

# Assessment of Instructional Collaboration Using the Integrated Longitudinal Case-based Learning Model to Enhance Teaching and Learning



**Indiana University**  
**School of Health and Rehabilitation Sciences**  
**Department of Physical Therapy**  
**Doctor of Physical Therapy Program**

# *Welcome to the “Family”*

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## *Integrated Longitudinal Case-Based Learning Team*

- Peter Altenburger, PT, PhD
- Terry Loghmani, PT, PhD
- Valerie Strunk, PT, MS
- Amy Bayliss, PT, DPT

# Outline

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- **Review of Phase I**

- Development of the instrument:

- “IU DPT Case Family Tree”

- Evolution of the model:

- “Integrated Case-Based Learning Model” (ILCBL)

- **Current progress with Phase 2**

- Case matrix development

- Student learning outcomes

- Assessment plan

- **Current outcomes**

- **Future Directions**

# Overall Development & PRAC Support

## Instrument

### Family Tree

“PHASE I”

PRAC Grant 2010

“Assessment of an Integrative Longitudinal Case-Based Learning Model as a Curriculum Strategy to Enhance Teaching and Learning”



## Model

ILCBL

“PHASE II”

PRAC Grant 2012

“Assessment of Instructional Collaboration Using the Integrated Longitudinal Case-Based Learning Model to Enhance Teaching and Learning”

## PRAC 2010 (Phase I)

Course & Instrument Development

System Logistics

Individual Application & Dissemination



## PRAC 2011 (Phase II)

Curricular & Model Development

Direct Assessment

Collaboration & Dissemination

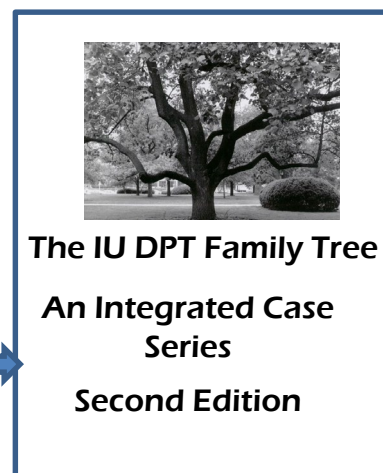
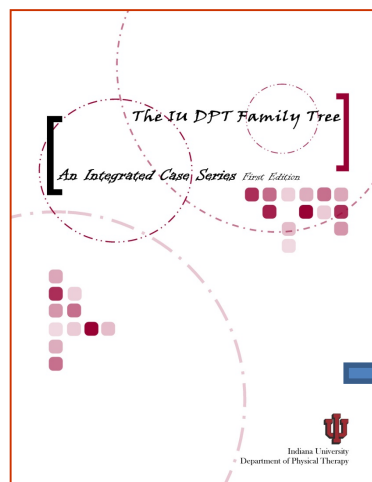
# The “Family” History

