THE NEW WHIRL THEORY

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Abstract

With today’s learners, integrating a singular path of learning within Instructional Design would be the same as asking drivers to drive one type of car, restaurants to serve one simple meal, women to wear one shoe style; the same rings true for learning theories. In our hypermedia society of interconnected choices, one size does not fit all. It would be the same as asking social media aficionados to use one app, which brings us to the root of the education problem – distractions. *YouTube, Facebook, Instagram, Netflix*… pulling minds in multiple directions. Digital youth, millenials, even baby boomers are *all in* with this hypermedia culture. When placed on a single path of irrelevant learning, loss of interest and poor retention result. Over time, a great many flavors or learning theory have developed, each one evolving year after year. As a new theory is born, key tenets of prior theories are left behind, forgotten. Comparing theory development to automobiles, few are old enough to remember stepping on a button on the floor to dim the headlights. New theories of how to dim headlights (or flash your brights) replaced them; a great idea left behind, forgotten. In lieu of thinking of ways to blend the strengths of old theories together, psychology experts seem to have been focused on entirely new theories of how a person goes about retaining knowledge, engaging taught behaviors, and more quickly doing so. They have explored new, unique theories of learning, when all along, the golden goose, the holy grail, the Mecca theory was right there before them.

WHIRL THEORY

Weston’s Hypermedia Integrated Relevant Learning

WHIRL, an acronym borrowing from the previous brilliance of Mnemonics, cognitively coined by Matlin (1983), utilizes every great facet of learning behaviors paving trails before it, blending the relevant concepts together into one awesome, digestible “shake.” It applies the best of past theories to today’s learning environment, and possibly quite far into the future. Behaviorism, Cognitivism, Constructivism. Skinner, Bruner, Gagne. Motivation, Zone of Proximal Development. WHIRL blends the best of worlds.

Though blended learning is a key facet of WHIRL, the primary asset of this theory is in the use of Hypermedia for learning. Just what is Hypermedia? One might think in terms of multimedia, while another thinks of Innovative Technical Wizardry, or ITW. It is all that and more, the near instantaneous connection of learner to relevant information. ITW has taken static information and turned it into multi-path multimedia. Text evolved to text and pictures, then to text and pictures with sound (WWII instructional film and today, video), engaging more sensory information. Gaming. Virtual worlds. What’s next?

Turning static information into multimedia was a giant leap for teacher kind, yet the greatest piece of multimedia in the world is dark and useless without ITW. Computers and the Internet are the fuel and engine that have enabled multimedia, allowing a learner to get where they want to go in a big Bugati way, much faster than the days of horse and buggy trips to the library. Still, there remains a great deal of value to a horse and buggy; riding along more slowly, bringing along the best of the past. Technology Integration is an art form.

Though WHIRL could be considered an amalgam of theories, it could also be described as a combination of instructional principles, or practices. Practice is indeed an integral part and parcel of WHIRL, which is the bedrock of behaviorism. While behaviorism took years of experimentation with rats to develop, WHIRL, like today’s society, was spun in high fashion, designed to accelerate hypermedia based learning through focused, highly connected paradigms.

How a learner seeks out Relevant pieces of information is directly associated with their desire to learn. It is a motivated path of discovery, which utilizes many facets of constructivism, yet utilizes goals, objectives, and assessments. To this purpose, it utilizes Gagne theory, and the Dick, Carey & Carey model. Not only do we need to understand how to harness the nuclear learning power of interconnectivity, we should comprehend and utilize best practices of landmark theories to integrate these hyper paths into useful activity. The goal? A fast track to digest information, funneling to working memory, channeling to long-term memory. Do you remember that wave you “surfed” last week? You just may with the principles of WHIRL.

**Principles of WHIRL**

**Focused, Relevant Learning**

The greatest challenge to hypermedia-based learning is sifting through the vast amount of information multiplying astronomically through the Internet. It is no longer a matter of finding the information. The information exists. WHIRL paths rely more upon which information holds the greatest truth, and which are the most relevant. This would be applying Ausubel’s (1962) Meaningful Reception Learning to the 21st Century. Here are the five major directions of search. Some are receptive, others discovery based, yet grounded with organization and focus:

• Utilize appropriate Search Keywords • Seek Libraries of Scholarly Journals

• Seek Communities of Focus • Utilize topical multimedia • Organization of research

These five approaches to knowledge attainment through hypermedia arm the learner with a faster avenue to the direct application of skills. Background and general knowledge attainment is acquired in formative years, but prolonged drudgery of irrelevant, extraneous knowledge as learners become already familiar with basic concepts is counterproductive.

**Motivation**

Following in the footsteps of theorists such as John Keller and Albert Bandura, WHIRL utilizes motivation as the learning engine. Without motivation, learning falls short of being self-driven. Self–efficacy, self–regulation and self–momentum could be attributed again to Gagne, yet the WHIRL theory is also teacher motivated. It challenges the instructor to determine what the learner’s are interested in. What are their intrinsic values? Is the subject matter again, relevant to the learner’s goals? If not, how can they be tailored to fit within the study goals of the group? WHIRL aims to:

• Build confidence in the learner’s abilities to grasp course subject matter.

