either. They were not reaching their full potential. They were in essence underachievers.

Forms of Literacy

Basically, literacy is the ability to read and write. Additional facets of literacy in the 21st century students hopefully master by the time they graduate from high school include functional, progressive, cultural, critical, and contemporary.

Functionally literate students have the skills to be members of the workforce and productive citizens (Apple, 1995; Kelly, 1997). One method of approaching functional literacy is found in a reductionist approach to teaching writing, where subjects are taught separately. This approach sees writing as a separate unit of study from reading, speaking, and listening. Students learn a

subset of skills focusing on grammar, spelling, mechanics, and penmanship (Erickson & Koppenhaver, as cited in Clippard, 1998). In the primary grades, the *Open Court Reading* program is based on a functional literate curriculum, emphasizing reading comprehension, discrete vocabulary, and specific ideas and concepts (Cadiero-Kaplan, 2002). Los Angeles Unified School District has adopted *Open Court Reading* in almost all elementary schools within the district, along with a systematic schedule of assessments on stories read and skills mastered.

On the other end of the spectrum, progressive literacy advocates a liberal, student-centered curriculum focusing on personal discovery (Kelly, 1997, p. 10). The curriculum is based on the idea that students bring knowledge and experiences that should be valued and built upon. The "content" of their writing is valued over the "form" (Edelsky, Altwerger, & Flores, 1991). Meaning and purpose should be the goals of reading and writing. This approach is exemplified by *whole language*, a philosophy of teaching that is individualized and student-centered. A major difference between functional literacy and progressive literacy can be seen as the difference between deductive and inductive reasoning: start with the parts to create a whole, or start with the whole and decide on the parts involved.

Cultural literacy focuses on providing a common core background of knowledge that emphasizes the teaching of morals, values, character, and ethics. This approach to literacy, promoted by Hirsch (1997), provides students with a common curriculum based on Western European/American history, art, and famous works. Students are given an overview of history, geography, art, and biographies to build awareness about many diverse topics. The reading program is based on providing the "great books" of literature in order to develop cultural capital. This method of teaching literacy is also sequential, with each grade building on the knowledge gained in previous years.

Critical literacy is the examination of history, culture, politics, and events from multiple perspectives and for multiple purposes (Apple, 1995; Freire, 1998). This study can reveal the power structures and struggles of events and cultures throughout history in the majority culture as well as in minority or traditionally marginalized groups (Cadiero-Kaplan, 2002). Students study writings and create responses from the perspectives of their own lives and experiences (Mclaren, 1998; Darder, 1991). Teachers who implement critical literacy help students see themselves in the larger picture of national or world structures and events. One method of doing this involves participatory problem posing, where the teacher introduces the subject or topic as a problem and solicits students to use their own background and experience as an integral part of finding solutions to the problem (Shor, 1992).

Developing children into literate adults is a social construct and is dependent on a variety of social contexts. Subscribing to one single theory or philosophy for all children regardless of their background, language, or experience is a misguided and potentially dangerous instructional strategy (Powell, 1999).

Today, cognitive models describe writing as a problem-solving activity which needs complex planning, evaluation, linguistic, and transcription processes (Beringer & Swanson, as cited in MacArthur, 2001). Some of these complex processes may not be attainable by all students by the fifth grade, but the zone of proximal development (Vygotsky, as cited in Burkhalter, 1995) indicated that people, including children, should be stimulated through a sequence of goals that increase in difficulty. If students are not challenged with work that is a little more difficult than they are used to, they will not reach the more complex levels of thinking and may take longer to learn new concepts.

Government Assessments

For many years, university professors, business leaders, and government agencies bemoaned the lack of fluent, critical-thinking, coherent writers among high school graduates. In response, the National Assessment of Educational Progress developed a written performance assessment for fourth and eighth graders and has collected data since 1984 in writing. This assessment includes writing assignments in persuasive, narrative, and expository genres. In response to the data collected in 1998, the U. S. National Commission on Writing in America's Schools called for a national agenda to improve writing proficiency by strengthening academic standards, using technology to expand writing opportunities, and providing professional development for teachers to aid in integrating writing in all curricular areas (Manzo, 2003). Their major findings were that, nationally, the percentage of fourth graders at or above "Basic" improved and at or above "Proficient" also improved in 2002. Only 2% of students performed at the "Advanced" level, but this was an improvement over the 1% recorded in 1998.

The percentage of students in the "Advanced" range should have been higher. In California, for the 2002-03 school year, the percentage of enrolled students identified as intellectually gifted was 7.4 % of the total school population (California Department of Education, 2003). The percentage of identified gifted students scoring at the "Advanced" level should more adequately reflect the number of gifted students in the state.

