

Studying Opportunity to Learn In Initial Teacher Training

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What is Opportunity to Learn (OTL)?

- “Whether or not . . . students have had the opportunity to study a particular topic or learn how to solve a particular type of problem presented by the test”

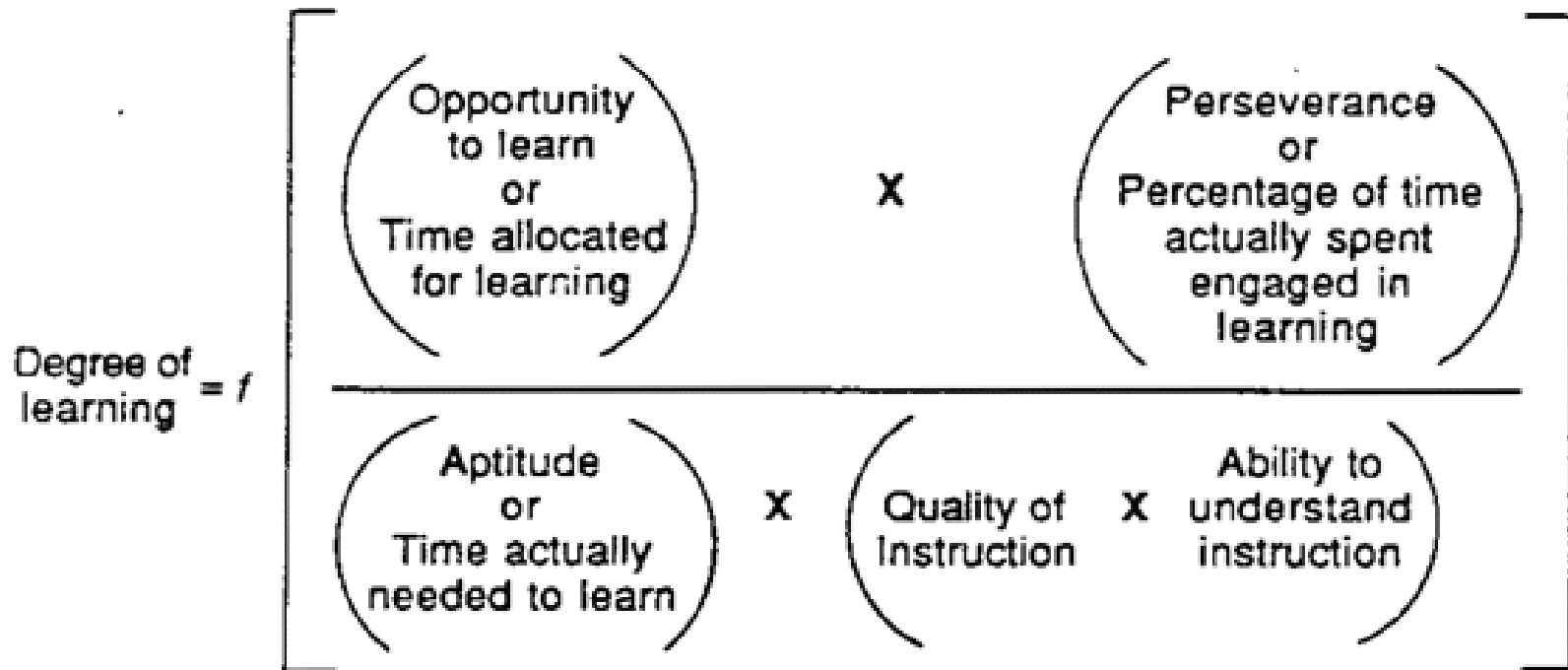
-- Husén, 1967

Carroll's Model of School Learning (1963)

1. Aptitude – time needed to learn under optimal conditions
2. Ability – to understand instruction
3. Perseverance – amount of time student is willing to engage in learning
4. Opportunity to learn – time allowed for learning
5. Quality of instruction

Carroll's Model

FIGURE 1.1 The Carroll Model



Why is OTL Important?

1. As a measure of alignment with intended curriculum – policy implementation
2. As explanation of differences in learning – understanding the mix of influences:
 - a. Demographic characteristics of prospective teachers
 - b. Student motivation
 - c. OTL

OTL Measurement Decisions

- Source of report
- Amount of study or degree of mastery
- Level of detail
- When to ask

Source of Report

- Program documents (intended teacher preparation program curriculum)
- Course syllabi (intended course curriculum)
- Instructor reports
- Teacher preparation student reports
- Independent observer reports

Amount of Study or Degree of Mastery

- Amount of study
 - How long did you study
 - To what extent was a topic covered
- Degree of mastery
 - How much did you learn about...
 - How well would you do on an assessment about...
 - How well prepared do you feel about ...

