Association of Delaware Valley Independent Schools

Technology Goldmine

Drivers Wanted:

The Education and Economics of

Great 21st Century Schools

Jay Weinbach
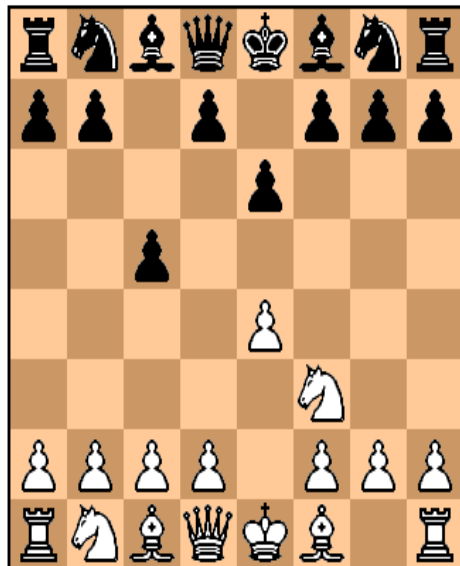Principal Partner
Best Schools Consulting Group

Best SCHOOLS CONSULTING GROUP

Education at the speed of each student

What Is Strategy

Sicilian (B40)
1 e4 c5 2 Nf3 e6

Number of games in database: **7081**
Years covered: **1843 to 2014**
Overall record:
  White wins **36.3%**
  Black wins **31.4%**
  Draws **32.3%**

Popularity graph, by decade

Sicilian (B40)   chessgames.com
9,052 ▼-3,172
POPULARITY (GAMES PER 1000) FROM 1843 TO 2014
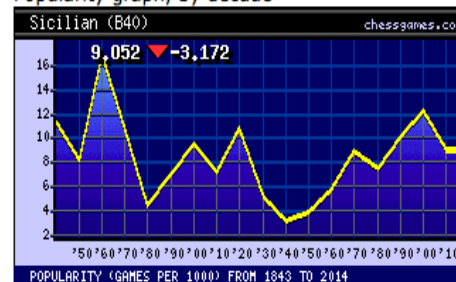
Explore this opening | **Search for sacrifices** in this opening.

PRACTITIONERS

With the White Pieces		With the Black Pieces	
Evgeni Vasiukov	44 games	Sergei Rublevsky	33 games
Tomas Oral	40 games	Kevin Spraggett	32 games
Sergei Rublevsky	36 games	Vadim Malakhatko	31 games

NOTABLE GAMES [what is this?]

White Wins	Black Wins
Kasparov vs G West, 1977	Prins vs L Day, 1968
Waitzkin vs E Frumkin, 1987	Ljubojevic vs Kasparov, 1983
Fischer vs J Sherwin, 1957	Reggio vs Mieses, 1903

Best
SCHOOLS
CONSULTING GROUP
Education at the speed of each student

Strategy vs. Tactics

White to move
30,370 games · 1843-2014

move	games	white wins - draws - black wins %		
3. d4	22,868	35.6%	33.4%	31%
3. Nc3	2,957	37.4%	33.4%	29.2%
3. c3	2,013	32.5%	37.7%	29.8%
3. d3	1,981	38.1%	30.2%	31.8%
3. b3	805	34.8%	31.8%	33.4%
3. c4	620	33.7%	35%	31.3%
3. g3	346	36.1%	37.3%	26.6%
3. Qe2	274	41.2%	28.8%	29.9%
3. Be2	76	31.6%	31.6%	36.8%
3. b4	45	33.3%	26.7%	40%
3. Bc4	33			84.8%
3. Bb5	7	14.3		85.7%
3. e5	6		33.3%	66.7%
3. Bd3	6	33.3%	33.3%	33.3%
3. a3	3		33.3%	66.7%
3. Nd4	2	50%		50%

This Is A Strategy Session

In order to develop a winning strategy, we must know **our purpose**

Best
SCHOOLS
CONSULTING GROUP
Education at the speed of each student

Our Purpose:
Provide the best education our institution can sustain

- Not only sustainable, because we are not exclusively a business

- Not only the best education, because no school means no education

Best
SCHOOLS
CONSULTING GROUP
Education at the speed of each student

What Drives
Our Strategic Decisions?

- Quality of Education

- Sustainability of Institution

Two Drivers

- Quality of Education
- Sustainability of Institution

A winning strategy must balance these drivers

This Moment is an unprecedented convergence of educational and economic drivers

Best SCHOOLS CONSULTING GROUP

Education at the speed of each student

Where Education Is and Is Not Going

- The Principal's Dilemma – Teaching or Tech?

