

# “Learning and Technology: past, present and future”

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"De-mystifying E-learning", Mumbai, India**

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*Dr. Gary Woodill*

## Welcome!

### Brief introduction:

- Started teaching grade school in 1971, and teaching teachers in 1977
- Started using computers in 1978
- Doctor of Education, University of Toronto, in Ed. Psych., 1984
- Developed university course on computers in education, 1985
- Produced 15 educational CD-ROMs, 1993-1997
- Web-based Learning Management System (LMS), 1998
- 10 white papers and several presentations on e-learning

**For more information, go to: [www.learnflex.com](http://www.learnflex.com)**



*Dr. Gary Woodill*

**Welcome!**

## **Objectives:**

- To present e-learning in the context of the history of technological innovations in education
- To examine the components of the e-learning experience
- To critically look at three different directions for e-learning
- To review the trends for e-learning in the near future

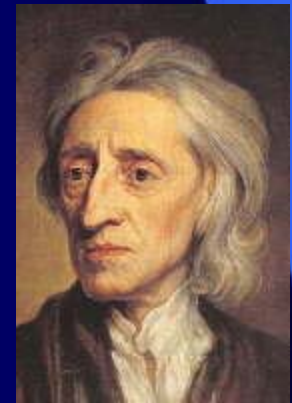
## Understanding Learning

We begin with the 17<sup>th</sup> century debate between Jean-Jacques ROUSSEAU and John LOCKE...



- Rousseau suggested that a child is born with all the knowledge he or she needs. In *Emile* he tries to show that the child should be allowed to show this “natural” knowledge without the intervention of teachers or schools.

- Locke contended that we are born as “blank slates” (*tabula rasa*), upon which any knowledge could be written.



## Rousseau was wrong!

- We are **NOT** born fully formed in terms of knowledge of the world
- We know, from cases of “feral children”, and children who are neglected, that we will learn little without the intervention and support of other human beings
- Experience of the world is critical

(Rousseau sent all 5 of his children to an orphanage)

But...

## Locke was also wrong!

- We are **NOT** born as “blank slates”
- We have instincts, reflexes, capacities and built-in knowledge from birth
- Yet, we are able to change our behaviours and increase our store of knowledge throughout life...

That change is called **LEARNING**.

## What are “technologies”?

- Early humans devised tools for hunting and fishing, fire for warmth and cooking, marks for directions signaling, and language for communication.



- These were the first “technologies” – techniques, materials, and devices that extend human abilities.
- Educational technologies extend our ability to teach.

## Learning without technologies

There are many ways to learn...

Perhaps the first way we learn is by imitation.

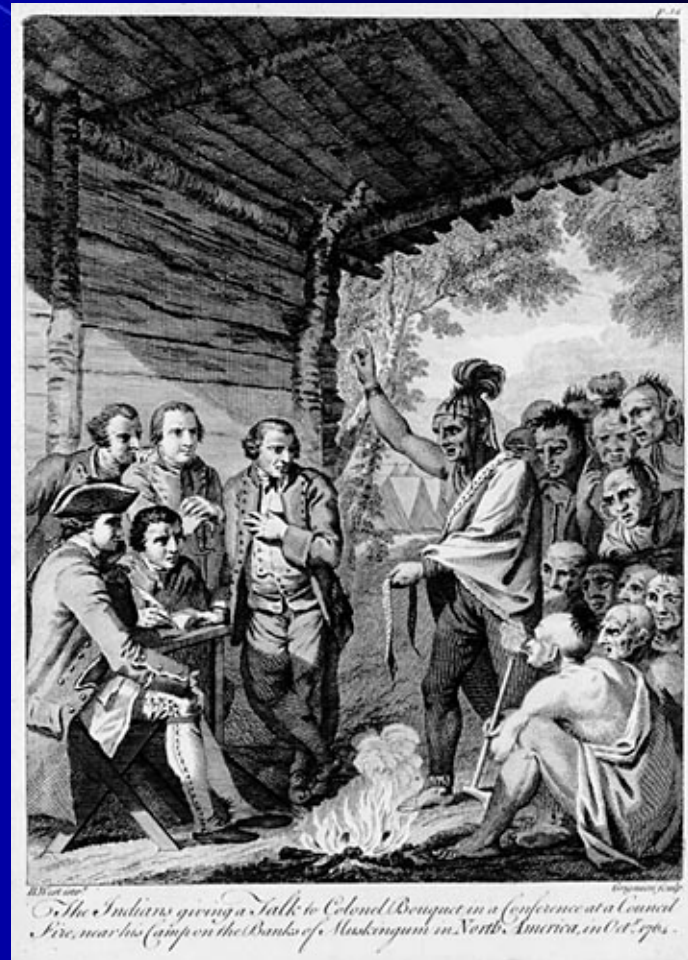


Learning by imitation doesn't require technology... just the ability to follow an example.

