an

AMIDON PLANET

production

The Emerging Practice of Teaching Mathematics as Agape

Joel Amidon, Ph.D.
University of Mississippi


Mathematics
Students

Mathematics

Students


Mathematics
Students


FREE
HUGS


FREE
HUGS

agape

agape

eros

agape

eros

desires to possess

agape

eros

desires to possess

love of the worthy

agape

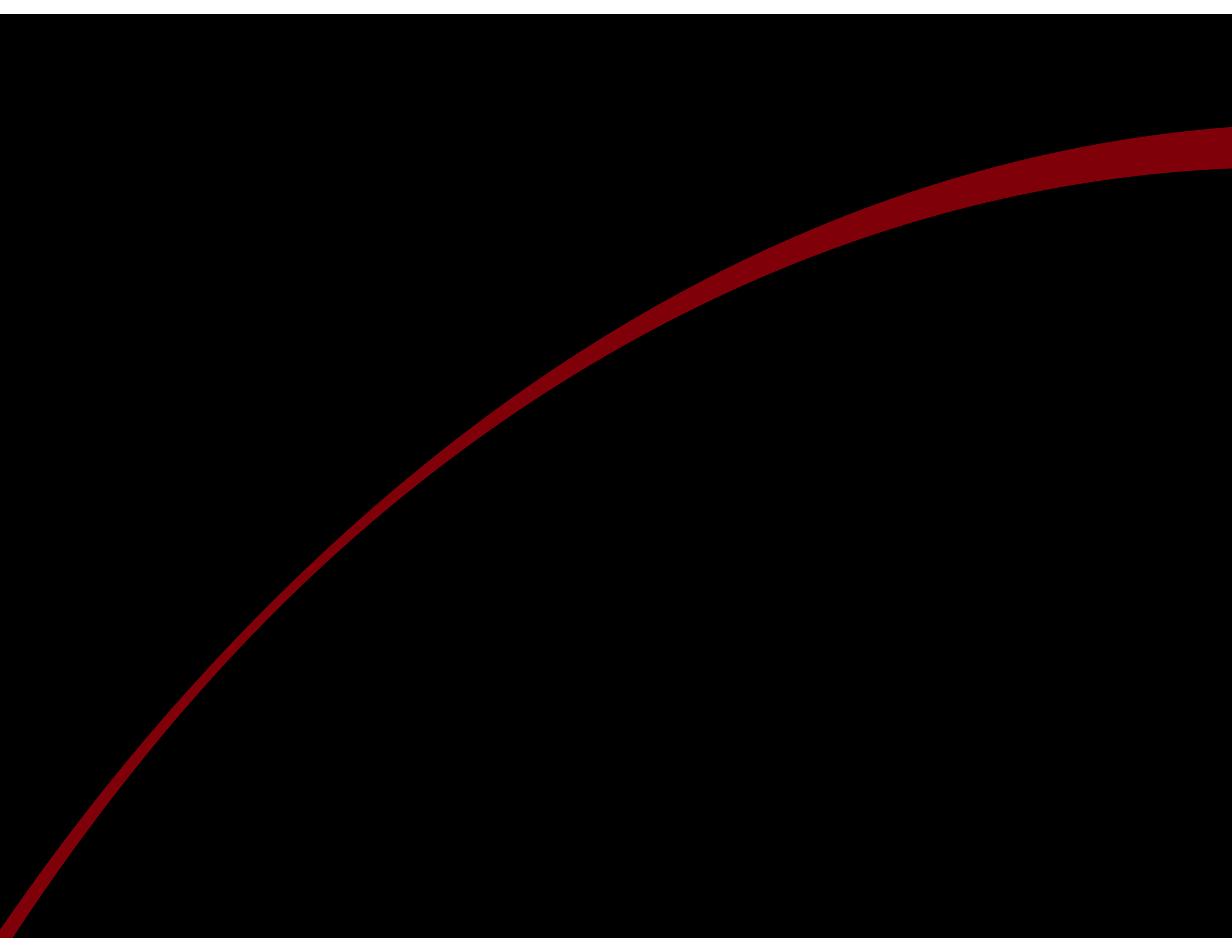
seeks to give

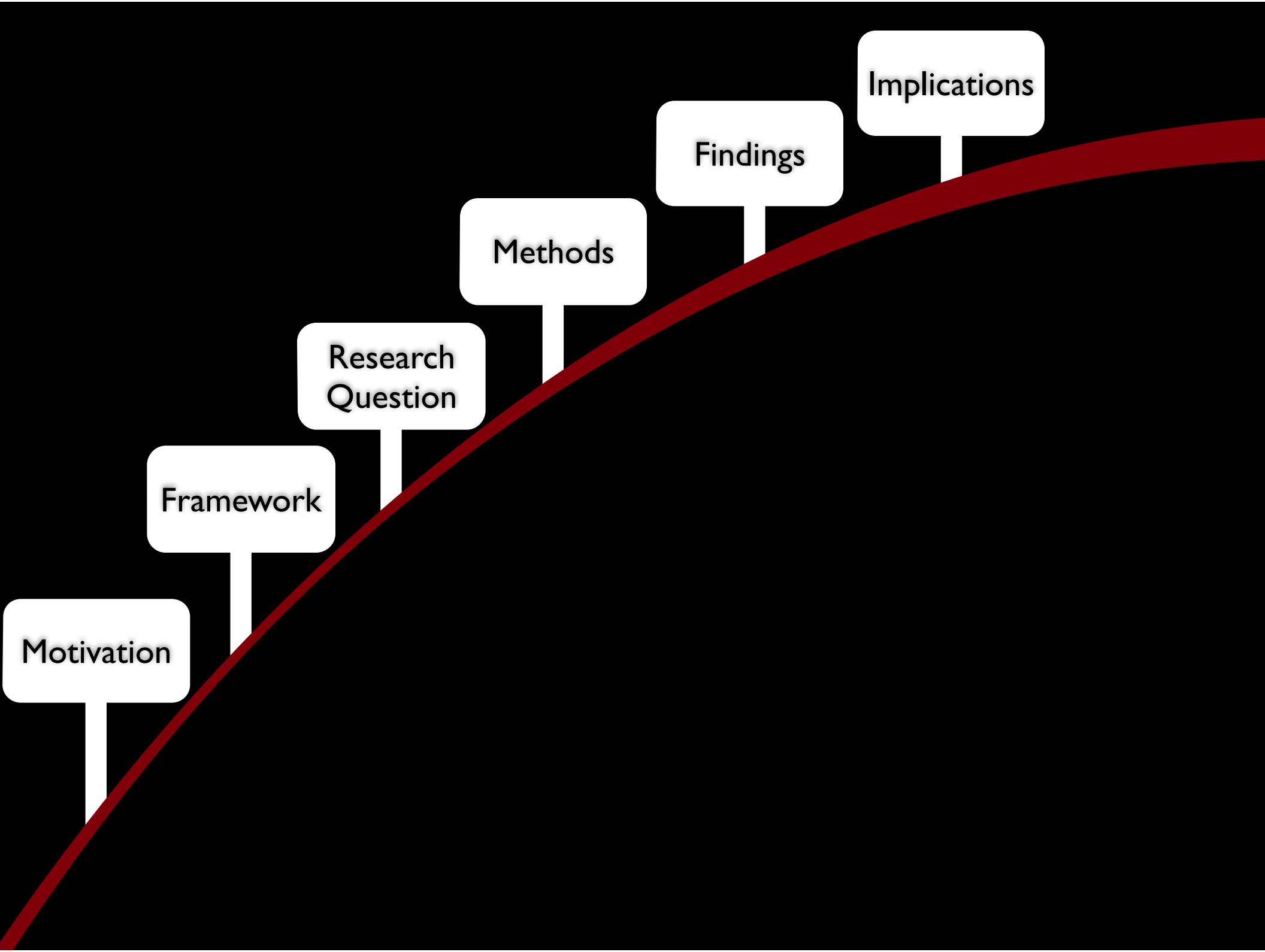
eros

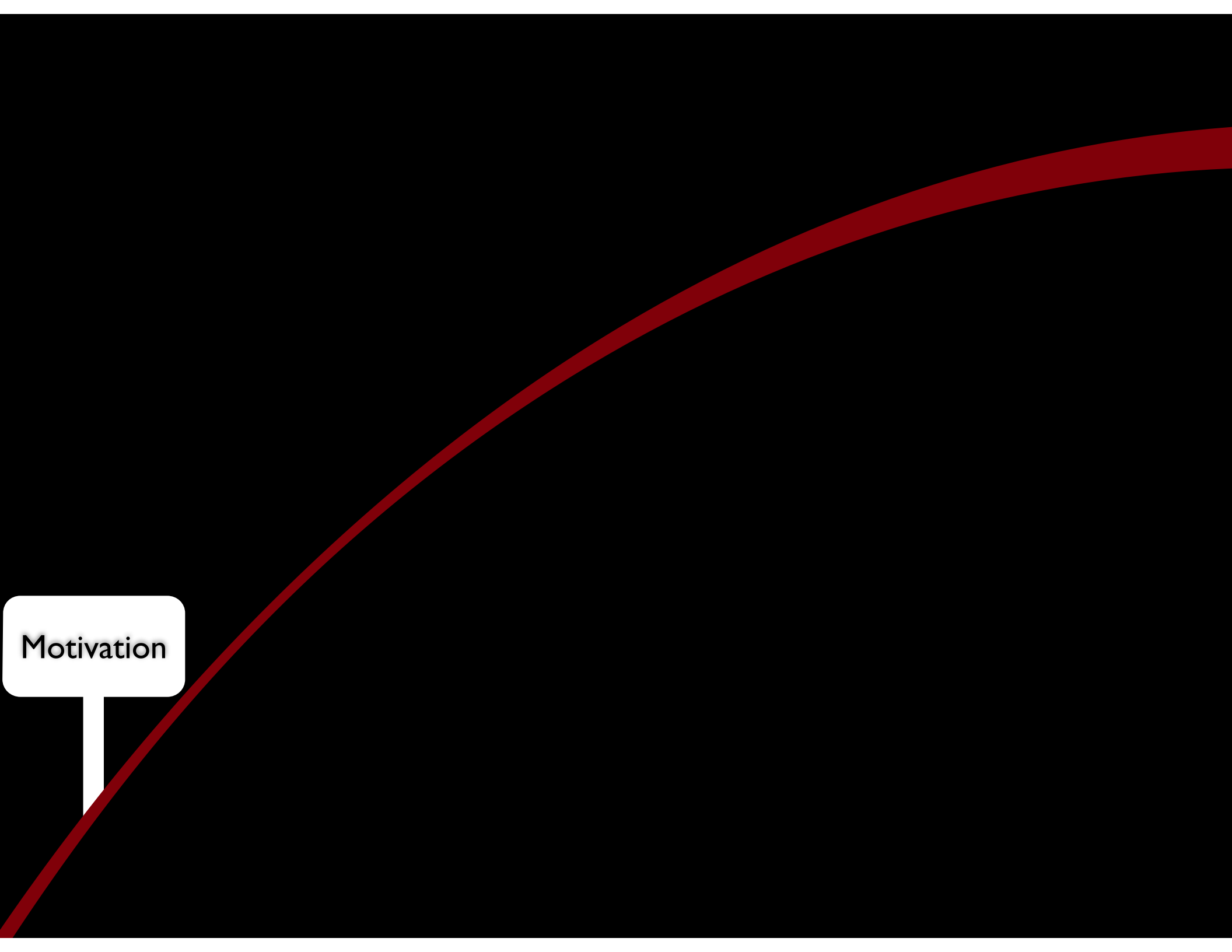
desires to possess

love of the worthy

agape	eros
seeks to give	desires to possess
given irrespective of merit	love of the worthy