- Alison King – The transition from Sage on the Stage to Guide by the Side

- Why this presentation is Sage on the Stage

- Our greatest but most essential Professional Development challenge ever … but it can be less work intensive than differentiation

Best
SCHOOLS
CONSULTING GROUP
Education at the speed of each student

The Most Affordable – 100% Machine Learning

- Pros:
  - No brick-and-mortar costs
  - Little or no non-academic costs
  - 24/7/365 access
  - No constraints on course offerings
- Cons:
  - Favors a later developmental stage
  - Education must be much more than academic achievement
  - Limited human connection and collaboration
  - Infrastructure costs
- The Jury Is Out On:
  - Retention
  - What % of students learn effectively this way

Best
SCHOOLS
CONSULTING GROUP
Education at the speed of each student

The Most Prevalent Model – Sages Run the Factory

The Most Prevalent Model – Sages Run the Factory

- Pros:
  - Scale
  - With adequate units and funding, support services and enrichments are available
  - School culture can enhance the individual student's experience
- Cons:
  - Differentiation is very resource intensive
  - At lower grade levels the need for a low student-teacher ratio increases costs
  - At higher grade levels specialized homogeneous classes (i.e. AP Science) increase costs

Best SCHOOLS CONSULTING GROUP
Education at the speed of each student

How Do Students Learn Best?

The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring

Benjamin S. Bloom

Educational Researcher, Vol. 13, No. 6. (Jun. - Jul., 1984), pp. 4-16.

Stable URL:
http://links.jstor.org/sici?sici=0013-189X%28198406%2F07%2913%3A6%3C4%3AT2SPTS%3E2.0.CO%3B2-3

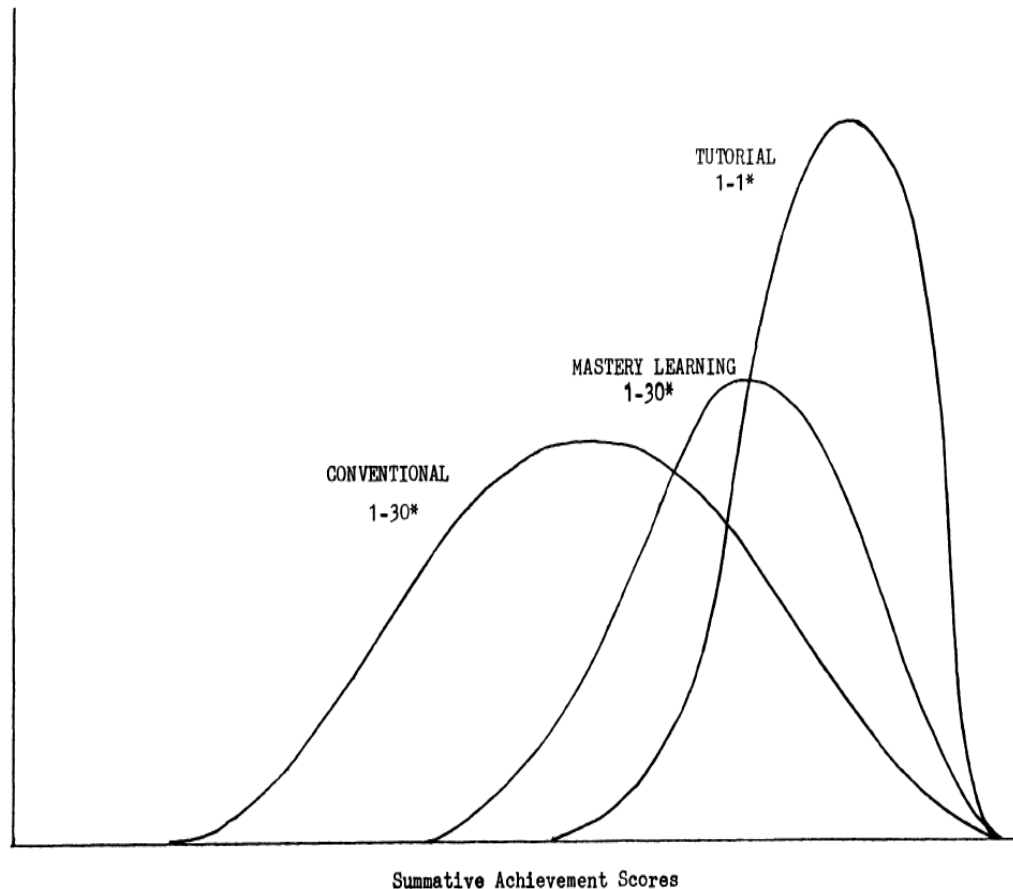*Educational Researcher* is currently published by American Educational Research Association.