## Ed. Technology 1: Language and Stories

A second way we learn from an early age is by listening to stories and repeating them to others.

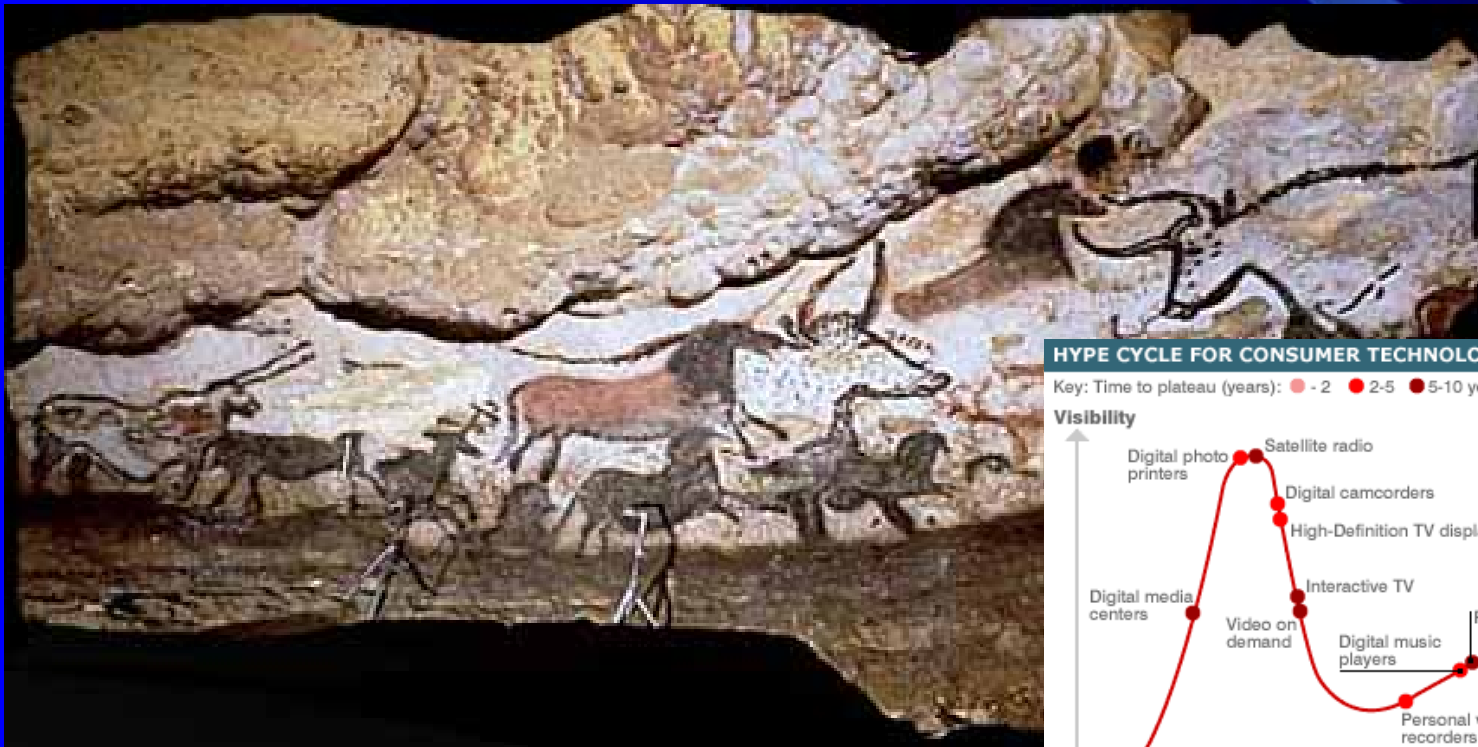
Stories are a way of “depositing” our thoughts and memories outside of our physical bodies, into the larger community.



## Ed. Technology 2: Pictures

A third way to learn is by seeing.

