Educational Technology: A Visual Timeline

A.J. Kleinheksel

Before the Common Era

551 – 479 BCE **Confucius**
- Individualized instruction through discussion

500 – 400 BCE **The Elder Sophists**
- Mass instruction through lecture and group discussion

470 – 399 BCE **Socrates**
- Individual instruction through guided questioning

427 – 347 BCE **Plato**
- The human soul is already born with all knowledge

384 – 322 BCE **Aristotle**
- Sensory information is the basis for knowledge

The Dark Ages
476 – 800 CE

The Scholastic Method

1079 – 1142

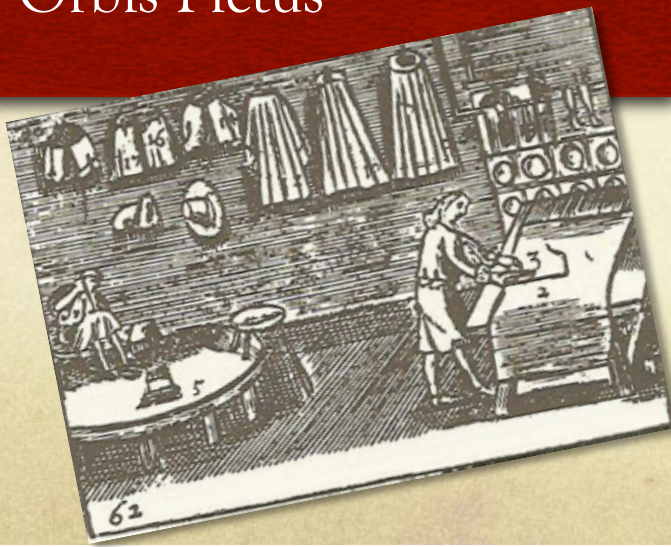- Pierre Abelard
  - "Sic et Non"

1180

- University of Paris
  - Formerly Notre Dame cathedral school

1125 – 1274

- St. Thomas Aquinas
  - Based the method of analysis and conclusions on Abelard's work

John Amos Comenius

- Universal Education
- Methodical Procedure
- "The Great Didactic"
- "Orbis Pictus"

1592 - 1670

The Teach Squad

- **Johann Heinrich Pestalozzi**
  - "Psychologized" instruction
  - Educational experiments

- **Johann Friedrich Herbart**
  - Systematic method transferred Pestalozzi's sensory impressions to an intellectual level of learning

- **Joseph Lancaster**
  - Low-cost, mass instruction by systematic teaching method

- **Friedrich Wilhelm Froebel**
  - Methodical kindergarten system to facilitate creativity, social participation, and motor expression

The Industrial Revolution

1801
- **First blackboard** used in U.S.
- Incorporated into math instruction at West Point Military Academy

1806 – 1853
- **Lancasterian plan** operating in New York City

1809
- **Pestalozzianism** introduced in the U.S.
- Pestalozzi's assistant, Joseph N. Neef brought to Philadelphia

1825 – 1835
- Philip von Fellenberg schools
- Based on Pestalozzianism, using **shop and farm materials** as objects of instruction

1826
- **"Manual of Instruction"**
- Based on Lancasterian plan, by William Russell

1831
- Society for Promoting Manual Labor in Literary Institutions founded
- Based on **von Fellenberg**'s schools

1845
- **Boston Survey**
- Wide-scale assessment of student achievement

1850 – 1900
- **Magic Lanterns and Stereopticons** used in some schools

The Civil War & The Gilded Age

1855
- **First American kindergarten**
- Established by Margarethe Meyer-Schurz

1860
- **"Psychologized" Instruction** in the U.S.
- First major attempt of object- teaching

1875
- New variation of **Pestalozzianism** introduced in Quincy, Massachusetts

1892
- **National Herbart Society** founded
- Responsible for writing the majority of educational texts for the next 20 years

1895
- **First comparative test** in American education
- Joseph Rice surveyed nearly 33,000 4th – 8th grade students

1896 – 1904
- **Chicago Laboratory School**
- Established by John Dewey to use the scientific method to experiment with, and practice, individualized learning

| 1905 | First school museum | St. Louis, Missouri |

| 1910 | First catalog of instructional films | Rochester, New York is first school system to use films regularly |

| 1914 – 1923 | Visual Instruction | Movement gains momentum |

| 1923 | Department of Visual Instruction founded | Later to become the AECT in 1970 |

| 1937 | "Visualizing the Curriculum" | Published by Hoban, Hoban, & Zissman |

Visual Instruction

Eight-Year Study 1933 – 1941

Ralph W. Tyler, considered to be the father of the behavioral objectives movement, headed the study of the relationship between secondary school requirements and postsecondary student success, in order to address the rigidity of secondary education curriculum