Level of detail

- Choices about grain size
- Choices about dimensions separately or jointly
- Smaller grain size has higher association with learning
- Composite indices will have higher reliability

When to Ask

- During program
 - Recent memory
 - Easier to complete survey
- On the job
 - Reflection on whether opportunity was adequate

Recent Studies of Teacher Preparation OTL

- New York City Pathways Study
- Teacher Education and Development Study
– Mathematics (TEDS-M)
- Effects of teacher preparation on attrition

New York City Pathways

- Multi-year study of teacher preparation in New York City – varying programs and pathways
- Data collected on teachers, programs, teacher-reported OTL, and pupil achievement
- Data on OTL both from instructors and from students

Pathways OTL Design Decisions

- Source of report
 - Program documents, course syllabi, instructor reports, teacher preparation student reports
- Study or mastery
 - Study in initial surveys; mastery in later surveys (but not linked to initial preparation)
- Level of detail – 17 topics plus questions about field experience
- When to ask – in program and later

Sample Prospective Teacher Question

- “In your program, prior to becoming a full-time classroom teacher, how much opportunity have you had to do the following?”
 - “Study stages of child development and learning”
 - Response options: Extensive opportunity, Explored in some depth, Spent time discussing or doing, Touched on it briefly, None

Uses of OTL Data

- Syllabi and faculty reports used to illustrate dramatic differences between some programs, for example, in attention to early reading
- Student surveys used to confirm differences across program types, for example, in learning about characteristics of emergent readers

Uses of OTL Data

- General conclusion is that cross-program variation in OTL is constrained
- Document analysis used to identify link between broad OTL measures and pupil learning
- Prospective teacher survey used to identify links between some OTLs and effects on pupil learning

TEDS-M

- Study of preparation of elementary and lower secondary mathematics teachers
- IEA Study reporting on representative national samples in 17 countries

TEDS-M OTL Design Decisions

- Source of report
 - Program survey, instructor survey, teacher preparation student survey
- Study or mastery
 - Study
- Level of detail – about 90 items, collapsed into about 20 scales
- When to ask – end of program

Sample Prospective Teacher Question

- “In your teacher preparation program, how often did you have the opportunity to learn to do the following?”
 - “Develop specific strategies and curriculum for teaching gifted pupils”
 - Response options: Often, Occasionally, Rarely, Never

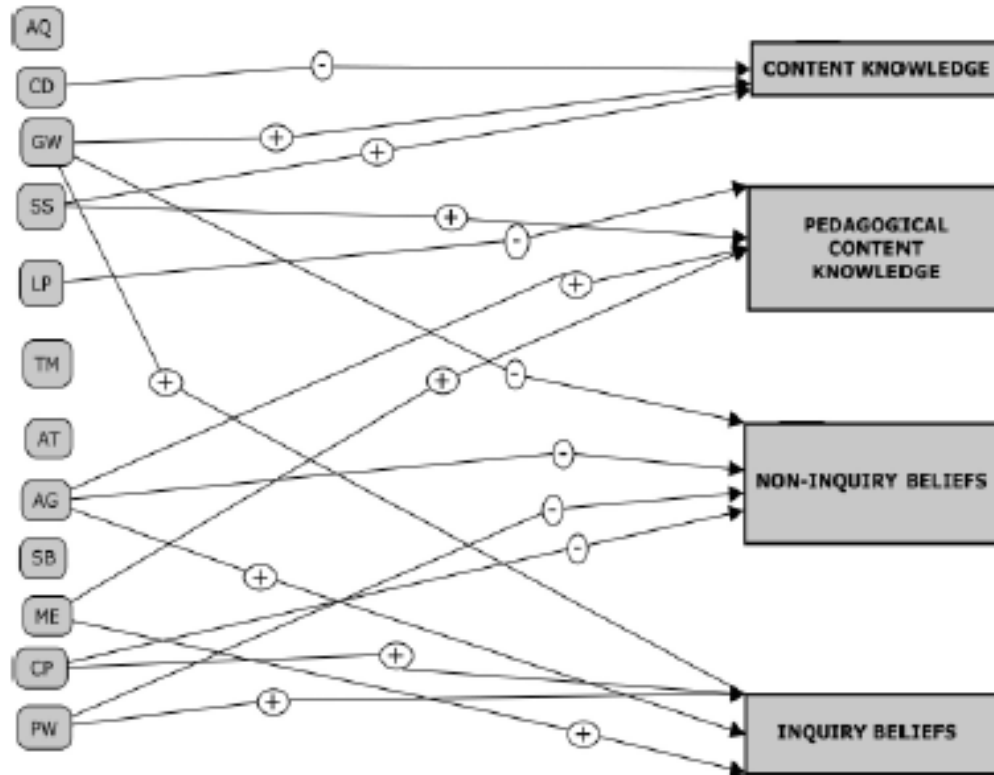
Uses of Teacher Preparation Result

- Understanding policy implementation
 - Compare student responses to policy
 - Compare student responses to instructor responses
- Understanding influences on teacher performance
 - Compare across programs in OTL patterns and teacher performance patterns

Study of Links Between OTL and Teacher Knowledge

- Rachel Ayieko 2014 dissertation
- Uses TEDS-M data
- Focus on US, Russia, Poland
- OTL scales for pedagogical practices, instructional planning, and teaching for understanding

