THE SEVEN JUMP MODEL FOR PBL



1. TEACHER INPUT (LECTURES, WRITTEN RESOURCES, RUBRICS)
2. CLEARLY STATE THE QUESTION OR PROBLEM
3. TUTORIAL GROUPS MEET BRIEFLY TO DISCUSS THE PROBLEM
4. TEACHER STATES THE OBJECTIVE (TO ANSWER A QUESTION, WRITE AN ESSAY, SOLVE AN EQUATION, ETC)
5. STUDENTS RESEARCH INDEPENDENTLY \*
6. TUTORIAL GROUPS MEET AND SHARE RESEARCH
7. TUTORIAL GROUPS MEET AND FORMULATE ONE PRODUCT\* \*\*

\*GRADED WORK.

\*\* TIMED WORK.

WHY IT WORKS:

STUDENTS ARE RELYING ON ONE ANOTHER TO DO THE HOMEWORK.

STUDENTS MUST JUDGE THEIR OWN RESEARCH, AS WELL AS OTHER STUDENTS RESEARCH.

STUDENTS ARE ENPOWERED TO DRIVE THE PROCESS. TEACHERS ARE THERE TO GUIDE, BUT ALLOW STUDENTS TO DO THE TALKING. LET THEM HAVE OWNERSHIP.

EACH GROUP MEMBER: IS PREPARED AND PARTICIPATES.

FACILITATOR: SETS THE AGENDA, GUIDES THE DISCUSSION, ENCOURAGES PARTICIPATION AND SUMMARIZES THE DISCUSSION.

SCRIBE: TAKES NOTES AND WRITES FINAL PRODUCT.

STUDENTS CAN USE GOOGLE DOCS AND SHARE WITH MEMBERS TO EDIT. HELPFUL IF A STUDENT IS ABSENT.

TEACHER: ASSISTS DISCUSSION, CREATES WELCOME LEARNING ENVIRONMENT, CONTRIBUTES KNOWLEDGE AND EXPERIENCE, QUESTIONS EVERYTHING.

[Intro to PBL](https://www.youtube.com/watch?v=bAi1EuMyafE)

[PBL at Maastricht University](https://www.youtube.com/watch?v=cMtLXXf9Sko)

[Using PBL for AP classes](https://www.youtube.com/watch?v=CZLwoNZGG2I&feature=youtu.be)



Sammamish High School, Bellevue, Washington started using PBL across the AP curriculum in 2010.

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| **TaBle 2.****Statistically significant gains in mean ap scores by course** |
| **Course** | **Comparison group (no pBl exposure) mean ap score** | **Treatment group (pBl exposure) mean ap score** |
| **ap Biology** | 1.67 | 1.97 |
| **ap Chemistry** | 1.77 | 2.13 |
| **ap physics (combined)** | 2.78 | 3.61 |
| **ap Calculus (combined)** | 2.53 | 3.01 |
| **ap Statistics** | 1.91 | 2.36 |
| **ap u.S. government** | 2.27 | 2.74 |
| **ap psychology** | 2.28 | 3.06 |
| **ap u.S. history** | 1.85 | 2.69 |

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| **TaBle 3.****Statistically significant gains by students who speak a first language other than english at home in mean ap scores by course** |
| **Course** | **Comparison group (no pBl exposure) mean ap score** | **Treatment group (pBl exposure) mean ap score** |
| **ap Calculus (combined)** | 2.08 | 2.77 |
| **ap Statistics** | 1.43 | 2.10 |
| **ap Chemistry** | 1.41 | 1.93 |
| **ap physics (combined)** | 2.53 | 3.53 |
| **ap u.S. government** | 1.66 | 2.40 |
| **ap psychology** | 1.64 | 2.97 |
| **ap u.S. history** | 1.58 | 2.26 |
| **ap World history** | 1.95 | 2.28 |

Enrollment: about 1000 students.

* 47% White, 5% Black, 18% Hispanic, 21% Asian, 8% Multiethnic
* 38% Free/Reduced Lunch Price
* 12% Enrolled in Special Education Programs
* 32% English as Second Language
* 47% Children of Parents with Only High School Education

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| **TaBle 4.****Statistically significant gains by students who receive free and reduced-price lunch in mean ap scores by course** |
| **Course** | **Comparison group (no pBl exposure) mean ap score** | **Treatment group (pBl exposure) mean ap score** |
| **ap Biology** | 1.18 | 1.57 |
| **ap Chemistry** | 1.13 | 1.90 |
| **ap environmental Science** | 1.36 | 1.76 |
| **ap Statistics** | 1.31 | 2.03 |
| **ap psychology** | 1.76 | 2.48 |
| **ap u.S. history** | 1.56 | 2.13 |
| **ap World history** | 1.91 | 2.32 |

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| **TaBle 5.****Statistically significant gains by students with disabilities in mean ap scores by course** |
| **Course** | **Comparison group (no pBl exposure) mean ap score** | **Treatment group (pBl ex- posure) mean ap score** |
| **ap Calculus (Combined)** | 1.89 | 2.93 |
| **ap Statistics** | 1.32 | 2.20 |
| **ap physics (Combined)** | 2.33 | 3.00 |
| **ap u.S. government** | 1.36 | 2.07 |

Source: Sutton and Knuth, A Schoolwide Investment in Problem-Based Learning. Kappan, October 2017.

Some universities that use PBL:

Stanford University

University of Alberta

Maastricht University

Aalborg University

McMaster University

Spaulding University

University of Delaware

University of Leicester

Western University of Health Sciences

University of Limerick

University of Exeter

Middle Tennessee State University

West Point

University of York Law School

Manchester Metropolitan University

University of Georgia USA

University of Colorado Denver

Howard University

University of Florida

The Open University UK

University of Firenze

Northern Illinois University

Penn State

University of Sydney