Business Education: changes and advances in technology, teaching and learning

Edgard Cornachione
(edgardo@usp.br)
Associate Professor
FEA/USP - Brazil
Summary

- Education
- Objectives and Needs
- Teaching, Learning, Theories, ...
- Learning Styles
- Adult Learner
- Business Education, Accountancy...
- Educational Environment
- Educational Technology
- CBT (BYU)
- Participant-Centered Learning (HBS)
- Reflections
But first...

• Welcome / Initiative

• Who am I?
  – Background
  – Research Interests

• Who are you?
  – Background
  – Goals
    • Business Motivation
    • Educational Motivation
Education

History
- Ancient
- Medieval

Modern

Murray (1978, p.3), reason & society in the Middle Ages:
“...if the root of man’s trouble is ignorance, then both politics and religion boil down to education. If on the other hand the will is defective, knowledge is not enough”.

Murray (1978, p.227) status of learning: “...most people who passed through any faculty of a medieval school, then, nourished some expectation of a better job afterwards”.

Do vs. Know vs. Be

Public vs. Private
## Way back...

<table>
<thead>
<tr>
<th>Century</th>
<th>Italy</th>
<th>France</th>
<th>Great Britain</th>
<th>Spain &amp; Portugal</th>
<th>Germany, Bohemia &amp; The Low Countries</th>
<th>Other Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>12th</td>
<td>Salerno, Bologna, Regio 1188</td>
<td>Paris, Montpellier</td>
<td>Oxford 1167?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13th</td>
<td>Vicenza, 1204 Arezzo, 1215 Padua, 1222 Vercelli, 1228 Siena, 1246 Naples, 1224 C Romana, 1244? Piacenza, 1248</td>
<td>Orleans, 1231? Angers Toulouse, 1230?</td>
<td>Cambridge, 1209 Palencia, 1212-4 Salamanca, 1230 Seville, 1254 Lisbon-Coimbra, 1290</td>
<td></td>
<td>Cracow (Poland), 1364 Pécs or Fünfkirchen (Hungary), 1367 Buda (Hungary), 1389</td>
<td></td>
</tr>
<tr>
<td>14th</td>
<td>Rome, 1303 Perugia, 1308 Treviso, 1318 Pisa, 1343 Florence, 1349 Pavia, 1361 Ferrara, 1391</td>
<td>Avignon, 1303 Cahors, 1332 Grenoble, 1339 Orange, 1365</td>
<td>Lerida, 1300 Perpignan, 1349 Huesca, 1359</td>
<td>Prague, 1347-8 Vienna, 1365 Erfurt, 1379 Heidelberg, 1385 Cologne, 1388</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15th</td>
<td>Turin, 1405 Catania, 1444</td>
<td>Aix, 1409 Dole, 1422 Poitiers, 1431 Caen, 1437 Bordeaux, 1441 Valence, 1459 Nantes, 1460 Bourges, 1464 Besançon, 1485</td>
<td>S. Andrews, 1413 Glasgow, 1451 Aberdeen, 1494 Barcelone. 1450 Saragossa, 1474 Palma (Majorca), 1483 Siguenza, 1489 Alcalá, 1499 Valencia, 1500 Wüzburg Leipzig, 1409 Rostok, 1419 Louvain, 1425 Trier, 1454 Greifswald, 1428 Freiburg-im Breisgau, 1455 Basel, 1459 Ingolstadt, 1459 Mainz, 1476 Tübingen, 1476</td>
<td>Poszony or Pressburg (Hungary), 1465 Upsala (Sweden), 1477 Copenhagen (Denmark), 1478</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A strong relation is found between the universities of the Middle Ages and the curriculum known as the **seven classic liberal arts**: *(Thorndike 1944; Haskins 2002)*

*trivium* (grammar, rhetoric, and logic/dialectic)  
*quadrivium* (arithmetic, geometry, music and astronomy):

“The great ordeal of the day was the master’s *quiz* on Latin grammar, when every one was questioned in turn (auditio circuli).”  
(Haskins 2002, p.99)
3. They attend classes but make no effort to learn anything…;

