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- GAMES •
- MULTI-MEDIA •

• INTRODUCTION •

Past. Present. Future.

Reaching the future in the course of the present.
The present, a correlation of the past.

Spheres of time, each intertwined.
Can either survive without the other?

The present short-lived, consumed to the past.
The future once imagined, overtaken by the present.

Past....Present....Future.

The past is the present.
The present...the future.
The future is the past.

Poem by Hussam H. Kashou

• Site Premise •

The following project site was developed for EDU P&L 925.46 a Seminar on Educational Computing taught by Dr. Suzanne Damarin at the Ohio State University.

The concept and theme of this project is an expression of my personal reflections attained while examining learning theories and technologies of instruction. In my brief studies, I have come to the premise, that the future is rooted in the past and cultivated in the present. Thus, in order to best comprehend the future of educational technologies and promote efficient learning, one needs to understand the historical developments and context within various fields so as to grasp the concepts, theories and research presented.

Furthermore, one needed to go beyond the research and theories to reflect on the various factors that may influence and/or obstruct their construct. As a "student of knowledge" one must inspect, reflect and question. One should not merely accept what is read or theorized; rather he/she should explore deeply the context in which it was written. The when, where and why and then conceptualize how they relate and impact the when, where, why & how of the present and future. For example, in what role did/does culture, race, gender and religion impact the development of ones theories and motivate ones thoughts?

• TIMELINE •

Below are all the annotated and general bibliographies found within this site, listed in chronological order based on date in which they were written. Thus in a way it may be regarded as a timeline of educational research. In many of these reading past research is referenced and explained, however my intent in arranging the content in this matter is to get a better perspective of the various studies conducted and theories presented within a particular time. In doing so, I hope to get an enhanced outlook on the transformation of instructional technology and the progression of learning theory.

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passive receiver of instruction. He continues by giving examples of Sidney L. Pressey's teaching machines that were designed in the 1920's for the automatic testing of intelligence and information. Noting that Pressey might have been the first to emphasize the importance of immediate feedback in education and to propose a system in which students could move at their own pace. Pressey envisioned an "industrial revolution in education" but it seemed the "world of education was not ready." Skinner then argues that introducing a new type of "teaching machine" will provide students with an active way of learning. That this machine itself does not teach but instead is like a good tutor. This "good tutor" unlike lectures and textbooks, induces sustained activity and moves at the students pace allowing for thorough understanding of the material before moving on. It would guide the student with techniques of "hinting, prompting, and suggesting" and reinforce the student for correct responses with immediate feedback that will efficiently shape his/her behavior and hold the student's interest. Overall, it seems Skinner is proposing we explore the possibilities of technology in the educational system so as to help motivate active learning and meet the demands for education.

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problem-solving, and dialogue systems. They state the “learner as a bucket” philosophy still dominates computer-assisted learning. They mention alternative trends from a behaviouristic to cognitive approach to teaching and learning that view computers as systems that treat students as thinking, understanding and contributing individuals. They conclude by summarizing the various approaches and state the most promising in enhancing the educational systems are “those most concerned with methodological issues: problem-solving and dialogue systems.” Both of which are said to be based on the subject of artificial intelligence.

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Fosnot, C. T. (1984). Media and technology in education: A constructivist view. In *Educational communication and technology: A journal of theory, research, and development*. (pp. 195-205).

In her article, Catherine Fosnot argues that instructional designers have been grounded in empiricism and yet to grip the tenets of constructivism. She begins by giving a historical review of various studies on instructional uses of media. She then moves onto various studies regarding the constructivist model of cognitive development and explains the constructivists position in relation to media and educational technology. She notes a previous study on media research that pointed out how research has yet to support the direct influence of media on learning. This research suggested the role of instructional designers to be one of determining the necessary conditions when analyzing instructional problems. However, her overall attempt is to reinterpret that research within a constructivist framework as she intends to bring insights into the learning mechanism that might benefit future educational technology research.

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Streibel, M. J. (1986). *A critical analysis of the use of computers in education. Educational Communications and Technology- A Journal of Theory, Research and Development* , 34(3), 283-334.

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Brown, J. S., & Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42.

In this article, the authors argue that knowledge is situated, “being in part a product of the activity, context, and culture in which it is developed and used.” That the effectiveness of teaching practices are limited when they implicitly assume that conceptual knowledge can be abstracted from the situations in which it is learned and used. They propose cognitive apprenticeships, which “honors the situated nature of knowledge” and give two examples of mathematics instruction that exhibit this approach of teaching. Furthermore, they state that conventional schooling often ignores the influences of school culture on what is learned in school. Among the many aspects of this article, they present a figure representing “students’ progress from embedded activity to generality. Within this figure they suggest that “as students gain more self-confidence and control, they move into a more autonomous phase of collaborative learning, where they begin to participate consciously in the culture.” This culture would then help them develop its language and belief system and promotes the process of enculturation. Overall, they state that the importance of activity and enculturation to learning suggests a new epistemology might hold the key to a new perspective in education and the improvement in learning.