INSTRUMENT

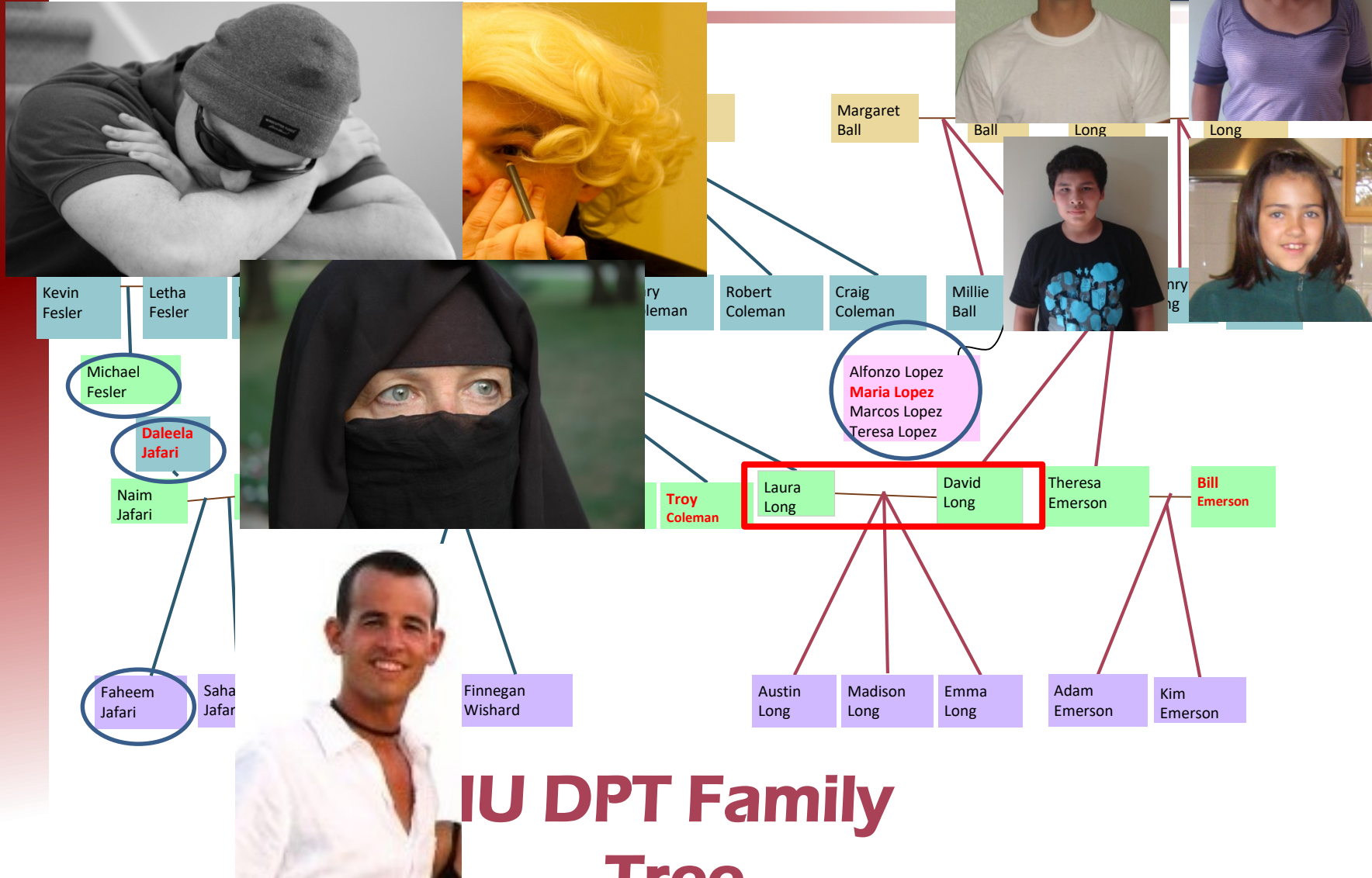
## WHY?

Initially developed to help individual faculty with facilitating students’:

- problem-solving & clinical decision making skills
- cultural & ethical competence
- preparation for entry-level clinical practice



2 families; 4 generations; 37 → 45 Inter-Related Cases  
 Copyrighted; Multi-cultural; Life Span; Practice Pattern



# IU DPT Family Tree

# Biography Example

## 'Troy Coleman'



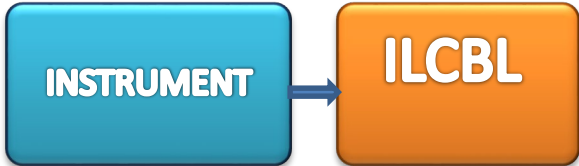
- Age: 25
- Gender: Male
- Race: Caucasian
- Work History: Troy is a factory worker and has been working with the same company since graduating from high school.
- Living Environment: He lived with his wife in a modest home in the country until the divorce. After his wife left, he moved into a friend's third story 2- bedroom apartment.
- Social History: He had married his high school sweet heart right after graduation. After six years of marriage, his wife abruptly left him without an explanation.
- Lifestyle: He does not exercise because his job is physically demanding and he is worn out by the time he's finished with work. The last thing he wants to do when he gets home is work-out. After his wife left, he started drinking up to 10 beers/day on the weekends, sometime alone and sometimes with friends.