4. They frequently learn what they would better ignore…;

7. They have among themselves evil and disgraceful societies, associating together for ill…;

from an officer of the Curia in Avignon
(Thorndike 1944, p.173-4)
9. On feast days they do not go to church to hear divine service and sermons and above all the full mass which all Christians are supposed to attend...
Or, if they go to church, it is not for worship but to see the girls or swap stories;

12. The expense money which they have from their parents or churches they spend in taverns, conviviality, games, and other superfluities, and so they return home empty, without knowledge, conscience, or money...

from an officer of the Curia in Avignon (Thorndike 1944, p.173-4)
• Brainstorming

– WHY ?
Study !?

- Relationship
- Power
- Understand
- Solving problems
- Better behavior
- Personal growth
- Prepare for the future
- Compete
- Make money
- Approval from others
- Social status
Brazil

Comparison

#s

Enrolled  Spaces  Prospective

Years

Source: Based on data from INEP / MEC

Other Countries?!
### BRAZIL - Higher Education

<table>
<thead>
<tr>
<th>Year</th>
<th>Faculty Members (1)</th>
<th>Enrolled Students (2)</th>
<th>Openings (3)</th>
<th>Prospective Students (4)</th>
<th>Ratio (4)/(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>54,389</td>
<td>425,478</td>
<td>145,000</td>
<td>328,931</td>
<td>2.3</td>
</tr>
<tr>
<td>1980</td>
<td>109,788</td>
<td>1,377,286</td>
<td>404,814</td>
<td>1,803,567</td>
<td>4.5</td>
</tr>
<tr>
<td>1990</td>
<td>131,641</td>
<td>1,540,080</td>
<td>502,784</td>
<td>1,905,498</td>
<td>3.8</td>
</tr>
<tr>
<td>1999</td>
<td>173,836</td>
<td>2,377,715</td>
<td>904,634</td>
<td>3,354,790</td>
<td>3.7</td>
</tr>
<tr>
<td>2000</td>
<td>197,712</td>
<td>2,694,245</td>
<td>1,216,287</td>
<td>4,039,910</td>
<td>3.3</td>
</tr>
<tr>
<td>2001</td>
<td>219,947</td>
<td>3,030,754</td>
<td>1,408,492</td>
<td>4,260,261</td>
<td>3.0</td>
</tr>
</tbody>
</table>

*Table 1.1: Brazilian Education Historical Overview
Source: INEP/MEC*
# BRAZIL - Higher Education

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions</td>
<td>183</td>
<td>1,208</td>
<td>1,391</td>
</tr>
<tr>
<td>Programs</td>
<td>4,401</td>
<td>7,754</td>
<td>12,155</td>
</tr>
<tr>
<td>Faculty</td>
<td>90,950</td>
<td>128,997</td>
<td>219,947</td>
</tr>
<tr>
<td>Full-time</td>
<td>68,793</td>
<td>21,838</td>
<td>90,631</td>
</tr>
<tr>
<td>Master's</td>
<td>27,446</td>
<td>45,532</td>
<td>72,978</td>
</tr>
<tr>
<td>Doctor's</td>
<td>30,855</td>
<td>15,278</td>
<td>46,133</td>
</tr>
</tbody>
</table>

*Table 1.2: Brazilian Faculty Snapshot*

*Source: INEP/MEC*
... 40 years (Brazil)

**Enrolled Students**

- \( y = 58866x + 12855 \)
- \( R^2 = 0.9175 \)

**Prospective Students**

- \( y = 95640x + 240079 \)
- \( R^2 = 0.8691 \)

**Spaces**

- \( y = 23502x + 125657 \)
- \( R^2 = 0.7041 \)

**Increasing Rates:**

\( \beta_1 = 58.866 \text{ students/year} \)
\( \beta_2 = 23.502 \text{ students/year} \)
\( \beta_3 = 95.640 \text{ students/year} \)
40,744 doctorate degrees (2000/2001)