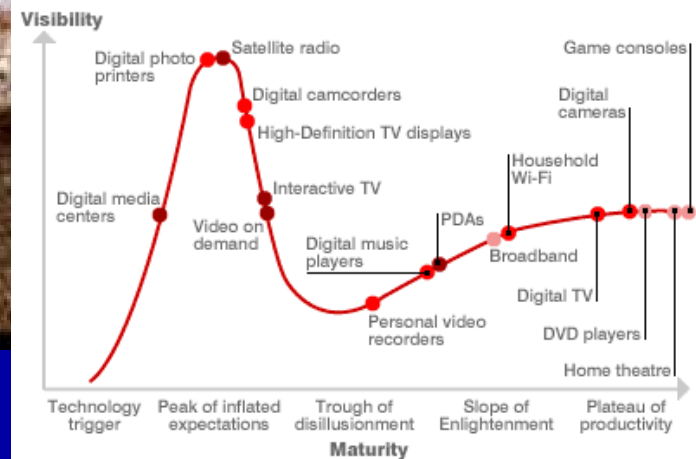
50% of our brain power is devoted to vision...



Visualization is a powerful tool.

HYPE CYCLE FOR CONSUMER TECHNOLOGIES, 2004

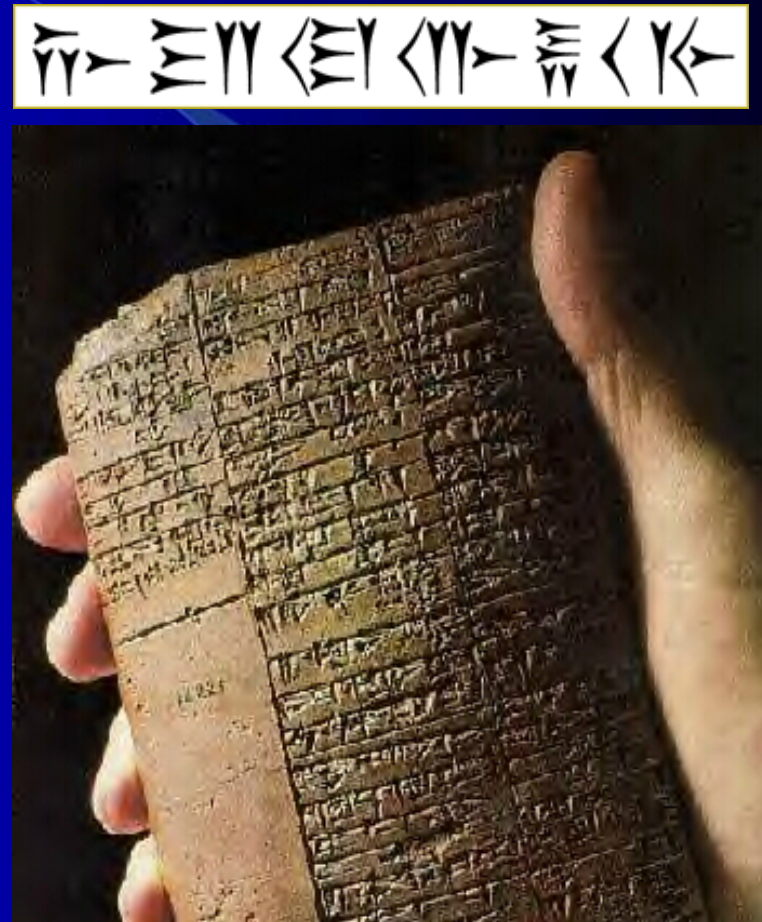
Key: Time to plateau (years): ● - 2 ● 2-5 ● 5-10 years