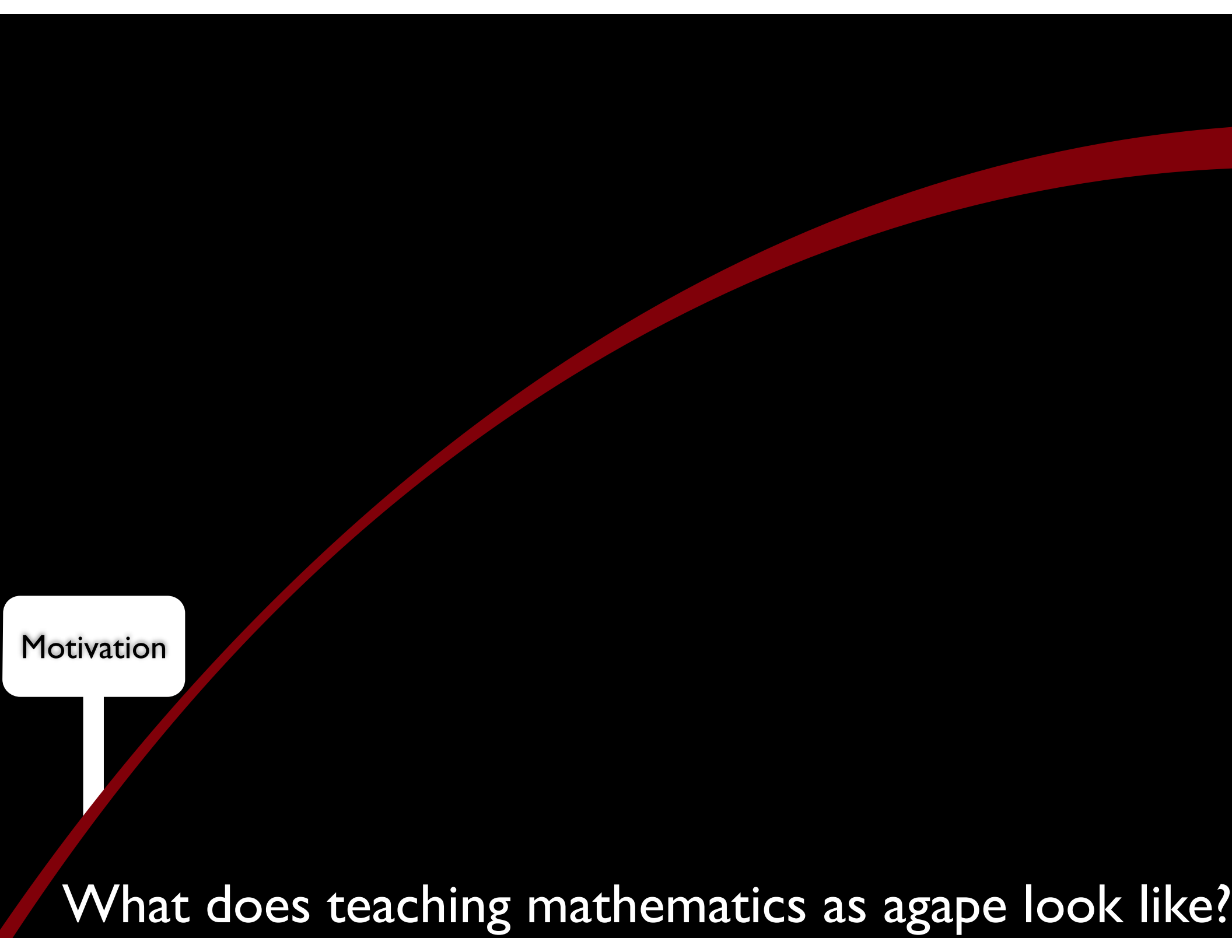


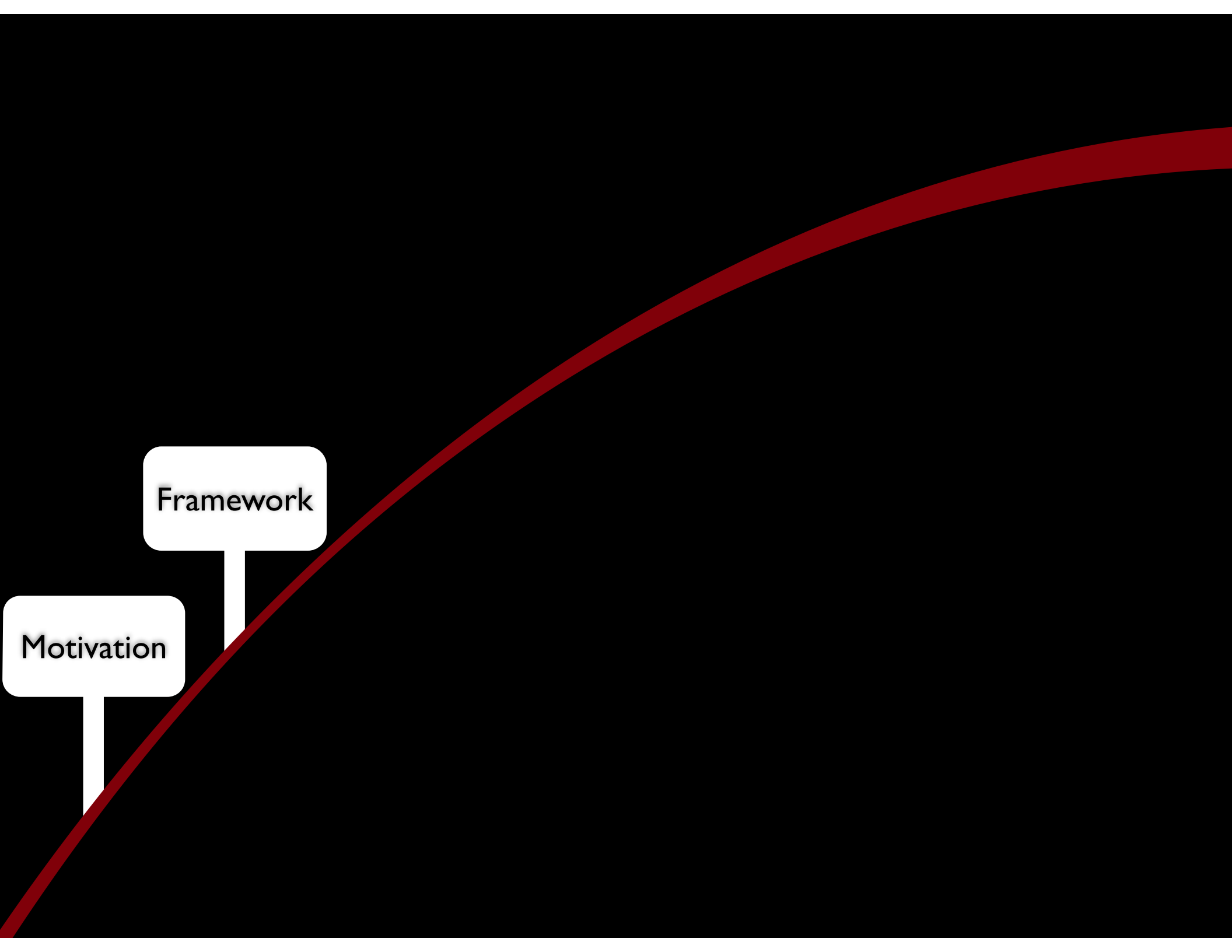

Motivation
Framework
Research Question
Methods
Findings
Implications


Motivation

Motivation

How to improve the world through the teaching and learning of mathematics?

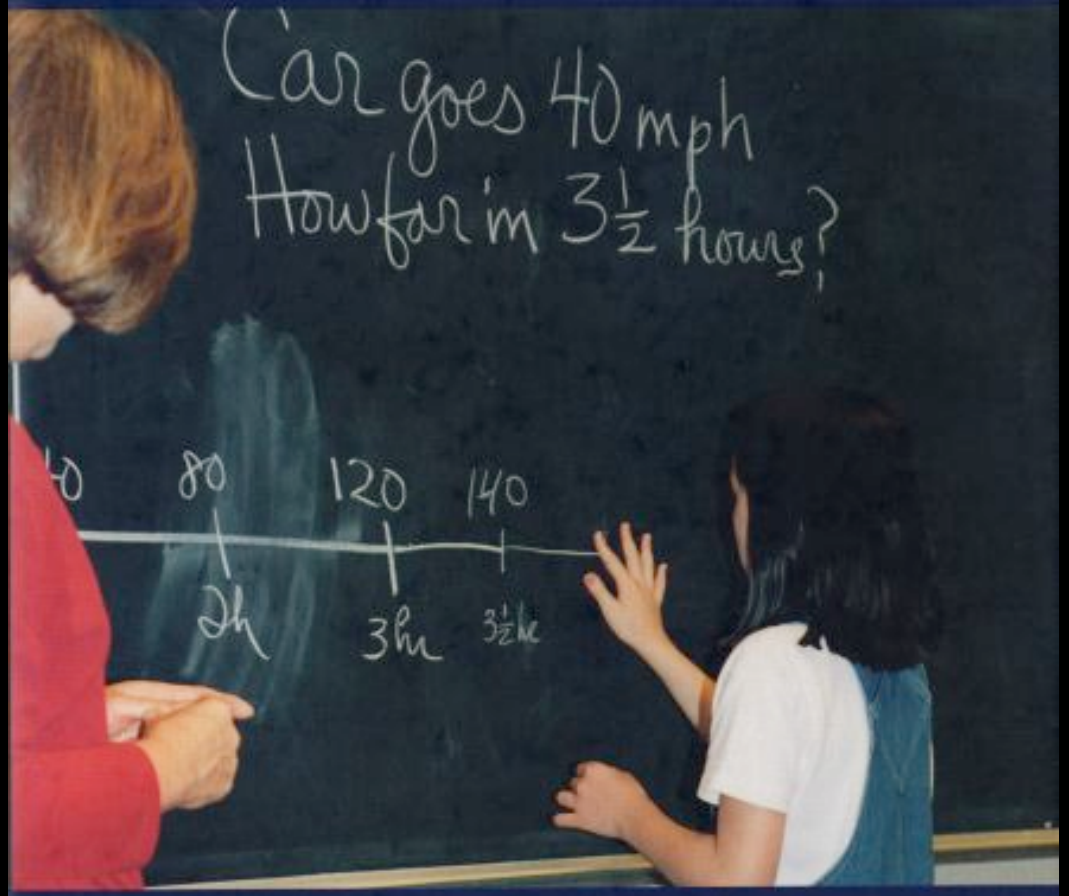

Motivation
What does teaching mathematics as agape look like?