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This article by Palincsar was a response to Brown, Collins, and Duguid’s “Situated cognition and the culture of learning”

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Perkins, D. N. (1992). Technology meets constructivism: Do they make a marriage? In T.Duffy & D. Jonassen, *Constructivism and the technology of instruction: A conversation*. (pp. 45-55). New Jersey: Lawrence Erlbaum Associates, Publishers.

In this article, D. B. Perkins underlines the basic goals of education that are *retention*, *understanding*, and *active use* of knowledge and skills. The author states that these goals have proven difficult to achieve, however feels information processing technologies and educational practices surrounding the idea of constructivism lead to positive aspirations of meeting the educational goals. The author continues by breaking down learning environments into five facets: *information banks*, *symbol pads*, *construction kits*, *phenomenaria*, and *task managers*. Then talks about the constructivist approach to technology. The author then presents morals regarding three facets of educational design: *front-end analysis of tasks*, *instructional strategies*, and *assessment*. Overall, the author is stating that independently of one another, information-processing technologies and constructivism have much to offer approaches of instruction, yet combined together they are even more effective and efficient.

Staples, M. (1998). The Illusion of choice in computer-aided learning. *Journal of information ethics*, 7(1), 36-41.

Turkle, S. (2003). From powerful ideas to powerpoint. *Convergence: The international journal on research into new media technologies*, 19-25.

Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. New York: Palgrave Macmillan.

In his book, James Paul Gee gives an in-depth perspective on video games, learning and literacy; as he explores a number of popular games played on both game platforms (such as Xbox and PlayStation) and on the computer. He expounds on the impacts of these games on the player (i.e. the learner) and the various *domains* associated with them. While traditionally, people think of literacy as the ability to read and write, Gee suggests that games are “intricate learning experiences that have a great deal to teach us about how learning and literacy are changing in the modern world.” For example, he notes that images, symbols, diagrams, artifacts, and many other visual symbols are important in our modern societies which make way for a new “visual literacy” that one would need to learn how to “read.” Similarly, when people learn to play video games, they are learning a new literacy. Furthermore, we are exposed to what Gee argues to be thirty-six (36) important learning principles which are built into good video games, “principles that are strongly supported by current research on human learning in cognitive science such as:

- How one forms an identity.
- How one connects different sign systems such as words, symbols, artifacts and so on.
- How one chooses between different ways of solving a problem.
- How one learns from non-verbal cues.
- How one transfers abilities learned while doing one task to doing another.

Gee goes on to list and explain all thirty-six leaning principles. In summary, it is said that Gee’s book “will open your mind to the possibility that video games are the forerunners of instructional tools that will determine how we learn in the future.”

Prensky, M. (2005). Computer games and learning: Digital game-based learning. In *Handbook of computer game studies* (pp. 97-122): The MIT Press.

In his research, Mark Prensky refers to developing certain types of games for learning as he also works to explain the difference between what he defines as the *Digital Natives* and *Digital Immigrants*. He states that there are two reasons why we should use games for learning. 1-That today's learners have changed radically. As he believes that the digital natives, those who grew up with digital technology, think and process information differently than the digital immigrants. 2-These learners need to be motivated in new ways. Thus, computer games can help provide that motivation. He explains how learners have changed from previous generations do to today's learners being immersed with technology. He details his *Ten Ways Digital Natives Are Different*, which includes categories such as *Parallel processing verses linear processing*, *Random access verses linear thinking*, and *Graphics first verses text first*. He states "games bring together combination of motivating elements not found together in any other medium" as he continues by listing those various elements. Furthermore, we are exposed to his five learning levels of: How, What, Why, Where, When & Whether. Overall, he is stressing that it is important to understand how computer and video games are powerful learning tools which can be used to create effective learning opportunities for the digital natives. Noting the rich and complex relationship between computer games and learning; and highlighting "computer and video games; enormous potential for helping people learn more effectively in the future."

Juul, J. (2005). *Half-real: Video games between real rules and fictional worlds*. Cambridge, MA: The MIT Press.