SOURCE: Gartner

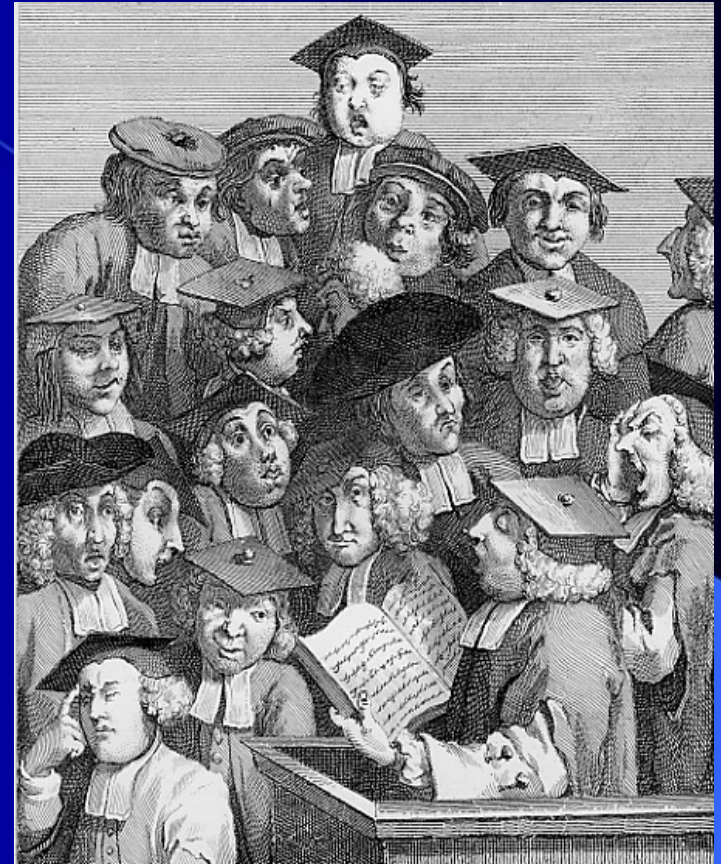
## Ed. Technology 3: Writing Tablets, Alphabets and Numbers

- Writing and reading was first developed in Mesopotamia (now Iraq) about 6,000 years ago.
- This new technology was first used by accountants to keep track of crops and inventories. Schools were started to teach accounting.
- Students learned by reading and memorizing.



## Ed. Technology 4: Lectures

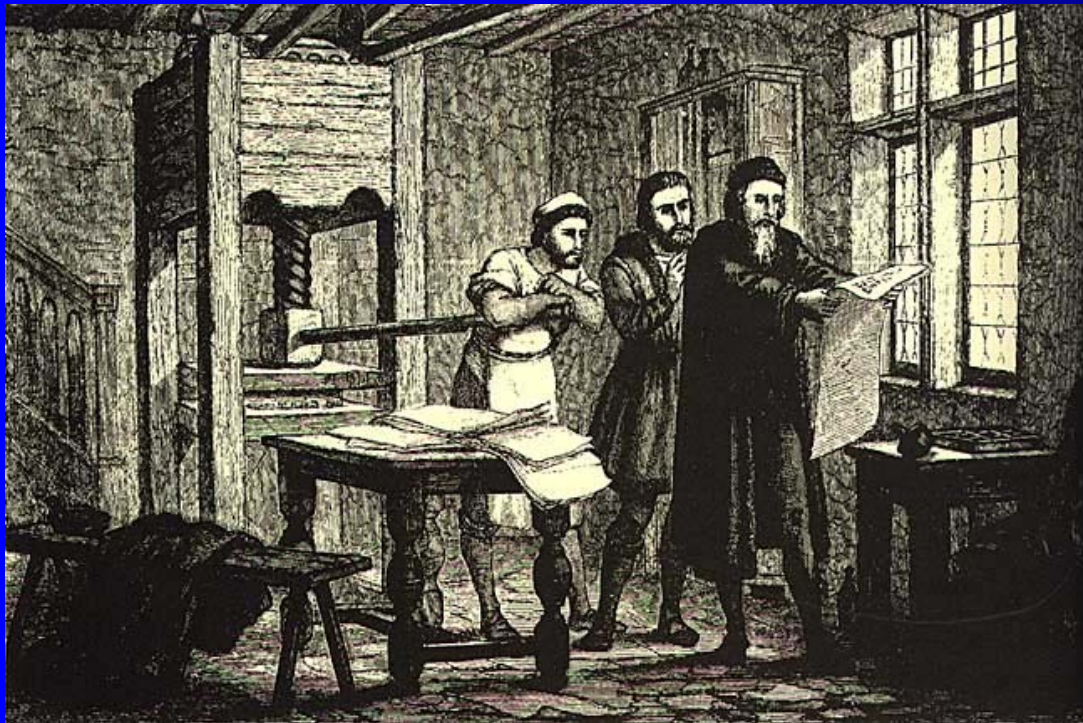
- Lecturing (meaning to read to someone) developed before the printing press, as a way to more efficiently copy books by hand. The lecturer would read, and the scribes would write down what he said.



- Later, lectures were used in universities to disseminate information to large groups.

## Ed. Technology 5: Printed Books

Printed books allowed a much wider distribution of knowledge, from a few literate clergy to a much wider group of literate readers.