Source: NORC 2001

<table>
<thead>
<tr>
<th>Institution</th>
<th>Control</th>
<th>Volumes</th>
<th>Serials</th>
<th>Microforms</th>
<th>Circulation</th>
<th>Full-Time Students</th>
<th>Full-Time Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>U.S., Private</td>
<td>14,857,415</td>
<td>106,689</td>
<td>9,185,620</td>
<td>1,989,796</td>
<td>18,884</td>
<td>1,956</td>
</tr>
<tr>
<td>Yale</td>
<td>U.S., Private</td>
<td>10,905,851</td>
<td>69,664</td>
<td>6,452,750</td>
<td>901,841</td>
<td>10,937</td>
<td>1,578</td>
</tr>
<tr>
<td>UIUC</td>
<td>U.S., Public</td>
<td>9,861,988</td>
<td>90,707</td>
<td>9,069,875</td>
<td>1,052,627</td>
<td>34,688</td>
<td>1,830</td>
</tr>
</tbody>
</table>

Table 1.4: ARL 2001-2002 Ranking of Research Libraries
Source: ARL 2002
Issues...

- Education
  - Brazil
  - Other Countries

- Accountancy
  - Undergraduate
  - Graduate (certificate & M / D)

- Profession
  - Job Market
  - Credentialism
  - Competency vs. Seat-time
Parameters of Education

• **Individuals – Society**

– Dewey (1939, p.102), the Platonic educational philosophy could be of some help considering this point: “(...) a society is stably organized when each individual is doing that for which he has aptitude by nature in such a way as to be useful to others (or to contribute to the whole to which he belongs); and that it is the business of education to discover these aptitudes and progressively to train them for social use.”
• **Individuals – Goals – Society**

  – Maslow (1954, 67): “There is now sufficient anthropological evidence to indicate that the fundamental or ultimate desires of all human beings do not differ nearly as much as do their conscious everyday desires (...) Apparently ends in themselves are far more universal than the roads taken to achieve those ends, for these roads are determined locally in the specific culture.”
• Individual & Group Needs
  
  – To be part of a society, similar goals

  – Formal Education & Credencialism: Halinnan (editor 1987, 162), “…education is a crucial means to success in all contemporary societies and ...educational status works to this end even with measured socialization outcomes held constant”.

  – Education Growth - Scott (1914, 73): “a study of history of education reveals the fact that educational movements and educational systems are ... the outgrowth of social and economic conditions”.
Human Needs

Maslow’s Hierarchy of Needs

Physiological Needs
Safety Needs
Belongingness / Love Needs
Esteem Needs
Need to Know / Understand
Aesthetics Needs
Self-actualization
Transcendence

Source: Based on Maslow (1954; 1968; 1971; 1998)
Dewey (1939, 226) stated that:

"Unconsciously it assumes that these ideals are unrealizable; it assumes that in the future, as in the past, getting a livelihood, ‘making a living’, must signify for most men and women doing things which are not significant, freely chosen, and ennobling to those who do them; doing things which serve ends unrecognized by those engaged in them, carried on under the direction of others for the sake of pecuniary reward. For preparation of large numbers for a life of this sort, and only for this purpose, are mechanical efficiency in reading, writing, spelling, and figuring, together with attainment of a certain amount of muscular dexterity ‘essentials’."
“Drawing upon the writings of Maslow, McGregor presented his Theory X – Theory Y dichotomy...”

Theory X – people are inherently lazy, they dislike work

Theory Y – work can be enjoyable, people will work hard if there is an opportunity to achieve personal goals at the same time

Narayanan, V. K. & Nath, R.

Organization Theory: A strategic approach
Bur Ridge/IL: Richard D. Irwin, 1993, p.403
• Brainstorming
### Learning in words

<table>
<thead>
<tr>
<th>POSITIVE</th>
<th>NEGATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wisdom</td>
<td>Waste of time</td>
</tr>
<tr>
<td>Progress</td>
<td>Can be destructive</td>
</tr>
<tr>
<td>Will</td>
<td>Tiring</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Hard</td>
</tr>
<tr>
<td>Curiosity</td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td></td>
</tr>
<tr>
<td>Wise</td>
<td></td>
</tr>
<tr>
<td>Change in behavior</td>
<td></td>
</tr>
</tbody>
</table>
Learning

• **Theories of Learning**
  – Internal Approach
  – External Approach

• **Learning**
  – Hilgard (1956, 3): “...the process by which an activity originates or is changed through reacting to an encountered situation, provided that the characteristics of the change in activity cannot be explained on the basis of native response tendencies, maturation, or temporary states of the organism (e.g., fatigue, drugs, etc.)”.
Learning (cont.)