# Barrow's Taxonomy

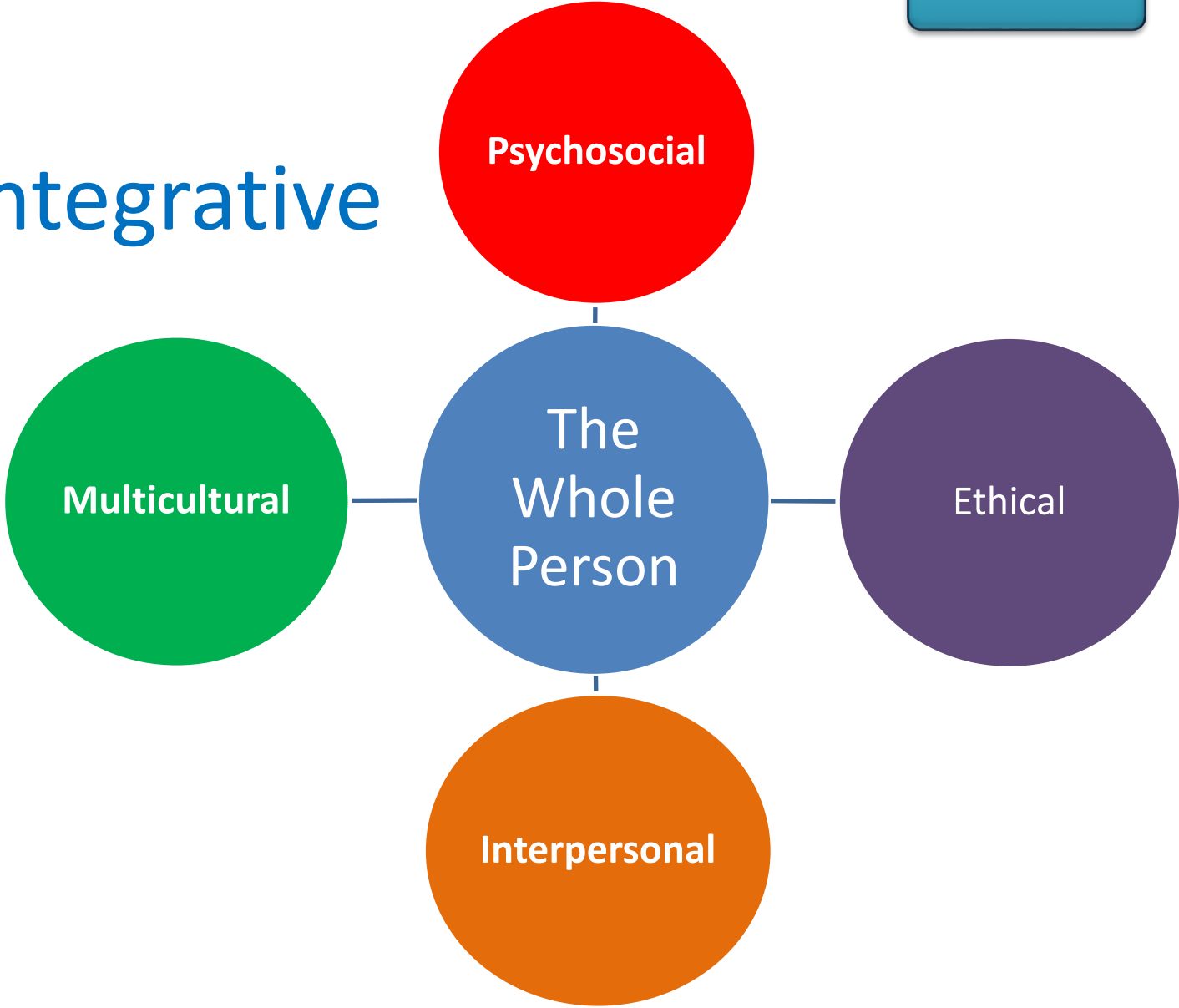
Type of method	Lecture Based Cases	Case-based Lectures	Case Method	Modified Case Method	Problem Based
Definition	Case presented in confines of lecture	Cases used as adjuncts to lecture	Case used as a medium for learning	Student group work with case	Student groups work on case from scratch
Student/instructor role	Instructor centered	Instructor centered	Student and instructor shared	Student centered w/ faculty facilitation	Student centered with faculty feedback
Case/problem given	Complete case given as example	Complete case given as foundation for lecture material	Complete case given for discussion	Partial case given with stimulus questions	Small case vignette or problem provided