The introduction of textbooks for teaching was a result of mass education in the late 19<sup>th</sup> century.

## Ed. Technology 6: Classroom Technologies

- Schools did not always have classrooms organized as we know them today. The modern classroom with rows, raising of hands, class periods and recess, were first introduced in Prussia (Germany) in the 1770s.



- With these reforms, the classroom became *industrialized*, similar to the organization of factories. Learning became *standardized*.

## Ed. Technology 7: Teaching with objects

In the early 19<sup>th</sup> century, teaching with actual “objects” became popular.

- In Switzerland, Pestalozzi brought rocks and shells into the classroom, and had “field trips”.
- In Germany, Froebel gave “gifts” to his pupils.
- In France, Oberlin produced “flash cards”.



- In France, Seguin developed special education materials.
- In Italy, Montessori had children play with special materials designed to teach.

## Ed. Technology 8: Audio Visual Technologies

Over the past 150 years, various audio-visual devices have been added to the classroom. These devices include:

- Cameras
- Filmstrip and slide projectors
- Movie projectors
- Overhead projectors
- Television

All these devices were heralded as “revolutionizing education”.



## Ed. Technology 9: Computer Technologies (“e-learning”)

1960s – first calculators in schools

1970s to 1980s – CBT on mainframe computers, e-mail

1970s – desktop computers

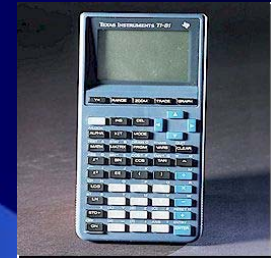
1980s – CD-ROMs

1992 – invention of the World Wide Web

1997 – learning management systems (LMS) and networked online courses

2001 – learning content management systems (LCMS), learning object repositories

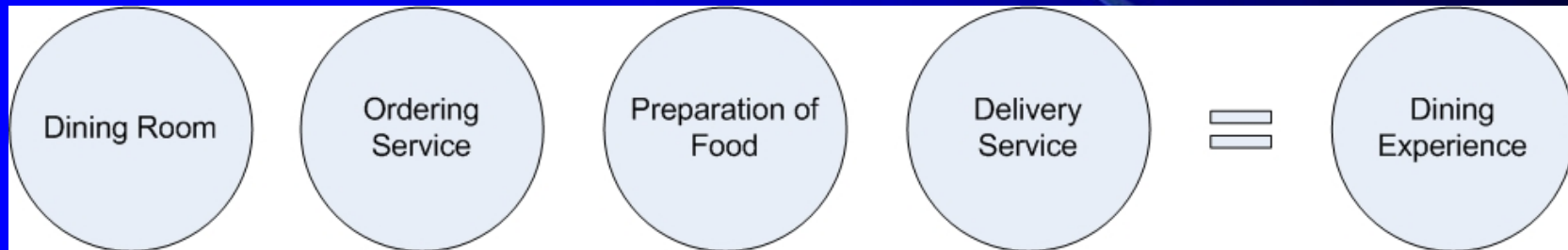
2004 – distributed e-learning content (over 40 formats)