• Design self-reflective exercises.

• Utilize attention gaining strategies

**Goals, Objectives, Assessments**

The backbone of WHIRL might seem to be mired in the woods of constructivism, however, WHIRL is designed to utilize an expert guiding hand. Based on either blended learning (in class with an online component) or strictly online in a *virtual environment* (for working professionals), there is an instructor of knowledge present in this learning process. It is this instructor, or professor, whom designs goals and objectives, creates assessments which guide the learner on their path of discovery. WHIRL is more about the journey than the destination, but believes that goals and objectives, here called *destinations* are self-motivating, and that assessments hold learners accountable.

**Gaining attention**

While Gagne’s (1985) cognitive strategies are self-guided, *gaining attention* is first listed amongst Gagne’s Nine Events of Instruction. How does an Instructor spark attention in an online course? They must use powerful forms of video presentation, revealing their own passion for the material to kick off each Learning Element (previously known as Chapters), Skype, or what comes next. Through exploring the Instructor’s experience, they are inspired and thus motivated toward subject matter that may have previously been of scant interest. WHIRL Instructors are trained to make themselves visible, adding a sensory component… personality.

**Maintaining attention**

Maintaining this attention is a larger part of the WHIRL theory, hand in hand with Retaining attention. Regardless of what form the information being presented is in – text with illustration, video, or again, whatever lies in the future (WHIRL is future proof!) – that information must be broken up into digestible chunks of information. Driscoll (2005) reminds us that “it’s important to present information in knowledgable chunks” to prevent cognitive overload (pg. 366).

**Mayer’s (2001) Cognitive Theory of Multimedia (CTML)**

Borrowing from Mayer (2001), who developed his theory along with Moreno (1998), WHIRL acknowledges their claim that they have performed enough empirical research to prove that pictures and text together produce deeper meaningful learning than text alone. CTML is grounded in three criteria: dual-capacity of absorption (we have the ability to process at least dual channels of sensory), limited mind capacity assumption (limited ability to process from just one constant flow of text), and the active processing assumption (stimulation of both intriguing illustrations and moving multimedia). Sorden (2012) points out that Mayer borrowed from past theorists, Baddeley (1986) Paivio (1986) and Sweller (1988,1994). That “people construct knowledge in meaningful ways when they pay attention to the relevant material, organize it into a coherent mental structure, and integrate it with their prior knowledge,” is attributed to Mayer.

**Learning Elements**

*College textbooks are dead*. Textbooks should be *illustration dominant*, with modern and appealing graphic design elements equivalent to DK Guides’ publications. WHIRL takes Mayer’s principle on step further, believing that learning elements must also be online to incorporate **hyper connectivity** associated with the WHIRL theory, and that those elements can produce even greater meaningful learning through motion. Relevance still plays a major part. As well, according to Mayer (2009), does exclusion of irrelevant material.

**Multimedia Videos**

Relating in terms of the most powerful and common form, Video, should also be connective and chunked with: • An attention gaining motion graphics but strong, pulling story element.

• Statement of learning goals • Chapters, segued with titles to give rest.

• Never attempt to present all material. • End with an interactive call to action

Videos should be varied in approach, through the use of: Montage storytelling techniques, mixing narration and interviews, Situational video (actors playing out a learning situation) and Freeform videos with no narration, where text, song, and pictures tell the story.

**Multimedia Games**

Learning should not be all fun and games, but should incorporate games to break up the monotony. The advantages of blended learning include physically interactive games. A game can even incorporate groups teaching part of the learning element to the rest of the class, with the winning presentation getting cupcakes! For online learners, Serious Games are highly effective, and should be designed with a high degree of relevancy, up leveling, and down leveling when learning is dormant. The game should tell a story that further motivates the learner. This is a gamification based paradigm, rewarded with extracurricular learning, not just cupcakes.

**Prior knowledge SCAFFOLDING**

All multimedia should build upon prior knowledge. The material should be digestible, yet push Vygotsky’s (1931) *Zone of Proximal Development*. In other words, videos should not be over explanatory of subjects already known, and at the same time not overbearing of too much information unfamiliar to the learner. The key to ZDP is to utilize an expert who can guide their path through *mentorship,* and remove this scaffolding once the learner “has wings.”

**ASPECTS OF WHIRL**

WHIRL is revolutionary in that it utilizes a different manner of grading than traditional education, incorporating Levels within each course. Levels make each and every learner feel as though they are progressing. Competition can be beneficial or detrimental, so each person’s level is shared privately. If grades must be utilized, they should be based on effort, not assessment results. Though knowledge checks will be utilized frequently to check learning levels and encode learning, they will not be graded elements. A student with a high level of intelligence entering at Level 6 will be expected to raise their bar just as much as one beginning at Level 1. The challenge to this theory is to place students of a similar level together, as no child left behind can also translate into every child left behind. This theory is best applied to the distance learner.