• **Learning**
  
  – Gerring & Zimbardo (2002, 181): “*a process that results in a relatively consistent change in behavior or behavior potential and is based on experience.*”
  
  – Malone (1990, 1): “*learning determines to a great extent what we will become in life, who we will consider friends, where we will call home, what we will consider worth doing, and what we will call right and wrong.*”
• **Learning**
  
  – Hergenhahn & Olson (2001, 6-7): “*learning is a relatively permanent change in behavior or in behavioral potentiality that results from experience and cannot be attributed to temporary body states such as those induced by illness, fatigue, or drugs.*”
<table>
<thead>
<tr>
<th><strong>Approach</strong></th>
<th><strong>Meaning</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationalism</td>
<td>mind is actively involved in the attainment of knowledge: thinking, reasoning, or deducting (innate knowledge)</td>
</tr>
<tr>
<td>Nativism</td>
<td>Knowledge, trait, or attitude is innate, or inherited</td>
</tr>
<tr>
<td>Empiricism</td>
<td>Importance of sensory experience as the basis of knowledge (no innate knowledge)</td>
</tr>
<tr>
<td>Associationism</td>
<td>Experience can be reduced to elements such as ideas and sensations; recall of one object tends to recall things similar to that object (similarity); opposite things (contrast); or things originally experienced with that object (contiguity)</td>
</tr>
</tbody>
</table>

*Source: Malone (1990, 7); Hergenhahn & Olson (2001, 27-41), adapted*
<table>
<thead>
<tr>
<th>Theories of Learning</th>
<th>Scholars</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviorism</td>
<td>Thorndike, Pavlov, Watson, Guthrie, Hull, Tollman, Skinner</td>
<td>Change in behavior</td>
</tr>
<tr>
<td>Cognitivism</td>
<td>Wertheimer, Koffka, Kohler, Lewin, Piaget, Ausubel, Bruner, Gagne</td>
<td>Internal mental process</td>
</tr>
<tr>
<td>Humanism</td>
<td>Maslow, Rogers</td>
<td>Personal act to fulfill potential</td>
</tr>
<tr>
<td>Social Learning</td>
<td>Bandura, Rotter</td>
<td>Interaction with and observation of others in a social context</td>
</tr>
<tr>
<td>Constructivism</td>
<td>Candy, Dewey, Lave, Piaget, Rogoff, von Glaserfeld, Vygotsky</td>
<td>Construction of meaning from experience</td>
</tr>
</tbody>
</table>

Source: Merriam & Caffarella (1999, 264), adapted
Theories of Learning: Thinkers and Approaches
Theories of Learning (cont.)

http://www.indiana.edu/~intell/map.html

Dr. Jonathan Plucker (Indiana University)
### Educational Objectives

<table>
<thead>
<tr>
<th>Bloom’s Taxonomy</th>
<th>Gagné’s Taxonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive Domain</strong></td>
<td><strong>Verbal Information</strong></td>
</tr>
<tr>
<td>- Knowledge</td>
<td>Intellectual Skill</td>
</tr>
<tr>
<td>- Comprehension</td>
<td>- Discrimination</td>
</tr>
<tr>
<td>- Application</td>
<td>- Concrete Concept</td>
</tr>
<tr>
<td>- Analysis</td>
<td>- Defined Concept</td>
</tr>
<tr>
<td>- Synthesis</td>
<td>- Rule</td>
</tr>
<tr>
<td>- Evaluation</td>
<td>- Higher-Order Rule</td>
</tr>
<tr>
<td></td>
<td>Cognitive Strategy</td>
</tr>
<tr>
<td><strong>Affective Domain</strong></td>
<td><strong>Attitude</strong></td>
</tr>
<tr>
<td>- Receiving</td>
<td></td>
</tr>
<tr>
<td>- Responding</td>
<td></td>
</tr>
<tr>
<td>- Valuing</td>
<td></td>
</tr>
<tr>
<td>- Organization</td>
<td></td>
</tr>
<tr>
<td>- Characterization by a value</td>
<td></td>
</tr>
<tr>
<td><strong>Psychomotor Domain</strong></td>
<td><strong>Motor Skill</strong></td>
</tr>
</tbody>
</table>