## The impact of new educational technologies

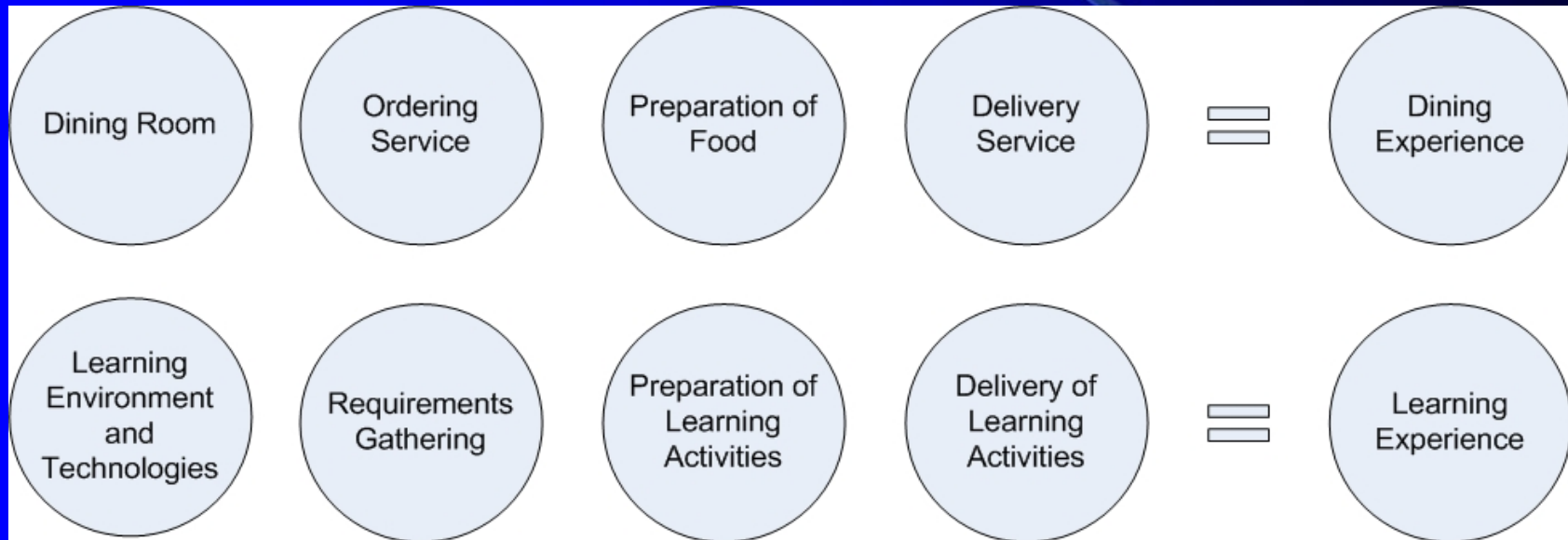
- e-Learning is the latest technology in a long line of “extensions” to our ability to teach
- All new technologies are introduced with extravagant claims
- All new technologies have detractors who worry that the new technologies will have a major negative impact
- All new technologies eventually become integrated with all the other teaching and learning technologies
- All new educational technologies produce innovations in teaching methods

## Understanding e-Learning: the restaurant analogy



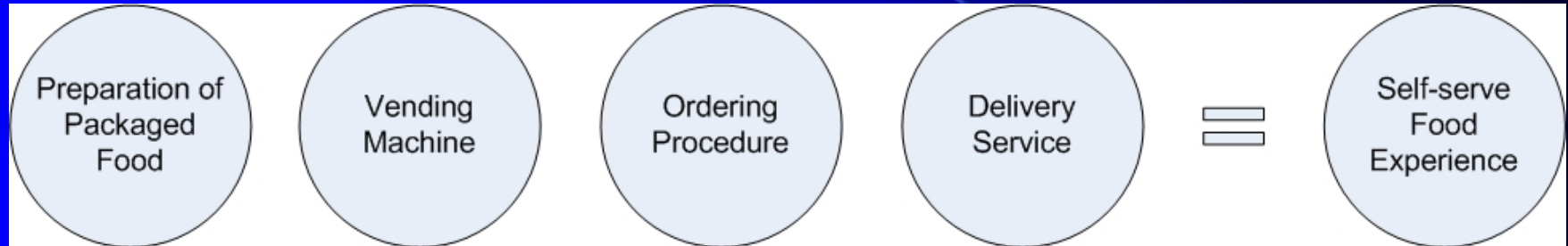
“Components of a Restaurant Experience” – V1