In his book, Jesper Juul gives much insight on games, "from rules and structure to aesthetics and fiction to the complexities of player experience." He outlines a theory of what video games are, how they work with the player and how they have developed historically. He explores how games relate to the real world with reference to the relation between real rules and fiction worlds. He also "examines how rules provide challenges, learning, and enjoyment for players..." Furthermore, we are exposed to many interesting aspects and concepts, such as:

- Chunking
- Flow Theory
- Gameplay
- Emergent gameplay
- Emergence and progression games
- Player attachment
- Skill acquisition
- Strategy

- Projection

His overall analysis of games allows educators to better comprehend games and sets a foundation for further study on games and learning.

[Squire, K. \(2006\). From content to context: Videogames as designed experience. *Educational Researcher*, 35\(8\), 19-29.](#)

[Shaffer, D.W. \(2006\). *How computer games help children learn*. New York: Palgrave Macmillan.](#)

[Shaffer, D.W. \(2006\). Epistemic frames for epistemic games. *Computers & Education*, 46, 223-234.](#)

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• PSYCHOLOGICAL •

Education encompasses teaching and learning. One teaches so that others may learn. But what does it mean to learn? How does one learn? Questions as these lead to theories on learning and in turn, theories on the best approaches to teaching. These learning theories are meant to help us understand the complex process of learning and tend to be categorized into three main philosophical frameworks: behaviorism, cognitivism and constructivism.

The following are a few readings relate to educational psychology.

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• COMPUTERS •

The advancement of technology, such as the advent of the computer, has led to the studies on the use of technology for instruction. The main purpose of instructional technologies is the promotion of learning. Thus, a relation occurs between learning theory and the design, development and use of technology.

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Turkle, S. (1984). *The second self: Computers and the human spirit (1st ed.)* New York: Simon & Schuster, Inc.

Turkle, S. (2005). *The second self: Computers and the human spirit (20th Anniversary Ed.)* Cambridge, Massachusetts: The MIT Press.

In her book *The Second Self*, Sherry Turkle explores the relationships between computer users' and their machines. She goes beyond the basic uses of technology and investigates how this technology affects ones self. She speaks to audiences from children to university students to AI scientists to hackers. She divides the book into three main parts: "Growing up with computers: The animation of the machine", "The new computer cultures: The mechanization of the mind", and "Into a new age." Within these parts are topics ranging from children to video games, programmers to hackers, and artificial intelligence to "the human spirit in a computer culture." Her book allows one to open his/her mind to deeper contemplation of issues such as emotion, memory and thought. It raises thought on philosophy, religion, what it means to be a hacker, finding ones self in the computer, does the computer think? She suggests that because computers are thinking tools, they offer new models of what it means to know and to understand. That while technology changes aspects of our lives it also changes how we see ourselves and the "virtual world as context for explorations of identity." Towards the end she states "many of us read only what we have programmed our computers to bring to us; many of us speak...only to those with whom we agree. Many of us communicate all the time, but with greater speed and less depth." And she poses the question, "If our encounters with computers don't help us deal more compassionately and carefully with one another, then what will our attitudes, formed through our relationships with them, contribute to our fragile and threatened world?"

Streibel, M. J. (1986). *A critical analysis of the use of computers in education. Educational Communications and Technology- A Journal of Theory, Research and Development* , 34(3), 283-334.

Streibel, M. J. (1991). *A critical analysis of the use of computers in education. In Paradigms regained: The uses of illuminative, semiotic, and post-modern criticism as modes of inquiry in educational technology. (pp. 283-334): Educational technology publications.*

Staples, M. (1998). *The Illusion of choice in computer-aided learning. Journal of information ethics, 7(1), 36-41.*

Turkle, S. (2003). *From powerful ideas to powerpoint. Convergence: The international journal on research into new media technologies, 19-25.*

• GAMES •

Much has been said about games being powerful sources of learning. Likewise, research has been done on the various aspects of learning that are found in games. Some have stated why we should use games for learning and others suggest that video games are “intricate learning experiences that have a great deal to teach us about how learning and literacy are changing in the modern world.” [Gee, J. P. 2003]

[The below bibliographies have also been listed within the TIMELINE section of this site. Therefore, in this section along with the PSYCHOLOGICAL and COMPUTERS sections I have simply attempted to separate the readings into their most appropriate category. Noting that many of the readings could be placed within multiple sections.]

Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. New York: Palgrave Macmillan.

In his book, James Paul Gee gives an in-depth perspective on video games, learning and literacy; as he explores a number of popular games played on both game platforms (such as Xbox and PlayStation) and on the computer. He expounds on the impacts of these games on the player (i.e. the learner) and the various *domains* associated with them. While traditionally, people think of literacy as the ability to read and write, Gee suggests that games are “intricate learning experiences that have a great deal to teach us about how learning and literacy are changing in the modern world.” For example, he notes that images, symbols, diagrams, artifacts, and many other visual symbols are important in our modern societies which make way for a new “visual literacy” that one would need to learn how to “read.” Similarly, when people learn to play video games, they are learning a new literacy. Furthermore, we are exposed to what Gee argues to be thirty-six (36) important learning principles which are built into good video games, “principles that are strongly supported by current research on human learning in cognitive science such as:

- How one forms an identity.
- How one connects different sign systems such as words, symbols, artifacts and so on.
- How one chooses between different ways of solving a problem.
- How one learns from non-verbal cues.
- How one transfers abilities learned while doing one task to doing another.

