NEW WAY TO LEARN, NEW WAY TO SUCCESS

Transforming A Brain-based Library Via Active Learning Instructions

Hasliza Ali
Universiti Malaya
haslizali@gmail.com

Wan Emilin W. Mat Alli
Universiti Sains Malaysia
emilin@kck.usm.my
OVERVIEW

• Active learning
• The concept of brain-based learning
• General findings from brain research
• Implementation in a Malaysian library context of active learning
ACTIVE LEARNING
Definition

Influential method of teaching

Greenwood – as “The process of having students engage in some activity that forces them to reflect upon ideas and how they are using those ideas”

Richard Hake - "interactive engagement“ -
Seven Principles for Good Practice in Undergraduate Education

- Encourage contacts between students and faculty
- Develop reciprocity and cooperation among students
- Use active learning techniques
- Give prompt feedback
- Emphasize time on task
- Communicate high expectations
- Respect diverse talents and ways of learning
Four main components in conducting an active learning environment

1. Clear communication of what will be taught
2. Obtaining and maintaining student engagement
3. Monitoring student progress
4. Immediate feedback
Learning Pyramid

- **Lecture**: 5%
- **Reading**: 10%
- **Audio-Visual**: 20%
- **Demonstration**: 30%
- **Discussion Group**: 50%
- **Practice by Doing**: 75%
- **Teach Others/Immediate Use**: 90%

Source: National Training Laboratories, Bethel, Maine
BRAIN-BASED LEARNING
Brain-based library in this study will be based on the principle of brain based learning (BBL). Problem based learning (PBL) as well is related to the same root as BBL.

“Brain-based learning is a way of thinking about the learning process. It is a set of principles; and a base of knowledge and skills upon which we can make better decisions about the learning process” (Jensen, 2000)
12 PRINCIPLES FOR BRAIN-BASED LEARNING
The brain is a parallel processor.

- Performs many functions simultaneously.
- Thoughts, emotions, imagination, and predispositions operate concurrently and interact with other brain processes and other modes of information.
Learning engages the entire physiology.

- Physical health -- the amount of sleep, the nutrition -- affects the brain.
- Moods. Learning is as natural as breathing
- Fatigue will affect the brain's memory.
The search for meaning is innate.

- We are naturally programmed to search for meaning.
- The search for meaning is survival-oriented and basic to the human brain.
- The brain needs and automatically registers the familiar while simultaneously searching for and responding to novel stimuli.
The search for meaning occurs through "patterning".

- Patterning refers to the organization and categorization of information.
- The brain resists having meaningless patterns imposed upon it.
- Patterning is everywhere. We want to impose our patterns on what we see, and breaking patterns is very difficult.
Emotions are critical to patterning.

- Emotions are critical to patterning.
- What we learn is influenced and organized by emotions and mindsets involving expectancy, personal biases and prejudices, self-esteem, and the need for social interaction.
- Emotions and thoughts literally shape each other and cannot be separated.
Every brain simultaneously perceives and creates parts and wholes.

- The "left-brain, right-brain" - both hemispheres interact in every activity, from art and computing to sales and accounting.
- The "two-brain" doctrine is most useful for reminding us that the brain reduces information into parts and perceives holistically at the same time.
Learning involves both focused attention and peripheral perception.

- The brain absorbs information of which it is directly aware, but it also absorbs information that lies beyond the immediate focus of attention.

- In fact, the brain responds to the entire sensory context in which teaching and communication occur.
Learning always involves conscious and unconscious processes.

- We learn much more than we ever consciously understand.
- Most of the signals that are peripherally perceived enter the brain without our awareness and interact on unconscious levels.
We have at least two types of memory -- a spatial memory system and a set of systems for rote learning.

- Our natural spatial/autobiographical memory system registers everything -- down to the details of your meal last night. It is always engaged, is inexhaustible, and is motivated by novelty.

- We also have a set of systems for rote learning, or recalling relatively unrelated information. These systems are motivated by reward and punishment.
Learning is developmental

The brain understands and remembers best when facts and skills are embedded in natural spatial memory.

Our native language is learned through multiple, interactive experiences. It is shaped by internal processes and by social interaction.
Learning is enhanced by challenge and inhibited by threat.

- The brain’s priority is always survival - at the expense of higher order thinking
- Stress should be kept to a manageable level
- Provide opportunities to “grow” and to make changes
Each brain is unique

- We all have the same set of systems, and yet we are all different
Relaxed Alertness

Orchestrated Immersion

Active Processing

Three Interactive And Mutually Supportive Elements That Should Be Present In Order For Complex Learning To Occur
BBL – Useful To The Learning-Teaching Process
✓ Problem Based Learning (PBL) curriculum was more effective in helping students to learn and that this applied to both clinical performance and knowledge base.

✓ The findings indicate that the PBL course was more successful in terms of students’ academic performance than the traditional course, and this suggests that the change to a PBL course is worthwhile.
Study the impact of brain based learning on students’ academic achievement.

The major purpose of the study was to see the impact and effectiveness of brain based learning environment in secondary schools.

Analysis and results of the study showed that brain based learning environment was found to be effective in learning. The students of brain based learning method showed better results than traditional method of teaching.
Awolola, S.A (2011)

✓ A study on the effect of brain-based learning strategy on students’ achievement in senior secondary school mathematics in Oyo State, Nigeria.