## Understanding e-Learning: the restaurant analogy



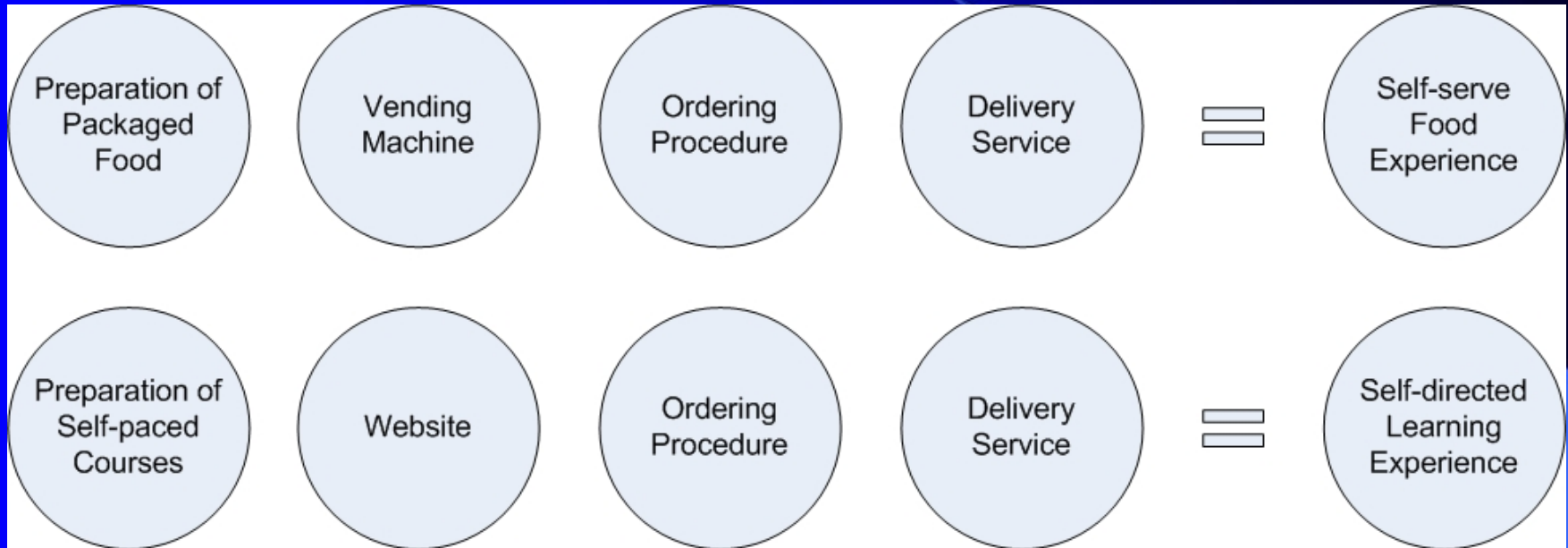
“Components of a Restaurant Experience” – V1

## Understanding e-Learning: the restaurant analogy



“Components of a Restaurant Experience” – V2

## Understanding e-Learning: the restaurant analogy



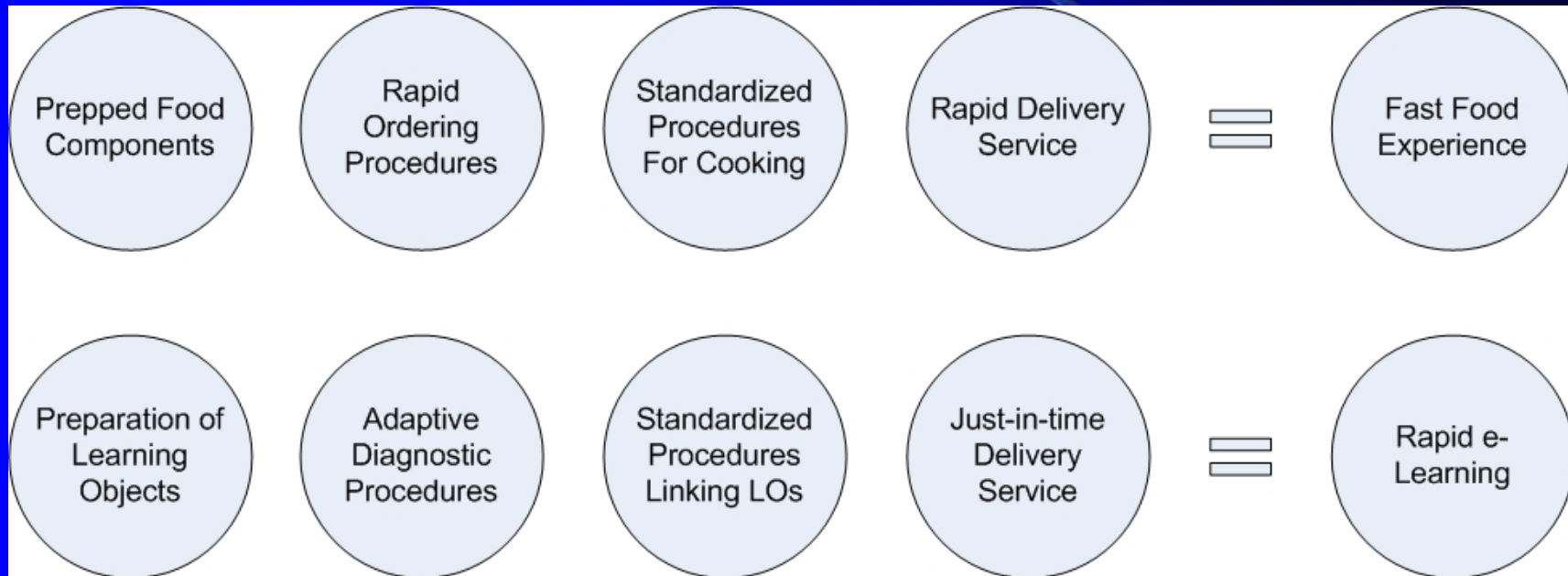
“Components of a Restaurant Experience” – V2