Between-institution Effects in US



Selected Findings

- Student OTL reports vary within institution
- Within nations, differences in between-institution OTL predict differences in knowledge and beliefs, especially beliefs about inquiry-oriented beliefs about mathematics and mathematics teaching

Effects of Teacher Preparation on Beginning Teacher Attrition

- Ingersoll, Merrill, May, 2014
- Nationally (US) representative sample of Science and Mathematics teachers

Attrition Study Design Decisions

- Source of report
 - Post-hoc national survey of beginning teachers (Schools and Staffing Survey)
- Study or mastery
 - Study
- Level of detail – number of courses taken and length of field experience
- When to ask – as beginning teachers

Specific Questions

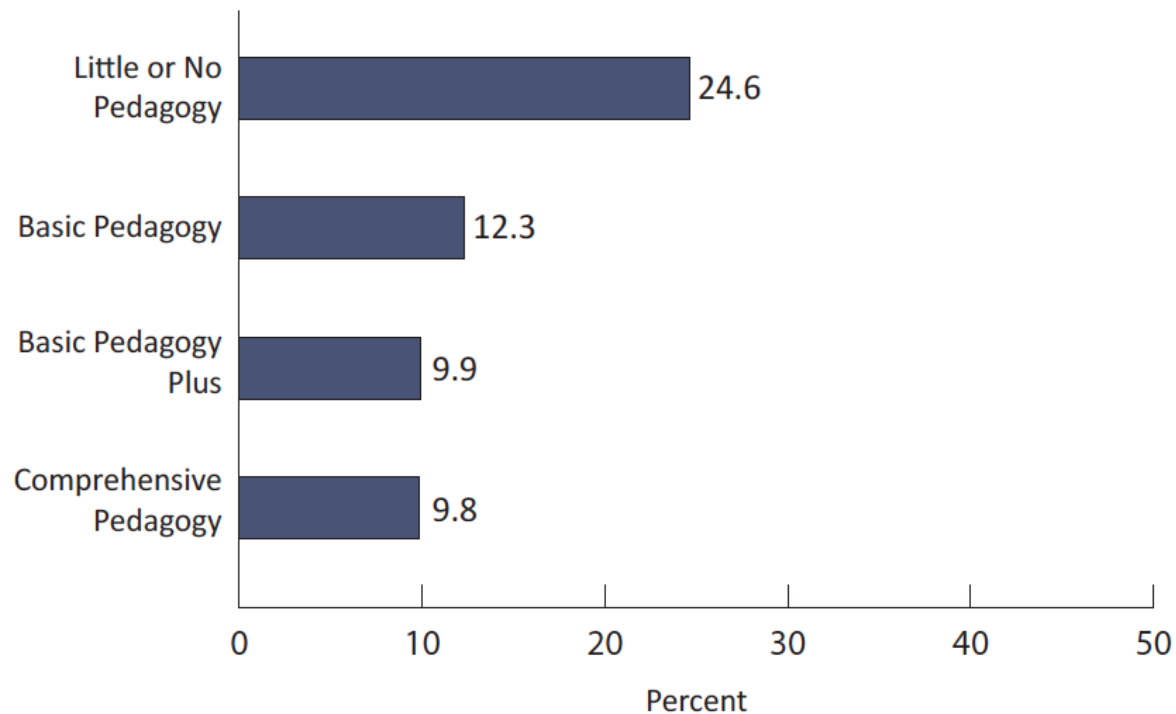
- The number of courses in teaching methods
- The amount of practice teaching
- OTL (present or absent):
 - Selecting and adapting instructional materials
 - Learning theory or child/youth psychology
 - Observe others' classroom teaching
 - Formal feedback on their own teaching

Attrition Results

- Those taking 3-4 methods courses 36% less likely to leave than those who took none
- Those with 12 weeks student teaching 3 times less likely to leave than those with none
- Having any of four specific OTLs strongly related to staying

Combined OTL “Packages”

Figure 4. Predicted Probability of Attrition of Beginning Teachers, by Various Pedagogy Packages: 2004-05



Summary Thoughts from Research

- OTL is related to desired outcomes
 - Knowledge and beliefs
 - Retention in teaching
 - Pupil learning
- Measures used are coarse aggregates
- Teacher reports valid predictors of outcomes

OTL Studies to Inform Program Change

- Individual programs
 - Gap analysis – compare offerings to intended outcomes (preparation to teach second-language students)
 - Addressing weaknesses in graduate performance (matching course requirements to assessment weaknesses)
 - Data are program documents

Louisiana: Identifying Gaps in OTL

- State has begun reporting performance (Value Added) of recent graduates for all teacher preparation programs
- In response, programs with weak performance in particular areas have examined opportunities for students to learn in these areas, leading to program revisions
- Note: OTL from program documents, rather than student surveys

Final Thoughts

- OTL is related to desired outcomes
- Student responses predictive of outcomes
- Coarse grain size has been useful for research and program changes
- Comparisons across programs helpful for interpreting responses