The National Assessment of Educational Progress also began tracking data for five urban school districts in the United States in 2002. In Los Angeles, 75% of students scored below 165 on a scale of 0-300. The national average is 178 (National Center for Education Statistics, 2002). It is difficult to determine exactly what has caused the small but significant increase in writing scores from 1998 to 2002.

Goals for Students

Beyond strong writing abilities and "cultural capital," students must also be able to function efficiently in a technologically advanced society. They must be able problem-solvers, with the ability to think critically in new situations, and ascertain how their work fits into the larger society (Johannessen & Kahn, 1997).

Recognizing that contemporary literacy requires high-quality writing, students must be able to demonstrate they can not only develop and analyze logical arguments, write for a variety of purposes and viewpoints, create pictures with words and make connections across ideologies, but also that they can communicate fluently and efficiently using electronic text. Electronic text is fluid and interactive. It can incorporate multimedia, be non-linear, and scaffolding can be provided to support less experienced students. The skills necessary to use electronic text appropriately and efficiently must therefore be explicitly taught (McKenna, 2001).

One small stepping stone to help foster technological fluency is learning how to type. Artwohl (1989) found that "keyboarding was a basic skill that enhanced individual interaction with the computer." Several studies performed in the last decade focused on computer anxiety and its relationship to keyboarding ability (Hemby, 1999).

Possible Causes

Low expectations by language arts programs, previous teachers, insufficient instruction in writing techniques, social and familial obligations outside of school, higher than normal student-to-teacher ratios, and societal changes in written communications are all possible causes for the lackluster writing produced by these otherwise very capable fifth grade students. *Open Court Reading* (2000), provides one writing prompt per unit and suggests teachers develop their own other related writing assignments. This does not provide students with enough practice in written communication. Previous teachers did not assign more than the required assignments, nor did they demand academic rigor in the work students completed.

Quality writing takes quiet, uninterrupted time. Many students participate in after-school programs, team sports, or have music lessons which impact the time they can spend writing. Many have multiple siblings or other family members living in the same household which also limits quiet, uninterrupted study time. Societal changes in how people communicate have also impacted written communication.

E-mail is often short, without excess verbiage, lacks depth, and sometimes even uses symbols (emoticons) to get the point across. Handwritten letters have become the exception rather than the rule in the past ten years. Fourth and fifth grade students have little frame of reference for handwritten letters.

Finally, Nike's trademarked slogan, "Just Do It!" has defined a syndrome that has permeated every level of society, including education. Reflection, discussion, and revision are all essential to high-quality writing. Just do it, get it done, and go on to the next task. This does not work with writing. Writers need to reflect on what they have stated, discuss it with other people (or just inside their own head), revise, change, incorporate, enhance, delete, and modify their work so that it will better reflect their thoughts and ideas.

Possible Solutions

Some possible solutions for lackluster work were provided in opportunities for the students to write more frequently and for a variety of purposes, including "quick writes" of 20-30 minutes, in-depth research projects, group round-table stories, compare and contrast essays, character analyses, and on-demand writing for assessment.

Students also received direct instruction in how good writers develop good writing using a variety of methods, including efforts by Culham (2003), Calkins (1994), and Purdy (1999). Nearly every day, students practiced various aspects of writing including narrowing a topic, how revision is different from editing, and how to use the word processing program effectively.

With 32 students, and no aide, the amount of time spent with individual students to discuss their writing, providing positive reinforcement and constructive criticism is very limited, but through the use of e-mail teacher and student could conduct a longer, more thorough dialogue regarding the writing. Many students had poor keyboarding skills which limited the amount of writing they could input for discussion. Therefore, all students participated in learning to keyboard in a sequential, consistent method using AlphaSmart Pros, individual word-processing mini-computers with a built-in keyboarding program.

All students received free e-mail accounts through the school district, training in appropriate electronic text messaging, and easy access to computers and the Internet in the classroom. Many students had computers at home and could use those, but all students were allowed to use classroom computers before and after school and during lunch time.

Finally, all students evaluated their own comfort level in writing, including their opinion on how learning keyboarding and electronic feedback helped or hindered the content of their writing.

Conclusion

Writing has been described as an art, a process, a skill. It is all of those, but it is truly a means to communicate a person's understanding of a thought, an image, an idea, or a world. In many cultures, the person who could tell a story, teach how something worked, express emotions, and share their beliefs was considered to be knowledgeable and worthy of respect. Today, students must have a secure foundation in functional literacy, but also need to be challenged and encouraged to develop progressive, cultural, critical, and contemporary literacy. They should be able to document their personal discoveries, recognize society's commonalities, express their opinions based on understanding events from multiple perspectives, and communicate with a wide variety of people. The ability to communicate fluently in writing is of paramount importance in this age of technology and information.

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Call for Articles

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