**Information ACCESSIBILITY**

Digital learners are accustomed to being able to access their paths of entertainment and social media through mobile devices. While not all educational material may be suitable for mobility, the impetus is on *going mobile*.

**Focused Group INTERACTION**

Blackboard. Communities. Google Collaboration Tools. These are just a few of today’s tools necessary to bring social learning to life and enable this mobility. WHIRL was derived from the graduate study group interactions on BB, where one can formulate their own opinion based on mentorship and opposing opinions, with Instructor guided prompts and mentor based interaction.

**Instructor GUIDANCE**

One foundation of WHIRL that differs from constructivist student driven BB communications, is that the Instructor becomes more involved in the beginning and later phases of the group interaction. Constructivism is about social interaction and discovery, but as Bruner pointed out, was flawed in its lack of direction. Whirl theory agrees, yet takes it further to allow for times of unaided discovery and interpretation of the universe, and times of guidance. As WHIRL based study groups attain an expert level of discussion, teacher mentored scaffolding can be eased away, but expert guidance is what students, especially those motivated by paying for their own education, expect.

According to Gagne’s (1983) affective domain, a person’s attitude developed towards a subject is directly related to the input of that information. If the instructor is able to steer the student in the right direction, rather than down a bad avenue or dead end street, the resulting attitude, while still up to the learner, can be adjusted.

**MOTOR SKILL engagement**

Engaging any form or motor skill enhances encoding to memory. For example, showing a video or even witnessing a live demonstration of video editing will not transfer to repeating the steps demonstrated. Until the learner practices by going through the keystroke and shortcut motions, they will barely grasp the concepts involved.

**ENCODING**

There are a great many methods of encoding information into LTM, including Mnemonics, memorable case studies and storytelling. Here are a few more:

Imprinting: Highlighting text for recall is effective for narrowing text search, but

writing information down even once, according to Annabel Lee, French Language Professor at University of San Francisco, encodes better than the use of Flash Cards: To that effect, while digital flash cards are more appealing to digital youth, writing key points of information onto flash cards encodes through the attentive aspect of writing.

SAP: Song and Poem. Here, *primacy* and *recency* come into play, yet many a song and poem are remembered long after the majority of the language has faded away. The WHIRL cure for lost language retention is…

Immersion: Armed with background knowledge, there is no better approach to learning than placing oneself in the actual learning environment. Bruner (1971) claims that the best way to solve problems is to be influenced by the culture in which that problem is embedded (Driscoll, 2005, pg. 245), such as a language.

**CORE (Cognitive Overload Rehab Exercises)**

The *triarchic model of cognitive load* was theorized by DeLeeuw & Mayer (2008). This model holds that the triarchic elements (essential, extraneous, and generative) are the detrimental symptoms of cognate retention that birthed multimedia learning and instruction, or simply to “manage essential processing, reduce extraneous processing and foster generative processing (p. 57).” The model again, is mired in Sweller’s cognitive load theory (Chandler & Sweller, 1991; Sweller, 1988, 1994).

WHIRL treats cognitive load as the most important stonewall to memory absorption. Both Instructors and learners will be taught project management practices of time management, scheduled study time, scoping breadth of study, and life balance practices. WHIRL theory believes that overloading the mind with information without frequent breaks to stretch and exercise is counter productive. As well, too much overall time connected to electronic media is detrimental to memory retention and overall health. In most cases, it takes a healthy body to support a healthy mind. This is why blended learning offers the best avenue for information transfer to LTM. Integrating learning into physical game playing is a mind awakening exercise.

**Conclusion**

While there are many details too numerous to mention within the confines of this paper, such as imposing confinements on discovery, Mayer’s (2009) personalization principle and spatial contiguity, all of which are included in the basic tenets of the WHIRL theory… hypermedia, integration, and relevance. It is again, a blend of the best theories applied to today’s electronically connected environment.

The adoption of WHIRL is necessary and imminent to retain learners in educational systems, through an educational evolution. Recognizing that major universities are the bastion of knowledge, it is alarming to see that most are slow to adapt in the manner and methodologies to access to that precious information vault. Once stellar institutions teaching Instructional Design are utilizing outdated modes of instruction. They too must self reflect, and do so quickly, before they are left behind in the intelligent dust.

The most malleable and developmental aspect of WHIRL is the work ahead required to apply WHIRL to all age levels. What’s good for the goose is not always good for the gander. Placing young children in front of a computer for hours at a time is in essence robbing them of their natural childhood discovery. Chaining anyone to electronics is a recipe for ill health, and eliminates the touch, taste, smell sensory encoding. To address this, WHIRL utilizes the connectivity of the Internet to engage learners with prior knowledge, connect with physical learning groups, and with those groups enlist in tangible touchable exploration activities.

WHIRL is not perfect and like any theory in infancy, much development remains. To that effect, WHIRL is designed as an open platform for educational evolution. It does not choose to be revolutionary in that it respects the bastions of past theories, yet addresses, flows with, and takes of advantage of giant leaps in technology.

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