How Do Students Learn Best? Bloom's Two Sigma Problem

FIGURE 1. *Achievement distribution for students under conventional, mastery learning, and tutorial instruction.*

Summative Achievement Scores

*Teacher-student ratio

Education at the speed of each student

How Do Students Learn Best? Bloom's Two Sigma Problem

TABLE I

Effect of selected alterable variables on student achievement (see Appendix)

		Effect size	Percentile equivalent
D[a]	Tutorial instruction	2.00	98
D	Reinforcement	1.20	
A	Feedback-corrective (ML)	1.00	84
D	Cues and explanations	1.00	
(A)D	Student classroom participation	1.00	
A	Student time on task	1.00[b]	
A	Improved reading/study skills	1.00	
C	Cooperative learning	.80	79
D	Homework (graded)	.80	
D	Classroom morale	.60	73
A	Initial cognitive prerequisites	.60	
C	Home environment intervention	.50[b]	69
D	Peer and cross-age remedial tutoring	.40	66
D	Homework (assigned)	.30	62
D	Higher order questions	.30	
(D)B	New science & math curricula	.30[b]	
D	Teacher expectancy	.30	
C	Peer group influence	.20	58
B	Advance organizers	.20	
	Socio-economic status (for contrast)	.25	60

Note. This table was adapted from Walberg (1984) by Bloom.
[a]*Object of change process*—A-Learner; B-Instructional Material; C-Home environment or peer group; D-Teacher.
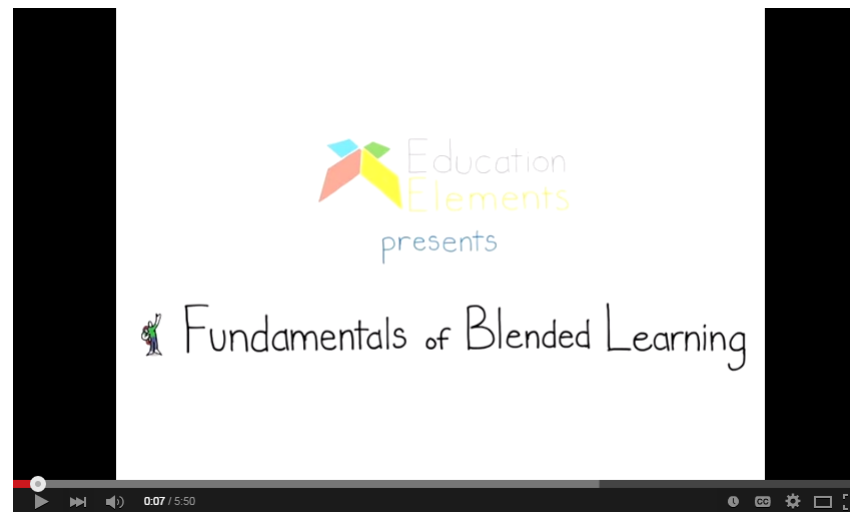
Best SCHOOLS CONSULTING GROUP
Education at the speed of each student