Ralph W. Tyler
1902 – 1994

World War II

1941
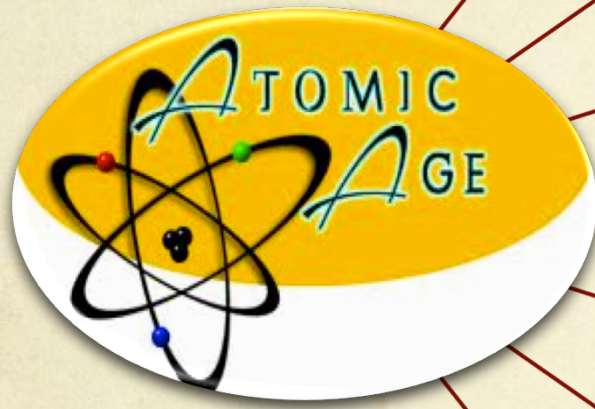- Division of Visual Aids for War Training established

1943 – 1945
- U.S. Army Air Force adopts audiovisual instruction
  - Over 400 training films & 600 film strips produced

1945
- Overhead projectors first used on a large scale by the U.S. Army

Atomic Age

1945 – 1946
- Media effectiveness and comparison studies conducted

1946
- Edgar Dale's Cone of Experience

1950 – 1960
- Computer-Assisted Instruction research conducted by IBM

1950 – 1970
- Ford Foundation contributes over $170 million to educational television

1952
- FCC allocates 242 television channels for educational purposes
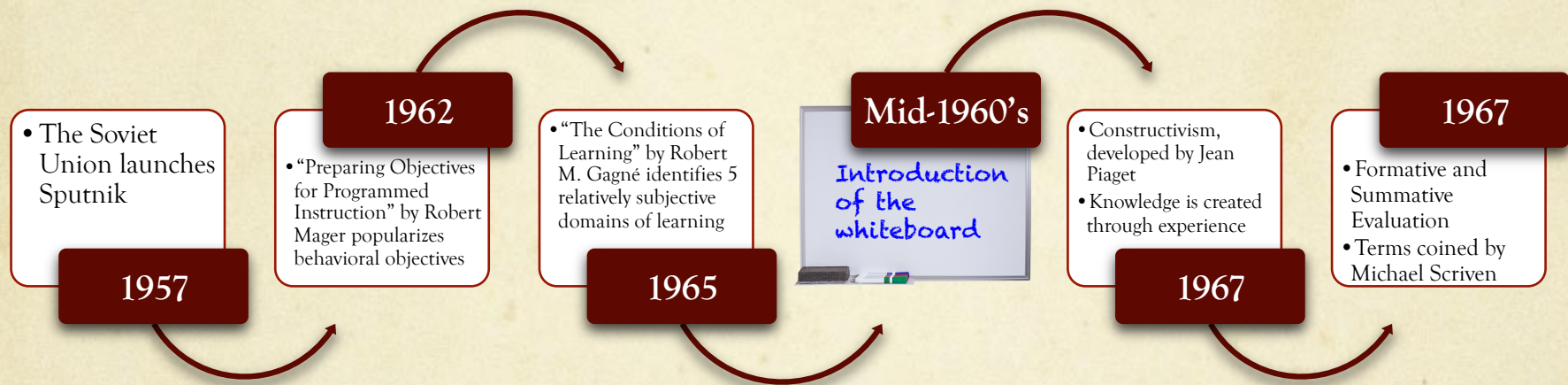
1954
- "The Science of Learning and the Art of Teaching" by B.F. Skinner begins the programmed instruction movement

1956
- "Taxonomy of Educational Objectives" by Bloom, et al., on behavioral objective assessment

The Space Race

1957
- The Soviet Union launches Sputnik

1962
- "Preparing Objectives for Programmed Instruction" by Robert Mager popularizes behavioral objectives

1965
- "The Conditions of Learning" by Robert M. Gagné identifies 5 relatively subjective domains of learning

Mid-1960's

Introduction of the whiteboard

1967
- Constructivism, developed by Jean Piaget
- Knowledge is created through experience

1967
- Formative and Summative Evaluation
- Terms coined by Michael Scriven

The Cold War

1970 – 1980

U.S. Military adopts instructional design model for the development of training materials

1980 – 1990

Cognitive Psychology principles applied to instructional design
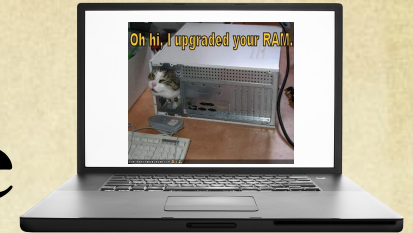
Developed by Bonner, Divesta & Rieber, Gagné, and Low

1983

Over 40% of elementary, and 75% of secondary schools are using computers

1991

Interactive whiteboards introduced by SMART Boards

The Information Age

- **1991** • Knowledge Management
- **1996** • Audience Response System used in classes at Rice University
- **1997** • Rapid Prototyping
- **1997** • Distance education offered by 78% of public four-year institutions
- **1998** • 1:6 computer to student ratio in schools
- **1998** • Google Inc.
- **1999** • Computers used in 14% of industry training
- **2000** • U.S. Army invests $600 million in distance education for soldiers

The Aughts

Resources

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