Framework
Motivation


Mathematics
Students

Teacher

TEACHING PROBLEMS AND THE



PROBLEMS OF TEACHING

MAGDALENE LAMPERT

Problem Space of Teaching

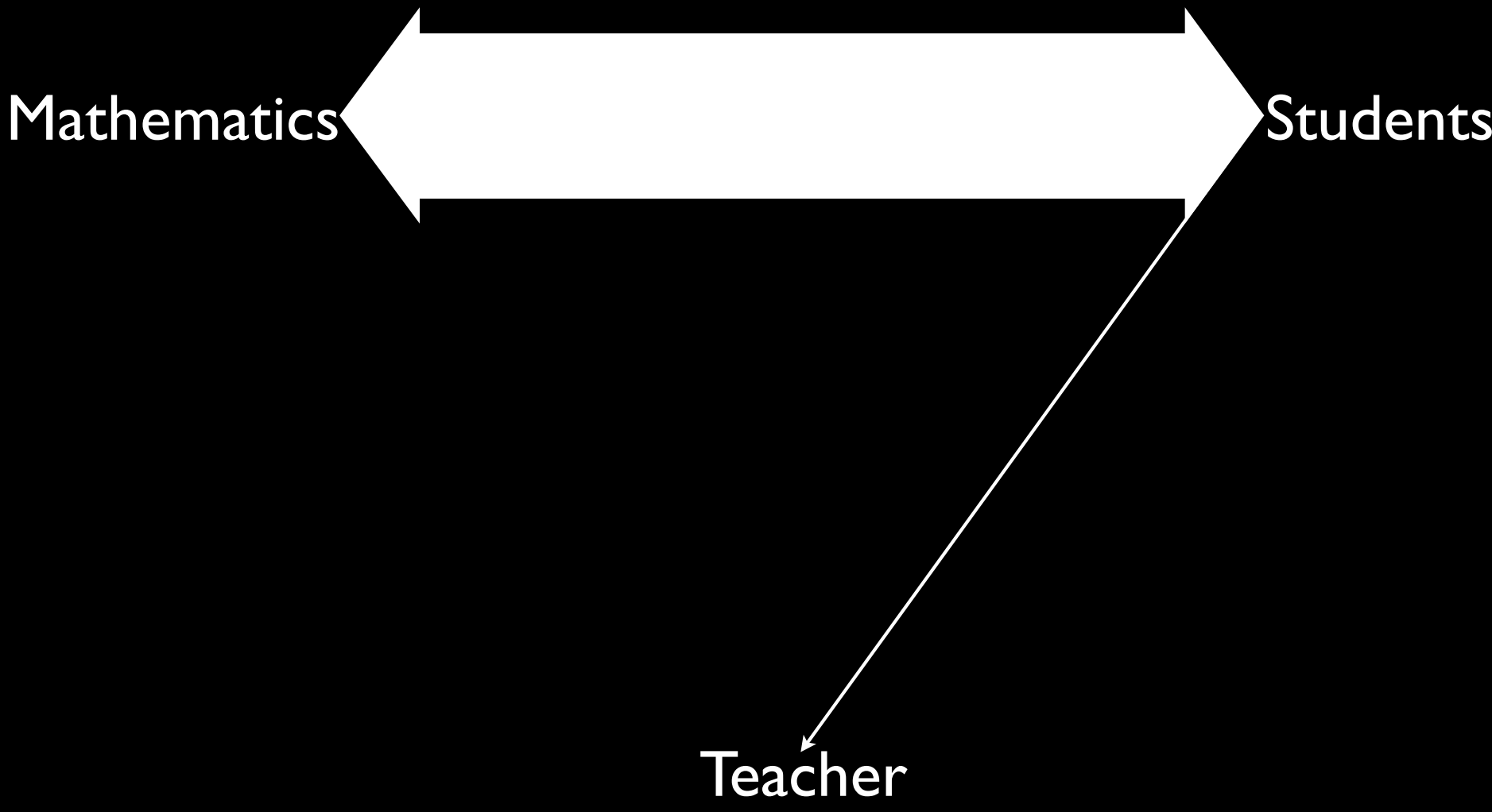
Teacher

Problem Space of Teaching

Teacher

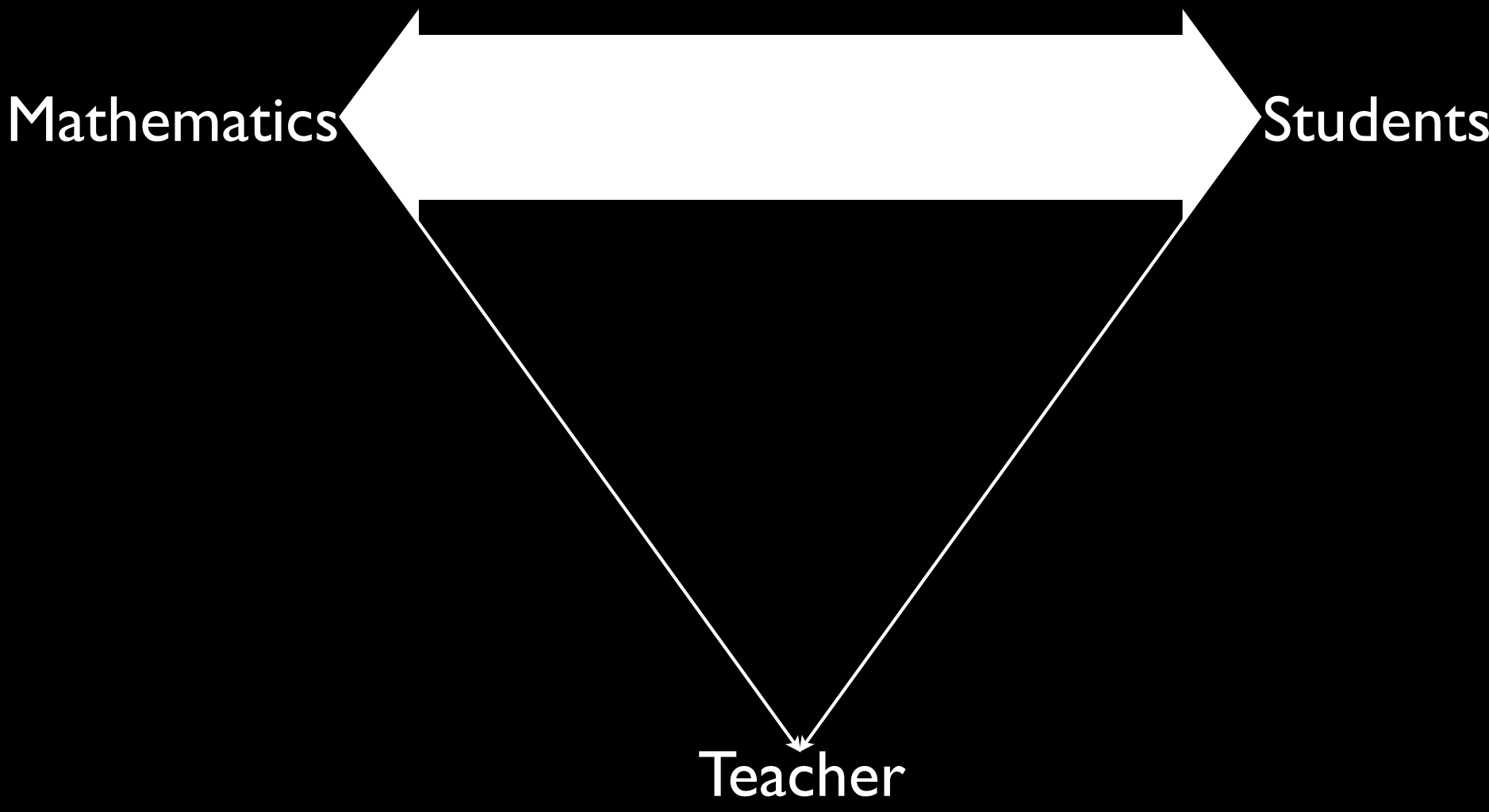
"Teaching actions proceed simultaneously in relations with students, with content, and with the connection between students and content..." (p.33)

Problem Space of Teaching



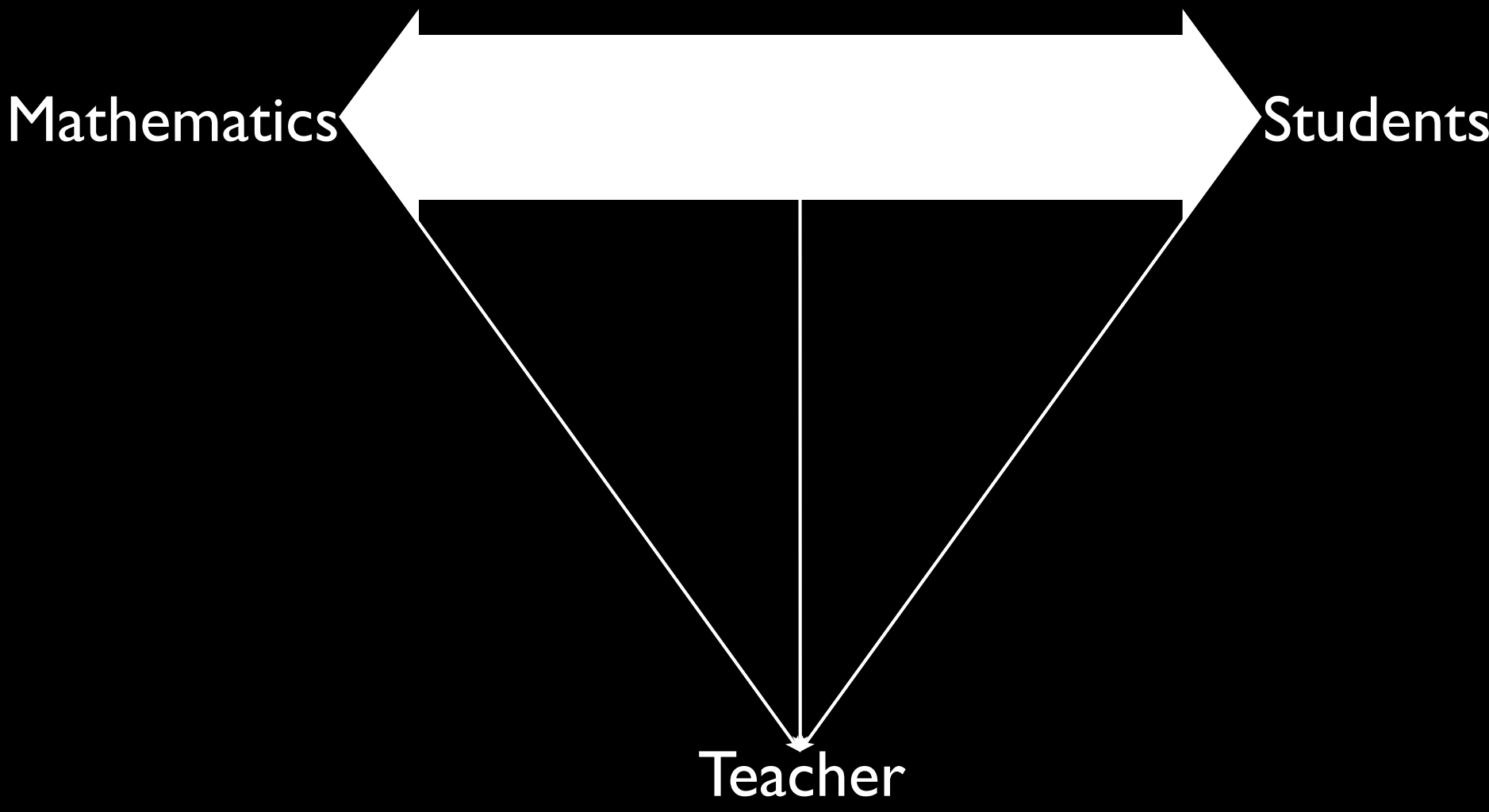
"Teaching actions proceed simultaneously in relations with students, with content, and with the connection between students and content..." (p.33)