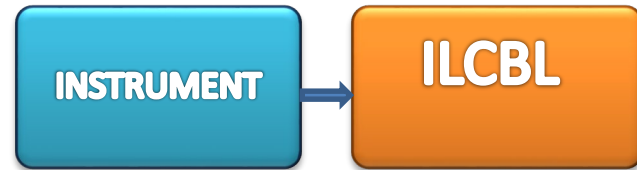
# Evolution of the Model



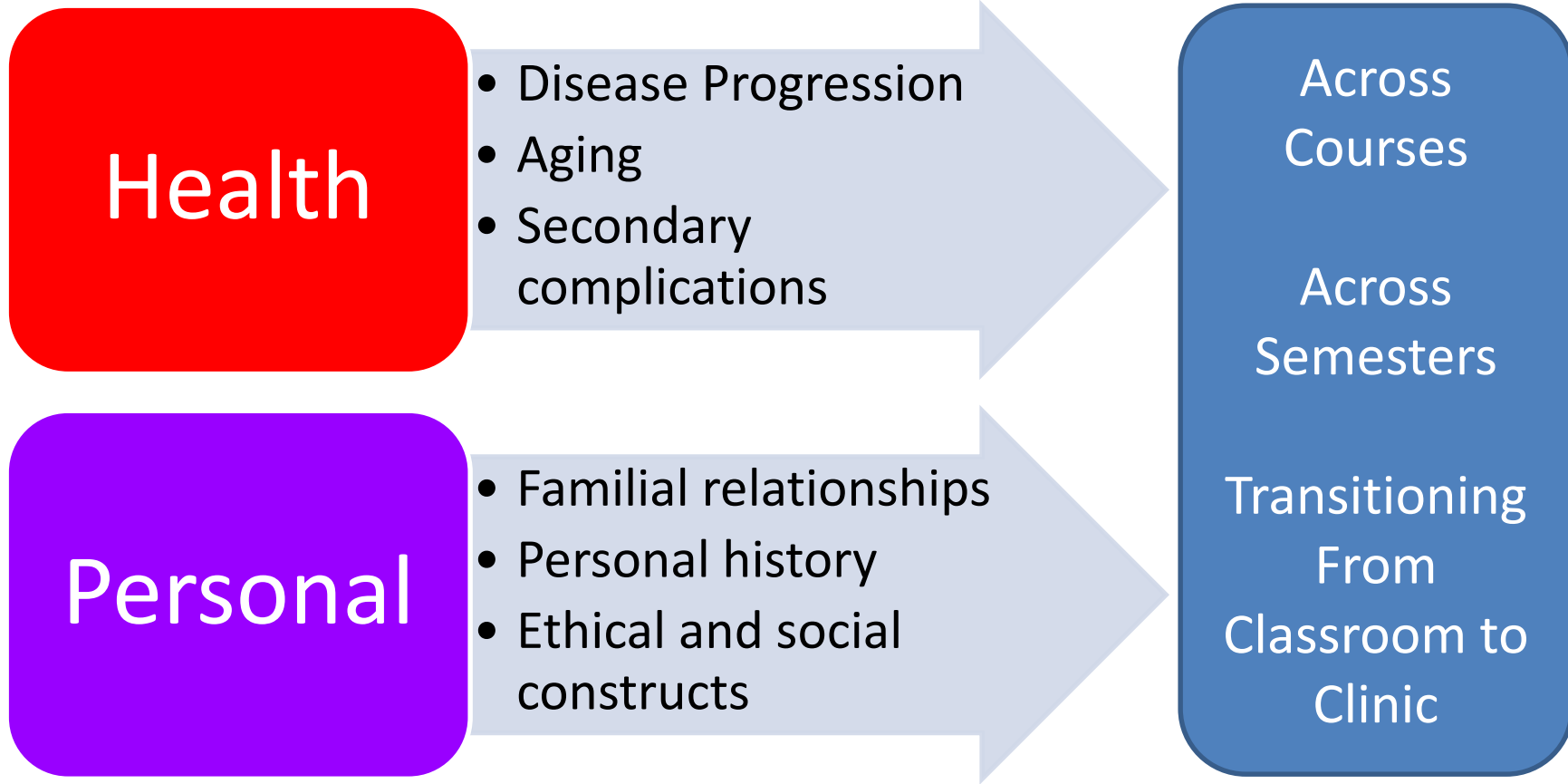
Integrative



# Evolution of the Model



## Longitudinal



# ILCBL Strategic Development

ILCBL

1. Target curricular objectives
2. Identify specific cases for integration (6)
3. Develop longitudinal case progression
4. Attach specific learning objectives to the case progression
  - Consider all domains of learning
  - Consider course objectives
5. Identify course implementation
  - Develop an application matrix
  - Course instructor responsible for application

## 2: Identify Specific Cases for Integration

Case Family Member	Diagnoses
Daleela Jafari, 72	Osteoporosis, Type II Diabetes
Jack "Friendly Eagle" Ball, 83	Congestive Heart Failure
Carly Wishard, 38	Wrist and hand pain/dysfunction, Breast Cancer
Maria Lopez, 31	Type I Diabetes
William Emerson, 39	TBI
Troy Coleman, 25	ACL injury, burn

# Case Family Integration & Implementation Across the Curriculum

## The 'Matrix'



Case	Semester 1 Fall First Year	Semester 2 Spring First Year	Sum 1	Semester 3 Fall Second Yr	Semester 4 Spring Second Yr	Summer II	Semester 5 Fall Third Yr
Carly Wishard							
Course	P511 Clinical Decision Making	P515 Exam and Intervention I		P526 Exam and Intervention II	P680 Health Promotion	P532 Legal and Ethical Issues in PT	P642 Neurological Rehab II