*Bloom’s vs. Gagné’s Taxonomies  
Source: Based on Briggs (1977, 123-9)*
Educational Objectives (cont.)

BLOOM (original)

Remember
1 Recognizing
2 Recalling

Understand
3 Interpreting
4 Exemplifying
5 Classifying
6 Summarizing
7 Inferring
8 Comparing
9 Explaining

Apply
10 Executing
11 Implementing

Analyze
12 Differentiating
13 Organizing
14 Attributing

Evaluate
15 Checking
16 Critiquing

Create
17 Generating
18 Planning
19 Producing

Revised Bloom’s Taxonomy – Cognitive Domain
Source: Anderson & Krathwohl (editors) 2001, p.276-7, adapted.
### Educational Objectives (cont.)

<table>
<thead>
<tr>
<th>Focusing Skills</th>
<th>Analyzing Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Defining problems</td>
<td>11 Identifying attributes and components</td>
</tr>
<tr>
<td>2 Setting goals</td>
<td>12 Identifying relationships and patterns</td>
</tr>
<tr>
<td>Information Gathering Skills</td>
<td>13 Identifying main ideas</td>
</tr>
<tr>
<td>3 Observing</td>
<td>14 Identifying errors</td>
</tr>
<tr>
<td>4 Formulating questions</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remembering Skills</th>
<th>Generating Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Encoding</td>
<td>15 Inferring</td>
</tr>
<tr>
<td>6 Recalling</td>
<td>16 Predicting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organizing Skills</th>
<th>Integrating Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Comparing</td>
<td>18 Summarizing</td>
</tr>
<tr>
<td>8 Classifying</td>
<td>19 Restructuring</td>
</tr>
<tr>
<td>9 Ordering</td>
<td></td>
</tr>
<tr>
<td>10 Representing</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Marzano (1988)
### Revised Bloom’s Taxonomy – Cognitive Domain

**Source:** Anderson & Krathwohl (editors) 2001, p.28, adapted.

<table>
<thead>
<tr>
<th></th>
<th>Remember</th>
<th>Understand</th>
<th>Apply</th>
<th>Analyze</th>
<th>Evaluate</th>
<th>Create</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factual Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Conceptual Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Procedural Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Meta-Cognitive Knowledge</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
• **Learning Styles**
  – McKeachie (2002, p.140)…would be helpful if “...considered as tools to *illustrate differences*”.

• **Cognitive Styles**
    “...*consistencies in information processing that develop in concert with underlying personality traits*”.
Learning Styles - Theories

A- Instructional Preference
  - Hill
  - Canfield

B- Social Interaction
  - Mann
  - Grasha-Reichmann
  - Fuhrmann-Jacobs
  - Eison’s Learning & Grading (LOGO)

C- Information-Processing
  - Pask
  - Siegel & Siegel
  - Schmeck
  - Kolb
  - Gegorc

D- Personality
  - Witkin
  - Myers-Briggs MBTI
  - Kagan
  - Omnibus Personality Inventory
  - Holland

Learning Styles Instruments
Source: Based on Claxton & Murrel 1987 adapted.