Problem Space of Teaching



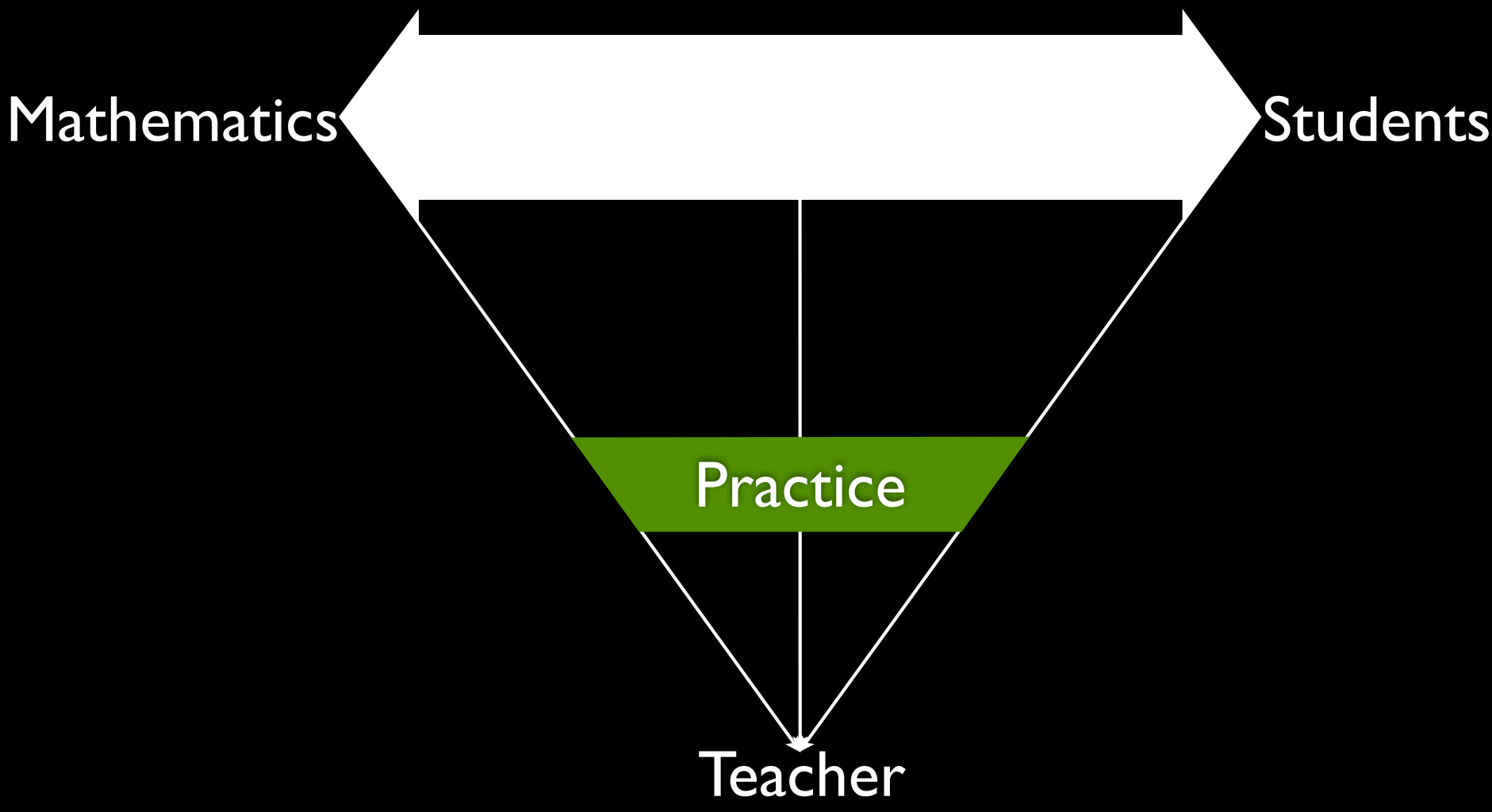
"Teaching actions proceed simultaneously in relations with students, with content, and with the connection between students and content..." (p.33)

Problem Space of Teaching

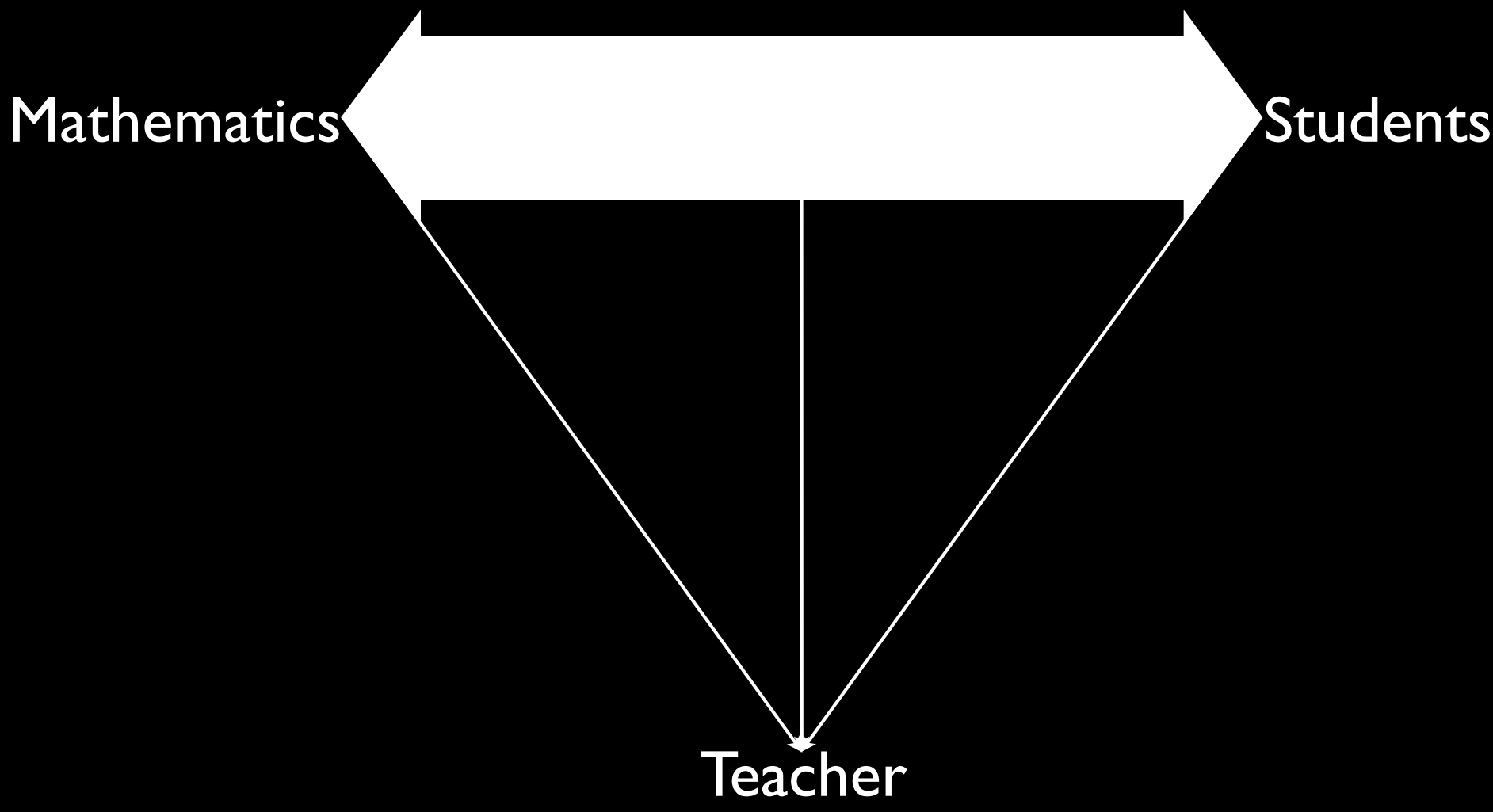


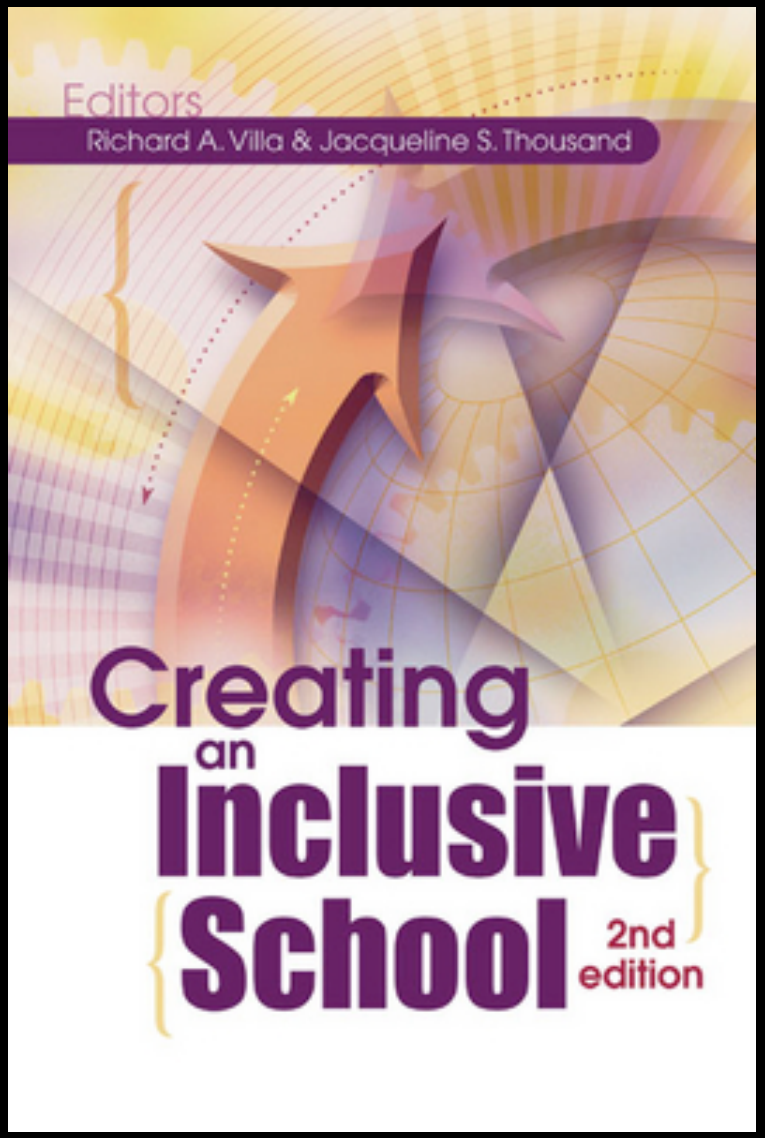
"Teaching actions proceed simultaneously in relations with students, with content, and with the connection between students and content..." (p.33)

Problem Space of Teaching



"Teaching actions proceed simultaneously in relations with students, with content, and with the connection between students and content..." (p.33)


Mathematics
Students
Teacher



Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

Learners

Who will engage in the lesson?

Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

Content

Learners

What content will the students engage with?

Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

How will the students engage with the content?

Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

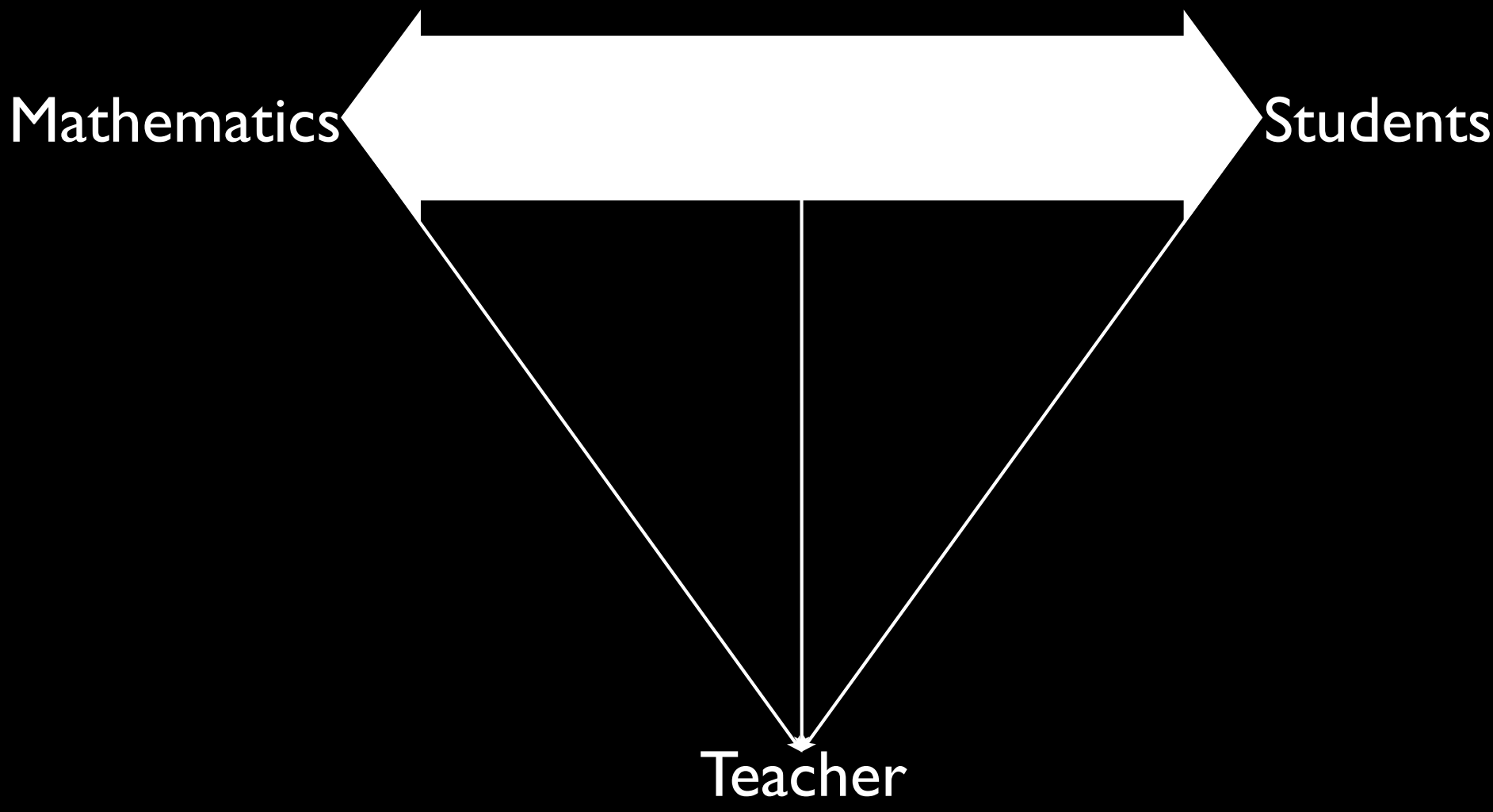
What will be accepted as evidence of the students learning?