Content	<b>Introduction</b>	<b>Carpel Tunnel Syndrome</b>		<b>Dx = CMC Form of compensation from CTS</b>	<b>Risk factors for cardiac involvement</b>	<b>Beneficence (Burnout)</b>	<b>Her son diagnosed with CP (Finn)</b>
Course		P646 Therapeutic Ex & Modalities		P643 Psychosocial Dimensions of PT	P524 Cardiopulmonary Practice		P660 Special Topics
Content		<b>Carpel Tunnel Syndrome</b>		<b>Burnout (PT)</b>	<b>Angina</b>		<b>Breast Cancer</b>
Course		P Pathophysiology					
Content		<b>Breast Cancer Development</b>					

# Example of Year by Year Objectives

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Students will be able to:

- Year 1
  - demonstrate applied cultural sensitivity
- Year 2
  - apply psychosocial and cultural concepts to various aspects of patient care
  - apply accurate clinical decision-making with respect to patient examination and intervention
- Year 3
  - assimilate information from various courses when managing patients with multiple system involvement

# Assessment Plan

Assessment Tool	Year 1	Year 2	Year 3	Measurement Characteristics
Survey (Likert Scale and Open ended)	X	X	X	Indirect
Electronic Portfolio Reflection	X	X	X	Indirect
Clinical Performance Instrument	X	X	X	Direct
Faculty Course Outcomes	X	X	X	Direct
Complex Case Application			X	Indirect/Direct
Digital Story			X	Indirect