✓ The experimental group was taught mathematics using the Brain-Based Learning Strategy (BBLS). The control group was taught the same concepts in mathematics using the pre-planned lesson

✓ These results showed that brain-based instructional strategy enhanced student's achievement in Mathematics better than the conventional method.

✓ Could be due to the fact that brain-based learning strategy is a learner-centered instructional strategy
OBJECTIVE OF STUDY
Objective of study

1. To understand the existing practice of teaching library instructions in academic libraries in Malaysia.
2. To evaluate the integration of active learning strategies in library instruction classes.
3. To investigate librarians' understanding of brain-based learning in library instructions.
Method of study

- Quantitative research
- Likert scale 1 to 5
- Targeted respondents: librarians in academic libraries and private colleges
- Participated respondents: 46 respondents from 20 libraries
FINDINGS

Overview
Active Learning
Brain-based Learning
Brain Research
Objective of Study
Method
Findings
Conclusion
Demographic Findings

Participating institutions

ALLIANZE UC OF MEDICAL SCIENCES
IIUM
IMU
MMU
UKM
UM
UMK
UMP
UMS
UMT
UNIMAP
UNISZA
UPM
USIM
USM
UTHM
UTM
UTP
VOLUME
Demographic Findings

1. Participating institutions

2. Gender distribution

- Female: 61%
- Male: 39%
Demographic Findings

1. Participating institutions
2. Gender distribution
3. Experience in teaching user education classes
Approach to library instructions

Compulsory to students?

- Not compulsory: 54%
- Compulsory: 46%

Follow specific syllabus/modules

- With modules: 89%
- Without modules: 11%
Approach in library instructions

Types of Library Instruction

- **Large Group**: 80%
- **Hands on Training**: 87%
- **Small class**: 78%
- **Face to Face / Individual**: 70%
- **Computer Aided Instruction**: 57%
- **Games**: 7%
- **Short-test / Quiz**: 48%
- **Others**: 13%

Legend:
- Large Group
- Small class
- Face to Face / Individual
- Computer Aided Instruction
- Games
- Short-test / Quiz
- Others
Implementation of Active Learning

I follow a specific module for my user education programme

The user education programme modules include theoretical as well as practical aspects of learning

I customize my user education modules/slides/presentations according to the needs of the students

I explain the objectives and class outline to the students before I start my class

The students are divided into pairs or smaller groups for discussion
The students interrupt me to ask questions when I was teaching the class.

I give the students a set of tasks/problems/quiz to be solved during the class.

I currently attend courses on teaching pedagogy and workshop about the latest trends in education.

I encourage a busy, active and noisy classroom environment.
Implementation of Active Learning

- Specific Modules
- Theoretical and Practical Modules
- Customization of modules
- Explanation of Class Objectives
- Smaller Groups Division
- Questions During Class
- Solving Tasks
- Information Memorization
- Attending Pedagogical Courses
- Active Classroom Environment

Scores:
- Active Classroom Environment: 3.42
- Attending Pedagogical Courses: 1.98
- Information Memorization: 3.33
- Solving Tasks: 3.49
- Questions During Class: 3.78
- Smaller Groups Division: 2.60
- Explanation of Class Objectives: 4.22
- Customization of modules: 4.22
- Theoretical and Practical Modules: 4.27
- Specific Modules: 4.02
Implementation of Brain Based Learning

- I make sure my tools (example power point slide) are rich with colours, to make them more interesting
- I arrange the class in table grouping to enable them to interact with one another
- I use games in my class
- I create a supportive, challenging, and complex classroom environment where questions are encouraged
- I utilize learning strategies such as actions, debates, charts in my classroom
Implementation of Brain Based Learning

I use the newest technology in my class

I encourage some form of movement in my classroom to help users to be more focused on the topic

I motivate my students to learn on their own

I display relevant material in the class

I change the venue of the class
Implementation of Brain Based Learning

- Rich Colour Integration: 3.96
- Class Arrangement: 3.93
- Games: 3.44
- Challenging Class Environment: 3.24
- Variety of Learning Strategies: 3.34
- Newest Technology: 3.44
- Movement In Class: 3.34
- Self Learning: 2.58
- Display: 4.07
- Venue Change: 2.18
- New Technology: 2.40
- Class Arrangement: 2.16
- Rich Colour Integration: 2.40

Bar Chart: 0-5 scale
Librarians' Awareness Of Active Learning And Brain-based Learning

- Active Learning
  - Yes: 36
  - No: 10

- Brain-based Learning
  - Yes: 20
  - No: 26
CONCLUSION
Lessons learned from survey

1. There is an indication of Malaysian academic librarians implementing active learning while conducting library instructions,
2. Several methods of active learning approach are used in user education programmes.
3. Some brain based learning principles are implemented.
4. Awareness of BBL is still low.
5. Active learning is widely accepted and practiced by Malaysian academic librarians.
Recommendations

- BBL Special Interest Group
- Recognition as educationalist
- Training for librarians
- Progressive library space
- Net gen information literacy
- Holistic Transformation towards Brain-based Library
- Blended collection
The next step...

The Way Forward

Transformation of brain based library instructions
to meet changing user expectations

Digital natives vs. digital immigrants