Bloom's Taxonomy
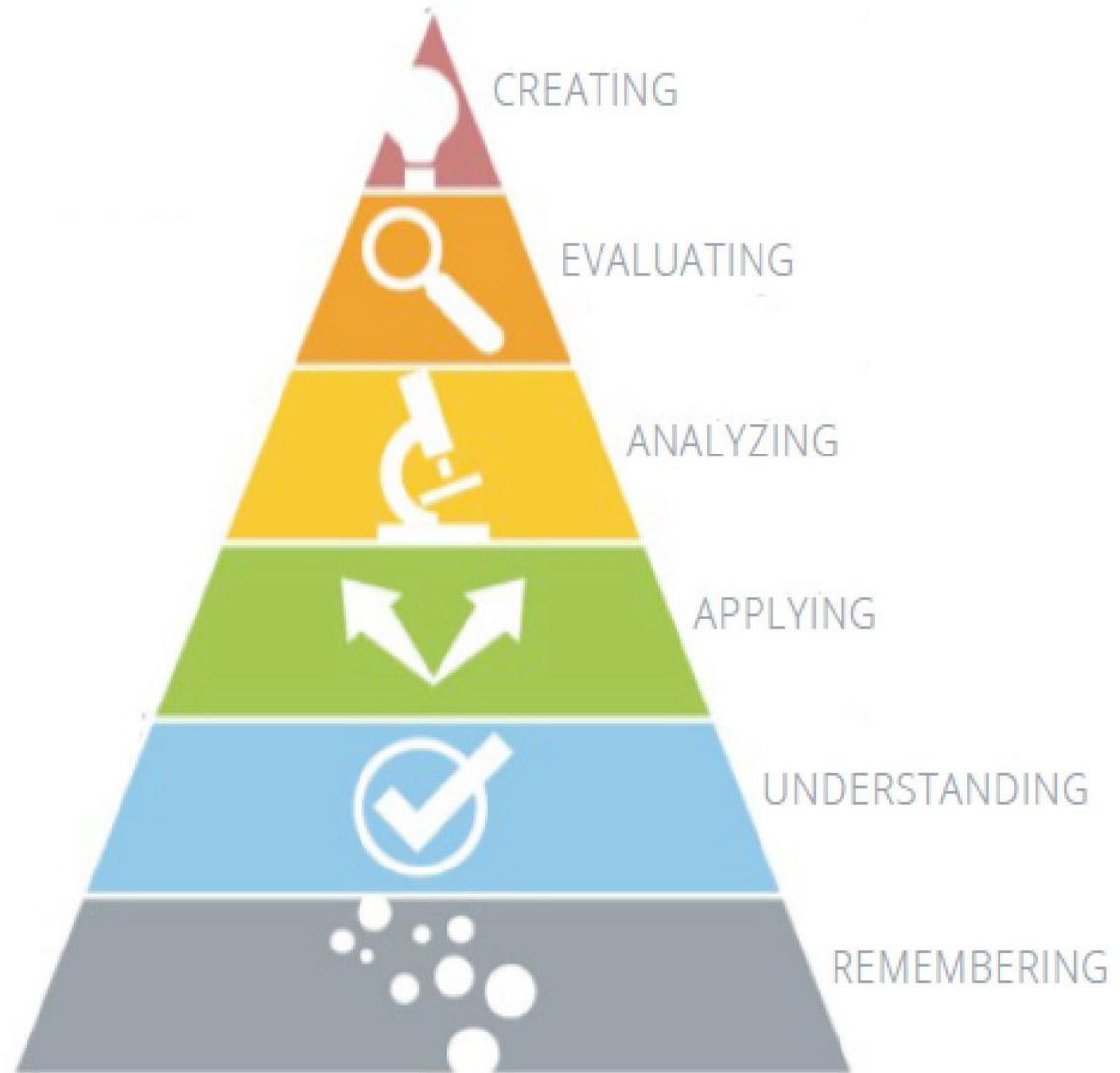
Blended Learning
How It Works Educationally –

Fundamentals of Blended Learning (video)
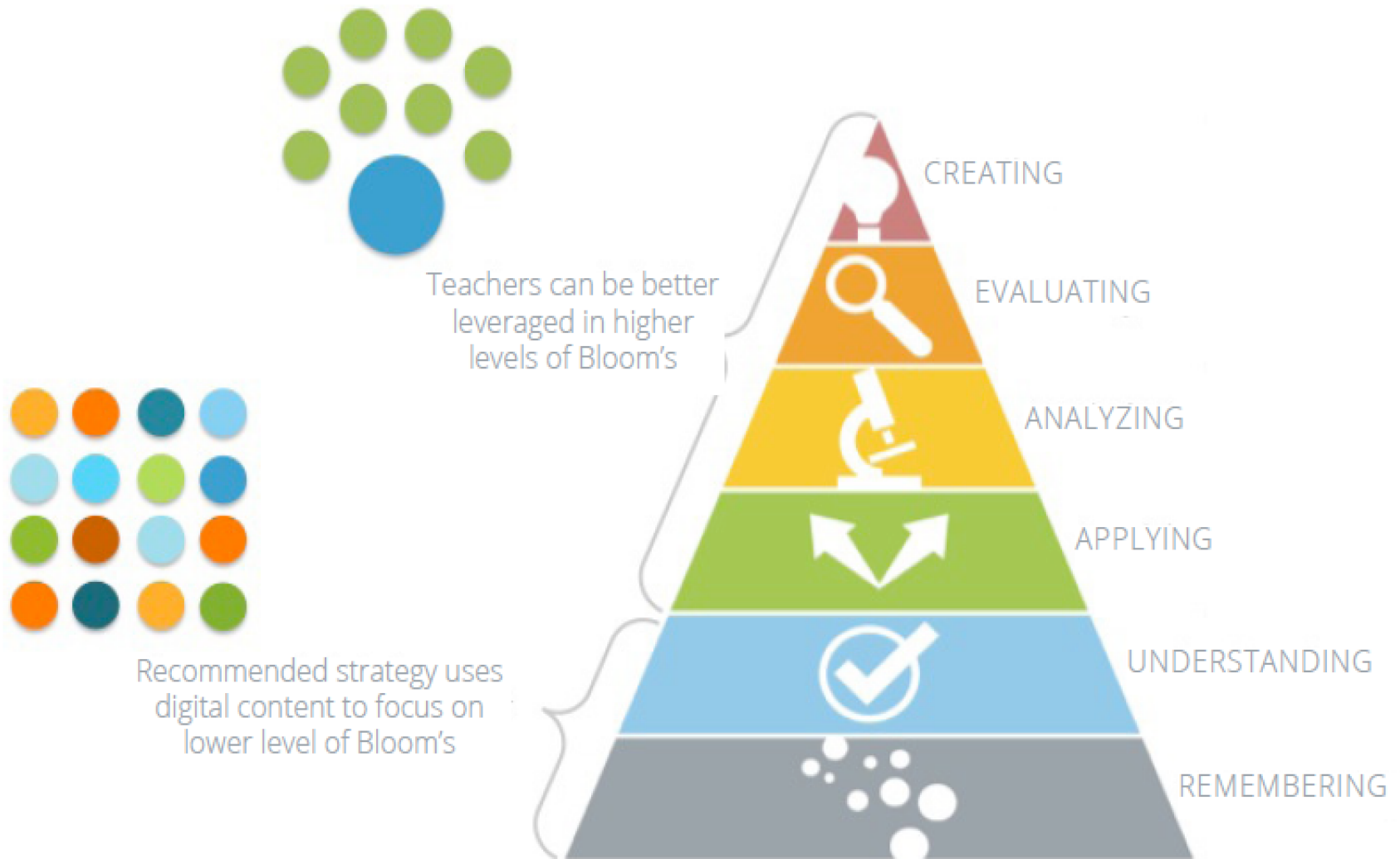
https://youtu.be/3xMqJmMcME0