## Understanding e-Learning: the restaurant analogy



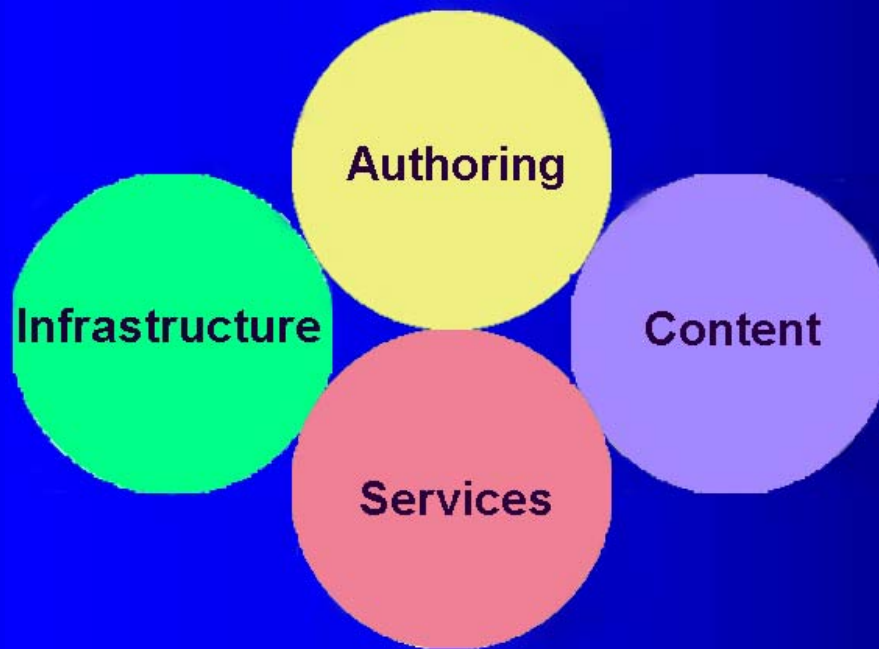
**“Components of a Restaurant Experience” – V3**

## Understanding e-Learning: the restaurant analogy



“Components of a Restaurant Experience” – V3

## Understanding e-Learning: the restaurant analogy



“Components of an e-Learning Experience”

## Three Directions for the future of e-Learning:

**REGULATED E-LEARNING** = made to look like school – courses, teachers, diplomas, and same relationships of power – “teacher centric” – “blended learning”

**RAPID E-LEARNING** = quick points or demonstrations of some standardized “chunk of information” – learning objects model – “technology centric”

**MULTI-CHANNEL LEARNING** = a huge variety of online experiences and information sources to explore, based on what the user wants to know – “learner centric”

## **Advantages of eLearning Technologies:**

- **High speed computation**
- **Interactivity – 12 levels**
- **Networking/Reach/Collaboration**
- **Digital representation/transformation**
- **Algorithms – repeatable procedures**
- **Storage and Retrieval**
- **Mass customization/Flexibility**
- **Availability - 24/7**
- **Simulation of complex processes**

## Perspectives on the Future

- Still at the beginning of a radical innovation curve
- New technologies bring new teaching methods
- New technologies often result in exaggerated claims
- New technologies result in worry about change

## Perspectives on the Future

- New generation of learners wants new technologies – under 35 year olds
- New understandings of learning suggest new approaches to teaching –
  - brain studies
  - embodiment and learning
  - metaphorical understandings
  - complexity theory

## Conclusions

- Computers have started to change the world – e-learning is only one part of that change
- e-Learning can increase individual freedom and strengthen community, or it can enslave us in an impersonal world of boredom and “virtual reality”, taking us away from living life to its fullest
- How it all turns out will depend on how well we get control of this new medium, and understand its impact.



*Dr. Gary Woodill*

**I hope that today's seminar  
will further your understanding  
of e-learning.**

**Thank you for your  
attention!**

**To comment on this presentation, go to my blog:**

**Learning2Change**

**<http://learning2change.blogspot.com>**