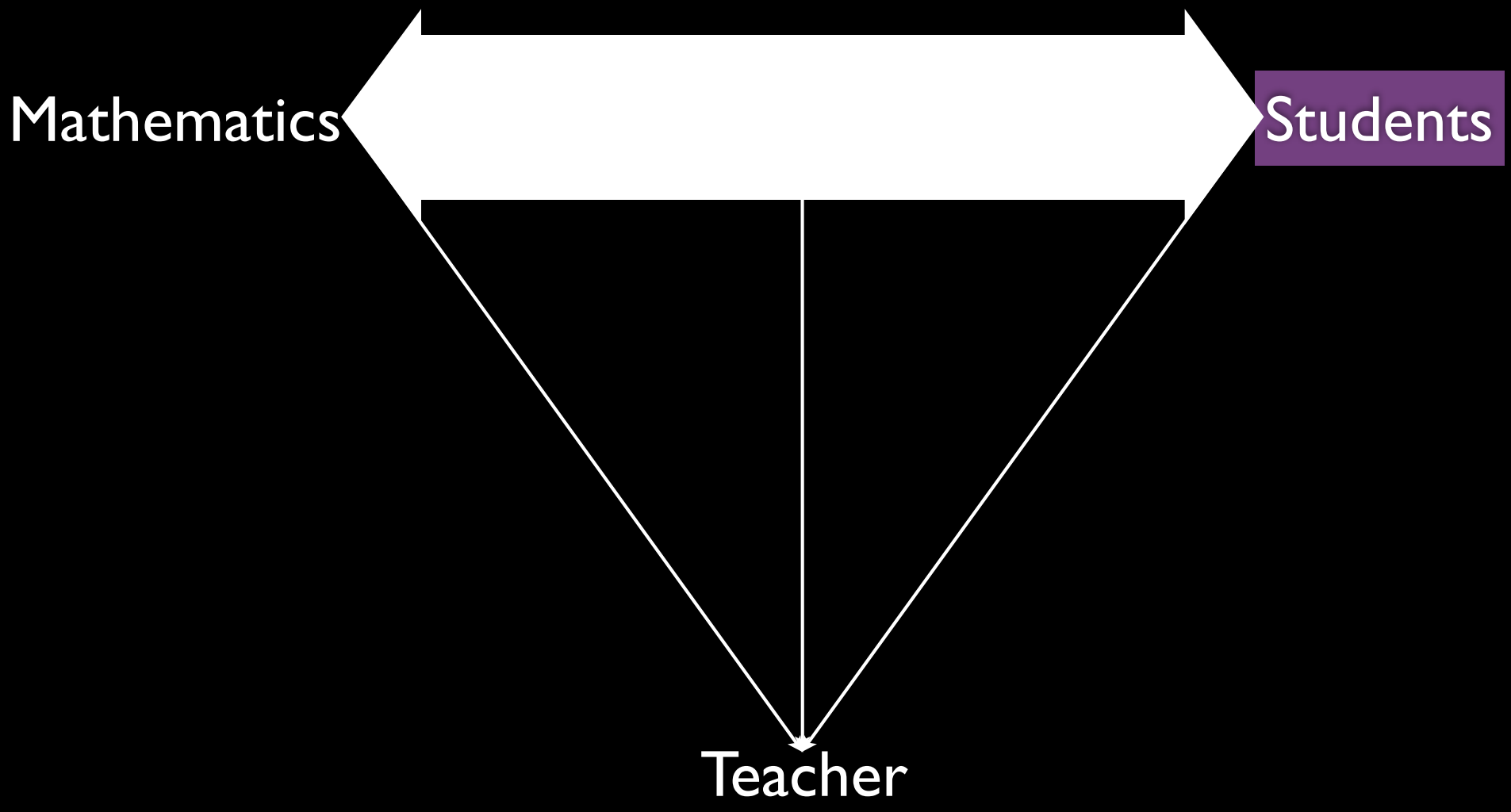
Universal Design Process

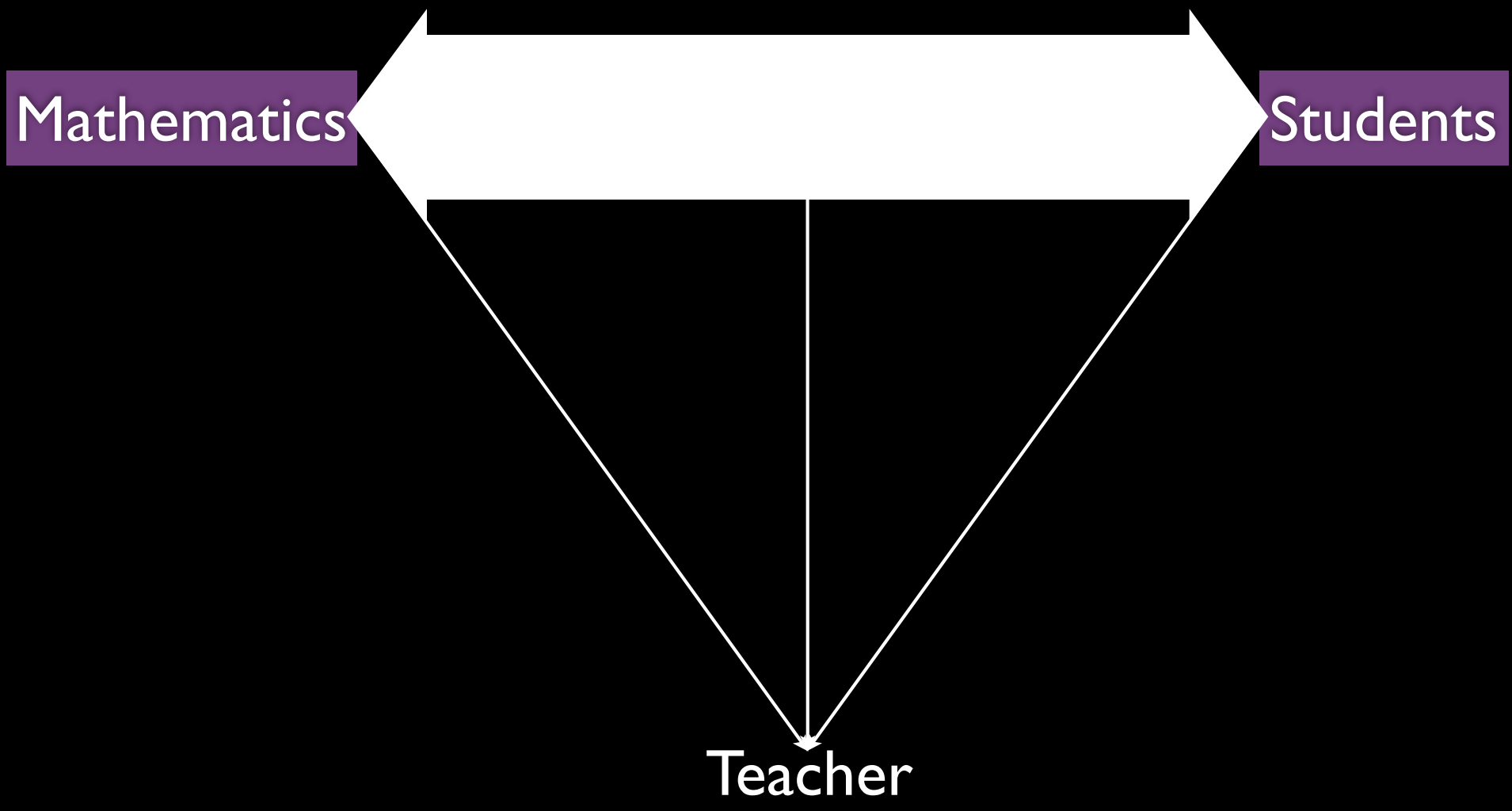
(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)

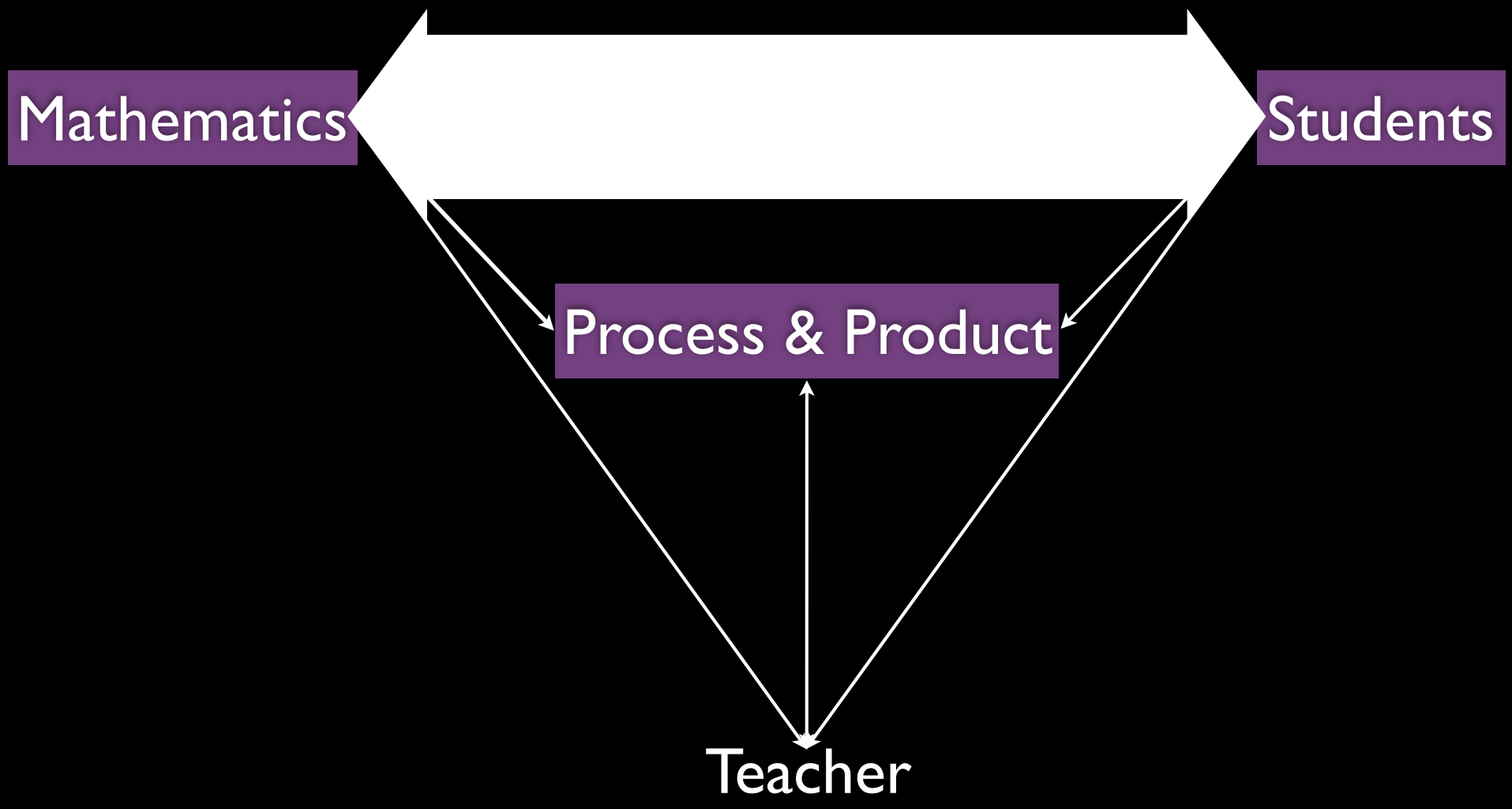
Universal Design Process

(Udvari-Solner, A., Villa, R. A., & Thousand, J. S., 2005)


Mathematics
Students
Teacher


Mathematics
Students
Teacher


Mathematics
Students
Teacher


Mathematics
Students
Process & Product
Teacher

Journal of Urban Mathematics Education
July 2013, Vol. 6, No. 1, pp. 19–27

Teaching Mathematics as Agape: Responding to Oppression with Unconditional Love

Joel Amidon
University of Mississippi

In this essay, encouraged by the critical examination of mathematics education and mathematics teacher education at the Privilege and Oppression in the Mathematics Preparation of Teacher Educators Conference, the author asks the question: What do I do from a position of power and privilege to interrupt oppression and enable everyone the opportunity and expectation of success in mathematics and life? The author proposes a response with agape (pronounced ägäpā), or unconditional love. Starting with the question What would it mean to teach mathematics as an act of unconditional love? the author theorizes an ideal relationship between students and mathematics that is functional, communal, critical, and inspirational, generated from wanting to teach mathematics as agape.

KEYWORDS: equity pedagogy, mathematics education

My decision to pursue a career in mathematics education was immediately affirmed by the images of all my white, middle-class, male, mathematics teachers who looked just like me, even down to the thick-rimmed glasses, and the occasional use of a pocket protector. Given that inequity exists in the world, there is no denying that I am sitting on the side of privilege. In response to this realization and encouraged by the critical examination of mathematics education and mathematics teacher education at the Privilege and Oppression in the Mathematics Preparation of Teacher Educators (PrOMPTE[1]) conference, I ask the question: What do I do from this position of power and privilege as a mathematics teacher, researcher, and teacher educator to interrupt oppression and enable everyone the opportunity and expectation of success in mathematics and in life? In this essay, I propose to respond with agape (pronounced ägäpā), or unconditional love. I theorize an ideal relationship between students and mathematics that is functional, communal, critical, and inspirational, starting with the question: What would it mean to teach mathematics as an act of unconditional love?