**“It’s all in the family...”**

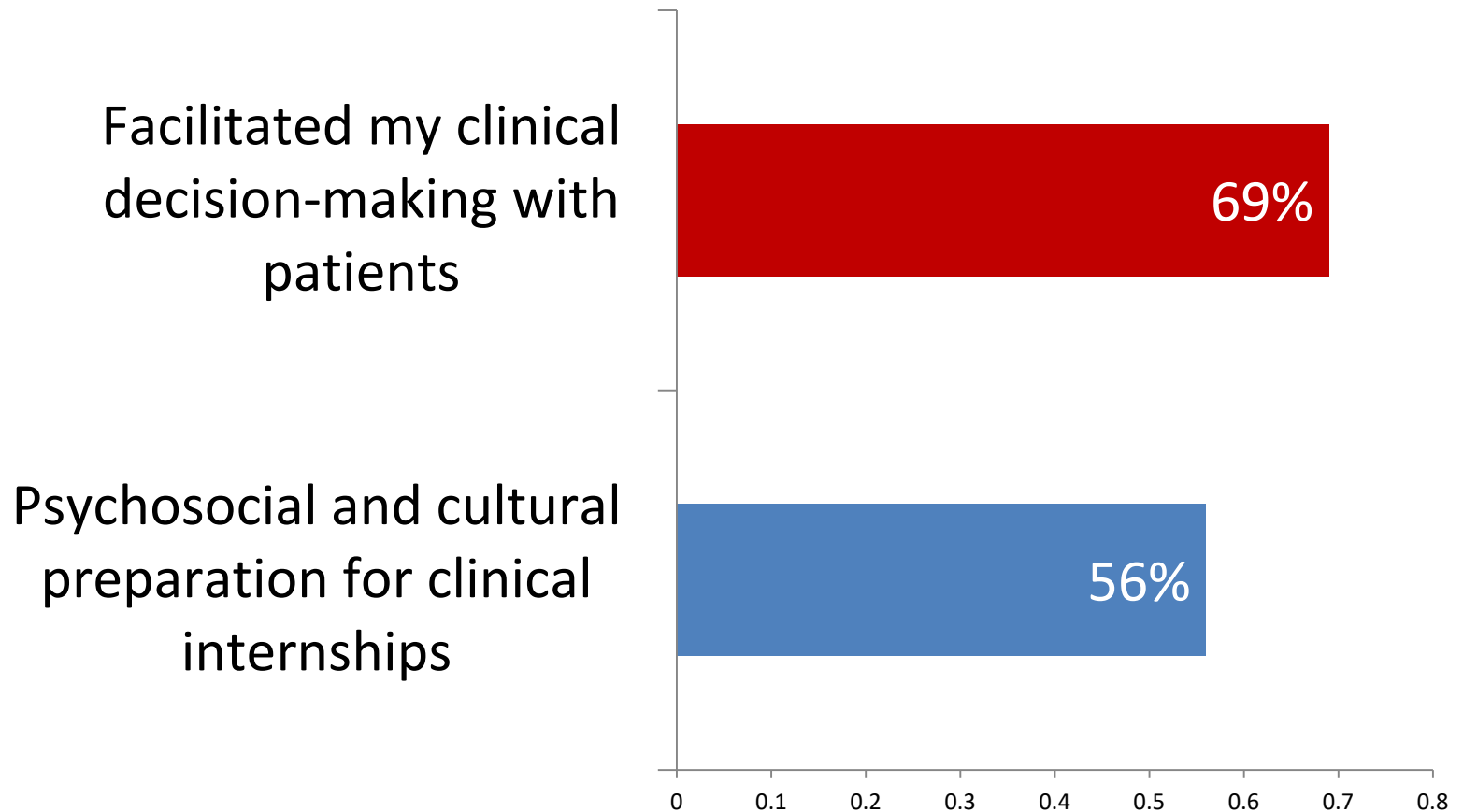




# Student Outcomes

- Clinical Preparation (36 second year DPT Students)

## Student Perception of the Impact of Integrated Case Studies



# Student Outcomes

- Clinical Preparation (36 second year DPT Students)