Blended Learning

- Pros:
  - Ease and depth of Differentiation
  - Enhanced student-teacher contact
  - Automation of data-driven assessments
  - Reduced cost of delivery
- Cons:
  - Infrastructure costs
  - Content costs

Best
SCHOOLS
CONSULTING GROUP
Education at the speed of each student

How It Works Educationally Within Bloom's Taxonomy

Teachers can be better leveraged in higher levels of Bloom's

Recommended strategy uses digital content to focus on lower level of Bloom's

CREATING

EVALUATING

ANALYZING

APPLYING

UNDERSTANDING

REMEMBERING

How It Works Financially
The 14% Problem

The 14% Problem

The 14% problem is about the need for schools to strategize around the very real possibility of significant losses to their student body in the next economic downturn. The included chart, drawn from Wikipedia, shows the cyclical nature of economic recession in the US economy.

The 14% Problem

Name	Dates	Duration (months)	Time since previous recession (months)	Peak unemploy-ment	GDP decline (peak to trough)
Recession of 1969–70	Dec 1969 – Nov 1970	11 months	8 years 10 months	6.1% (Dec 1970)	−0.6%
1973–75 recession	Nov 1973 – Mar 1975	1 year 4 months	3 years	9.0% (May 1975)	−3.2%
1980 recession	Jan–July 1980	6 months	4 years 10 months	7.8% (July 1980)	−2.2%
Early 1980s recession	July 1981 – Nov 1982	1 year 4 months	1 year	10.8% (Nov 1982)	−2.7%
Early 1990s recession	July 1990 – Mar 1991	8 months	7 years 8 months	7.8% (June 1992)	−1.4%
Early 2000s recession	March 2001–Nov 2001	8 months	10 years	6.3% (June 2003)	−0.3%
Great Recession	Dec 2007 – June 2009[49][50]	1 year 6 months	6 years 1 month	10.0% (October 2009)[51]	−4.3%

The 14% Problem

How Blended Works Financially

- Class Size
  - Reduces the <u>effective</u> instructor-to-students ratio, allowing for larger sections

- Reduces cost for specialty courses

- Reduces dependence on subject experts

- One-Room-Schoolhouse Programs
  - Gateway programs
  - School-Within-A-School

Best
SCHOOLS
CONSULTING GROUP
Education at the speed of each student

Our Purpose:
Provide the best education our institutions can sustain

This Moment is
an unprecedented opportunity to sustain the excellence of Independent schools

Let's Discuss!

Jay Weinbach
Educator and
Principal Partner

Education at the speed of each student

331 Melrose Road, Merion Station, PA 19066
610-618-2878 • ejweinbach@BestSchoolscg.com
BestSchoolscg.com