Gee goes on to list and explain all thirty-six leaning principles. In summary, it is said that Gee’s book “will open your mind to the possibility that video games are the forerunners of instructional tools that will determine how we learn in the future.”

Prensky, M. (2005). Computer games and learning: Digital game-based learning. In *Handbook of computer game studies* (pp. 97-122): The MIT Press.

In his research, Mark Prensky refers to developing certain types of games for learning as he also works to explain the difference between what he defines as the *Digital Natives* and *Digital Immigrants*. He states that there are two reasons why we should use games for learning. 1-That today's learners have changed radically. As he believes that the digital natives, those who grew up with digital technology, think and process information differently than the digital immigrants. 2-These learners need to be motivated in new ways. Thus, computer games can help provide that motivation. He explains how learners have changed from previous generations do to today's learners being immersed with technology. He details his *Ten Ways Digital Natives Are Different*, which includes categories such as *Parallel processing verses linear processing*, *Random access verses linear thinking*, and *Graphics first verses text first*. He states "games bring together combination of motivating elements not found together in any other medium" as he continues by listing those various elements. Furthermore, we are exposed to his five learning levels of: How, What, Why, Where, When & Whether. Overall, he is stressing that it is important to understand how computer and video games are powerful learning tools which can be used to create effective learning opportunities for the digital natives. Noting the rich and complex relationship between computer games and learning; and highlighting "computer and video games; enormous potential for helping people learn more effectively in the future."

Juul, J. (2005). *Half-real: Video games between real rules and fictional worlds*. Cambridge, MA: The MIT Press.

In his book, Jesper Juul gives much insight on games, "from rules and structure to aesthetics and fiction to the complexities of player experience." He outlines a theory of what video games are, how they work with the player and how they have developed historically. He explores how games relate to the real world with reference to the relation between real rules and fiction worlds. He also "examines how rules provide challenges, learning, and enjoyment for players..." Furthermore, we are exposed to many interesting aspects and concepts, such as:

- Chunking
- Flow Theory
- Gameplay
- Emergent gameplay
- Emergence and progression games
- Player attachment
- Skill acquisition
- Strategy

- Projection

His overall analysis of games allows educators to better comprehend games and sets a foundation for further study on games and learning.

[Squire, K. \(2006\). From content to context: Videogames as designed experience. *Educational Researcher*, 35\(8\), 19-29.](#)

[Shaffer, D.W. \(2006\). *How computer games help children learn*. New York: Palgrave Macmillan.](#)

[Shaffer, D.W. \(2006\). Epistemic frames for epistemic games. *Computers & Education*, 46, 223-234.](#)

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• MULTI-MEDIA •

• Digital Expression •

Most scholarly works, articles, and in-depth research found online are presented in the form of text (i.e. PDF, Word, PowerPoint, etc). This is understandable; the medium very much acceptable and very useful. However, why not take it to the “next level”?

I feel in addition to those forms we need to begin using new mediums for expressing the research. As the technologies and resources are advancing, we need to go beyond the text and start rethinking our approaches in using the tools and presenting the knowledge. While, the use of multi-media may not be the best form of presenting scholarly works, they can however be an additional supplement to help simplify the research so that the content may reach a wider audience.

I’m a proponent of using multimedia avenues such as video and even mediums like this site as a means of expression and presentation. I feel it can be a method of motivating others (such as students) to actively learn and may help in stimulating thought.

• Videos •

The below videos are a few examples of individuals using creative approaches to express their thoughts concerning the impact of technology on students and learning.

Much can be learned from examining these clips in regard culture, expression, and access among others. Thus, in posting these films I wish for us to reflect on the various dimensions found in them. For example, that we not only focus on the data presented, but also how it was presented, why and so on. Thoughts on what they suggest about the future on technology, society and our culture? How does our digital culture impact learning?

Video: [Pay Attention](#)

Time: 07:41

Video: [A Vision of Students Today](#)

Time: 04:44

Video: [The Machine is Us/ing Us](#)

Time: 04:33

Video: [Information R/evolution](#)

Time: 05:28

[The content and ideas presented in videos on this site are not necessarily my views, nor am I rejecting or approving them. These are examples of ideas related to the subject that I hope will inspire deeper reflection and understanding.]