## Student Perception of the Impact of Integrated Case Studies

Integration of psychosocial  
and cultural aspects into  
Plan of Care

75%

Facilitated my problem  
solving and critical thinking  
skills

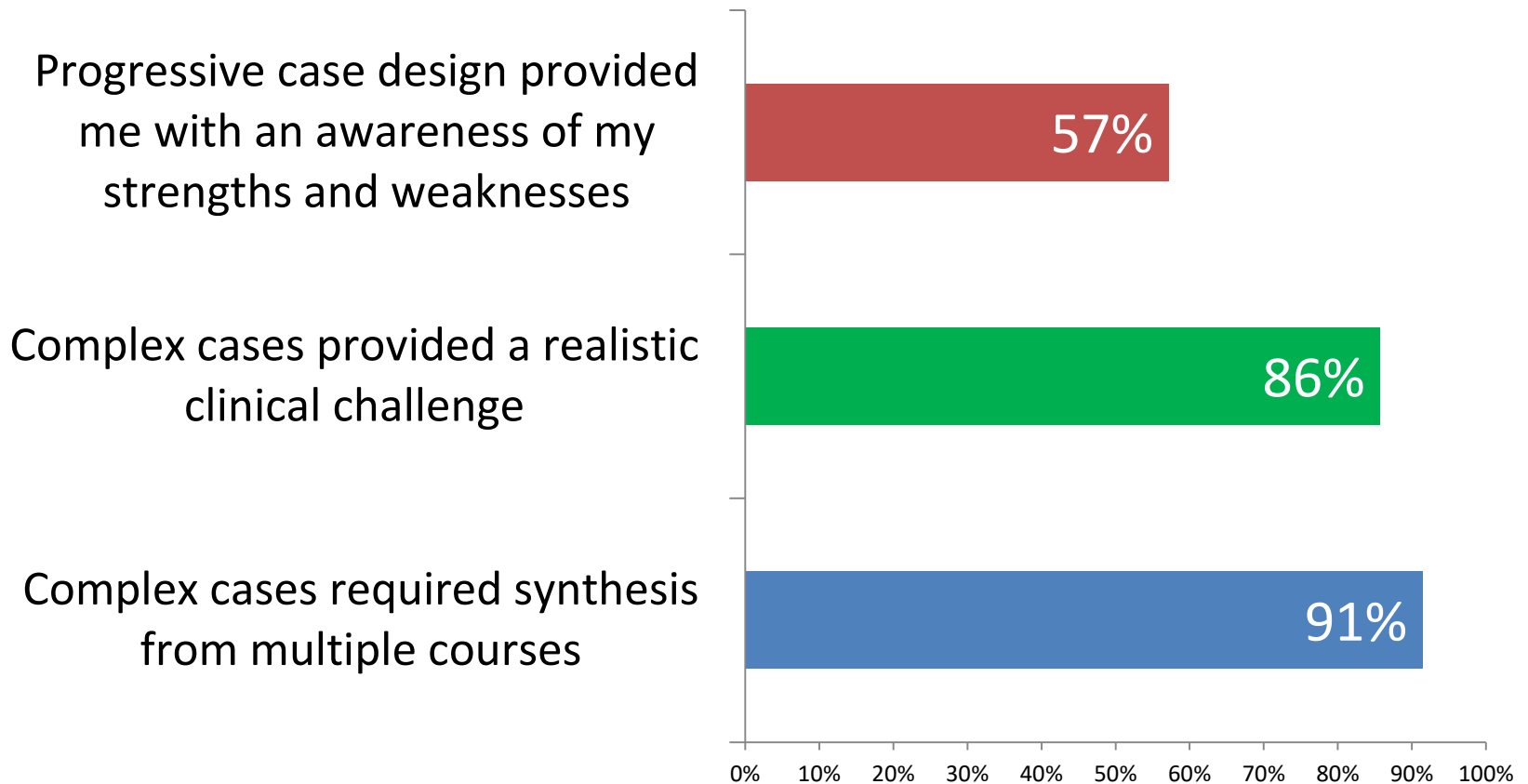
69%

0.36 0.41 0.46 0.51 0.56 0.61 0.66 0.71 0.76 0.81

# Student Outcomes

- Complex Case Analysis

## Student Perception of Complex Case Assignment



# Dissemination

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- National Talk (2012)
  - Physical Therapy National Research Conference
- Concept Translation
  - 11 programs have adopted our model
- Research presentations
  - State and local presentations

# Limitations

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- Direct assessments of the model
  - Difficult to isolate the true impact
- Without faculty buy-in it will not be successful
- Sustainability of the model – e.g. adjusting to curriculum changes, faculty turnover
- Consistent approach to application
- Purpose must be clearly introduced to students
- Does not replace “live patient” exposure

# Future Directions

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- Continue to evaluate effectiveness of integration and progression within and across courses
- Evaluate classroom to clinic impact (Phase III)
- Add layers to interactive aspect – e.g. video clips, electronic clinical documentation records
- Assess use at other institutions
- Explore impact on student professional development

# Thank You!

*It's All in the Family!*

Woohoo!!  
Are we  
havin' fun!



*If you have any **questions**, please do not hesitate to contact us!*

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