Dunn & Dunn / Gardner / LASSI / MSLQ
Learning Styles - Aspects

- Situational Needs Assessment
- Evaluation of Theories
- Conscious Selection
- Subjects Exposure
- Analyzing the Results
- Promoting Actions
- Accompanying
Kolb’s Theory

Concrete Experience

1. Concrete Experience
2. Reflective Observation
3. Abstract Conceptualization
4. Active Experimentation

Accommodators

Divergers

Convergers

Assimilators

Kolb’s Cycle
Examples of Measuring and Identifying LS Instruments

North Carolina State University (USA):
http://www.ncsu.edu/felder-public/ILSdir/ilsweb.html
Fleming (New Zealand) & Bonwell (USA):
Support 4 Learning (UK):
http://www.support4learning.org.uk/education/lstyles.htm
University of Georgia (USA):
http://it.coe.uga.edu/~lriebert/edit6170/learning_styles.html
University of North Carolina at Wilmington (USA):
http://www.uncwil.edu/gc/online_tutor/learnst.html
Public Service Commission of Canada (CANADA):
• Canfield (1980) – Educational Sciences

• Influences from
  • Maslow (needs)
  • McClelland (motivation)

• LS & Performance
  *(predict students that would not do well)*
• **Communication Channels**
  – Visual-Auditory-Kinesthetic model

• **Core Principles of Andragogy**
  – (Knowles, Swanson & Holton 1988, p.20)
    • 1- learner’s need to know (why, what and how);
    • 2- self-concept of the learner (autonomous, self-directing);
    • 3- prior experience of the learner (resource, mental models);
    • 4- readiness to learn (life related, developmental task);
    • 5- orientation to learning (problem centered, contextual);
    • 6- motivation to learn (intrinsic value, personal payoff).
• Andragogy Model
  – Swanson & Holton (2001, 162), explore the concept of andragogy, and present the *Andragogy in Practice Model*, involving three main dimensions:

<table>
<thead>
<tr>
<th>Goals and purposes for learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>societal growth</td>
</tr>
<tr>
<td>institutional growth</td>
</tr>
<tr>
<td>individual growth</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual and situational differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>subject-matter differences</td>
</tr>
<tr>
<td>individual learner differences</td>
</tr>
<tr>
<td>situational differences</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Andragogy: core adult learning principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>learner’s need to know</td>
</tr>
<tr>
<td>self-concept of the learner</td>
</tr>
<tr>
<td>prior experience of the learner</td>
</tr>
<tr>
<td>readiness to learn</td>
</tr>
<tr>
<td>orientation to learning</td>
</tr>
<tr>
<td>motivation to learn</td>
</tr>
</tbody>
</table>

*Source:* Swanson & Holton (2001, 162), adapted
Experiences & Influences

### Adult Learner (cont.)

<table>
<thead>
<tr>
<th>Categories</th>
<th>Formats for Learning</th>
</tr>
</thead>
</table>
| Individual Learning   | - Apprenticeship and Internship  
                          - Correspondence Study  
                          - Counseling  
                          - Directed Study or Tutorial  
                          - Programmed Instruction  
                          - Supervision |
| Group Learning        | - Action Projects  
                          - Clinics, Institutes & Workshops  
                          - Clubs and Organized Groups  
                          - Conferences & Conventions  
                          - Courses  
                          - Demonstrations  
                          - Exhibits, Fairs & Festivals  
                          - Large Meetings  
                          - Trips & Tours |
| Community Learning    | - Community Development |

Source: Knowles (1970)
Students’ Goals (Attainment)

**Educational Success**
- Educational aspirations and progression toward goals: degree aspirations, persistence, time-to-degree, educational attainment, and degree completion

**Success in Transitions**
- Flexibility to move successfully between educational and/or occupational settings – or to perform simultaneously

**Economic Impacts**
- Financial and related benefits as income, ROI, standard of living, ability to move geographically in order to obtain more remunerative employment

**Quality of Life**
- Non-economic outcomes as life satisfaction, health, marriage, child nurturance behavior, consumer behaviors, savings/investment, leisure time

*Source: NPEC (1997, #97991)*
Ennis-Weir CTET & MSLQ

• Ennis-Weir (Critical Thinking Essay Test)
  
  University of Illinois at Urbana-Champaign

• Motivated Strategies for Learning Questionnaire

  University of Michigan