[1] Privilege and Oppression in the Mathematics Preparation of Teacher Educators (PrOMPTE) conference (funded by CREATE for STEM Institute through the Lappan-Phillips-Fitzgerald CMP 2 Innovation Grant program), Michigan State University, Battle Creek, MI, October 2012. Any opinions, findings, and conclusions or recommendations expressed herein are those of the authors and do not necessarily reflect the views of the funding agency.

JOEL AMIDON is an assistant professor in the Department of Teacher Education at the University of Mississippi, P.O. Box 1848, University, MS 38677; email: jcamidon@olemiss.edu. His research interests include advancing theories of teaching and learning and the improvement of mathematics pedagogy to address issues of equity and diversity.

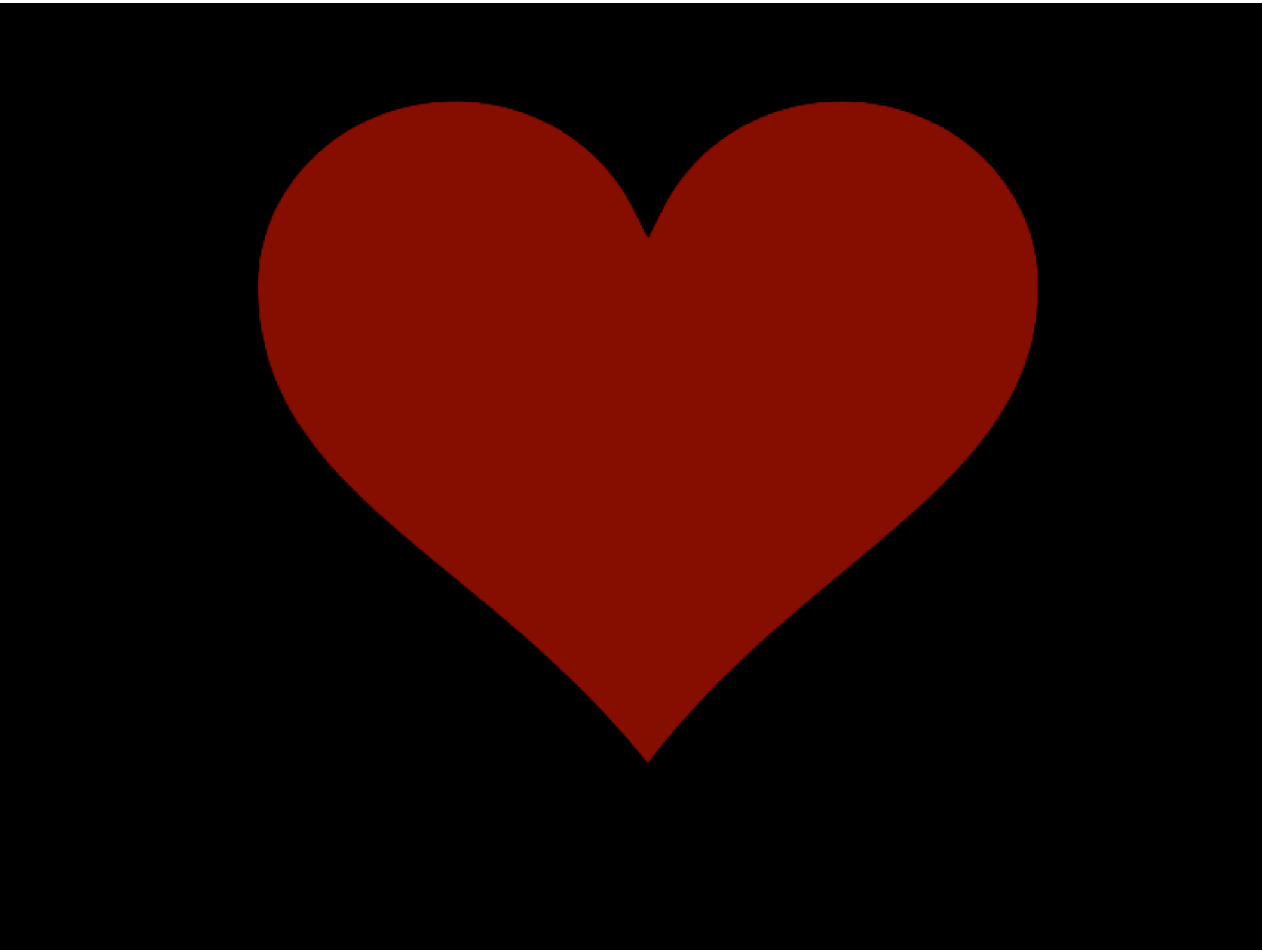
AMIDON PLANET

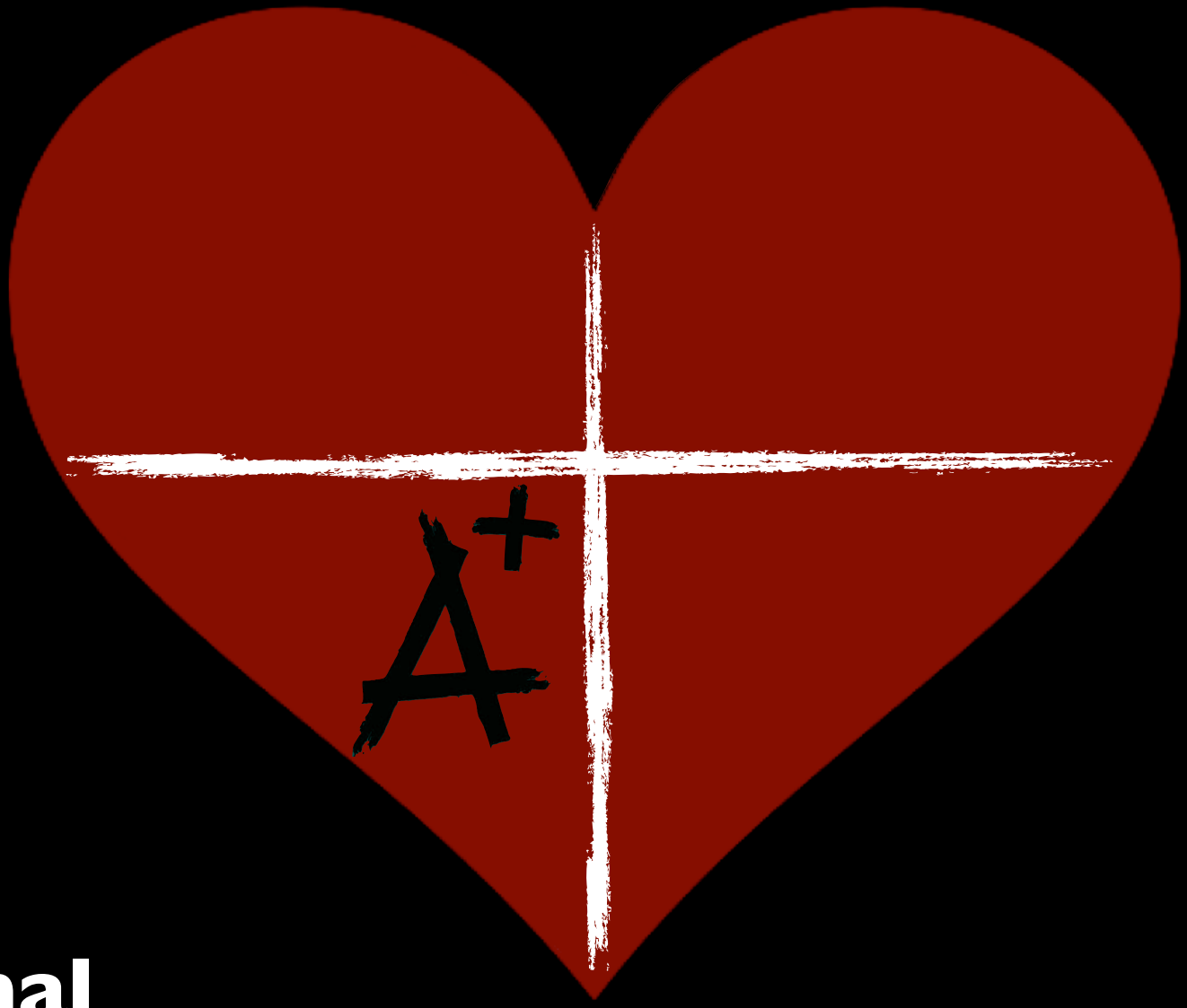
the personal domain of Joel Amidon from the University of Mississippi

NOVEMBER 15, 2013

BROADENING PERSPECTIVES AT PME-NA 2013

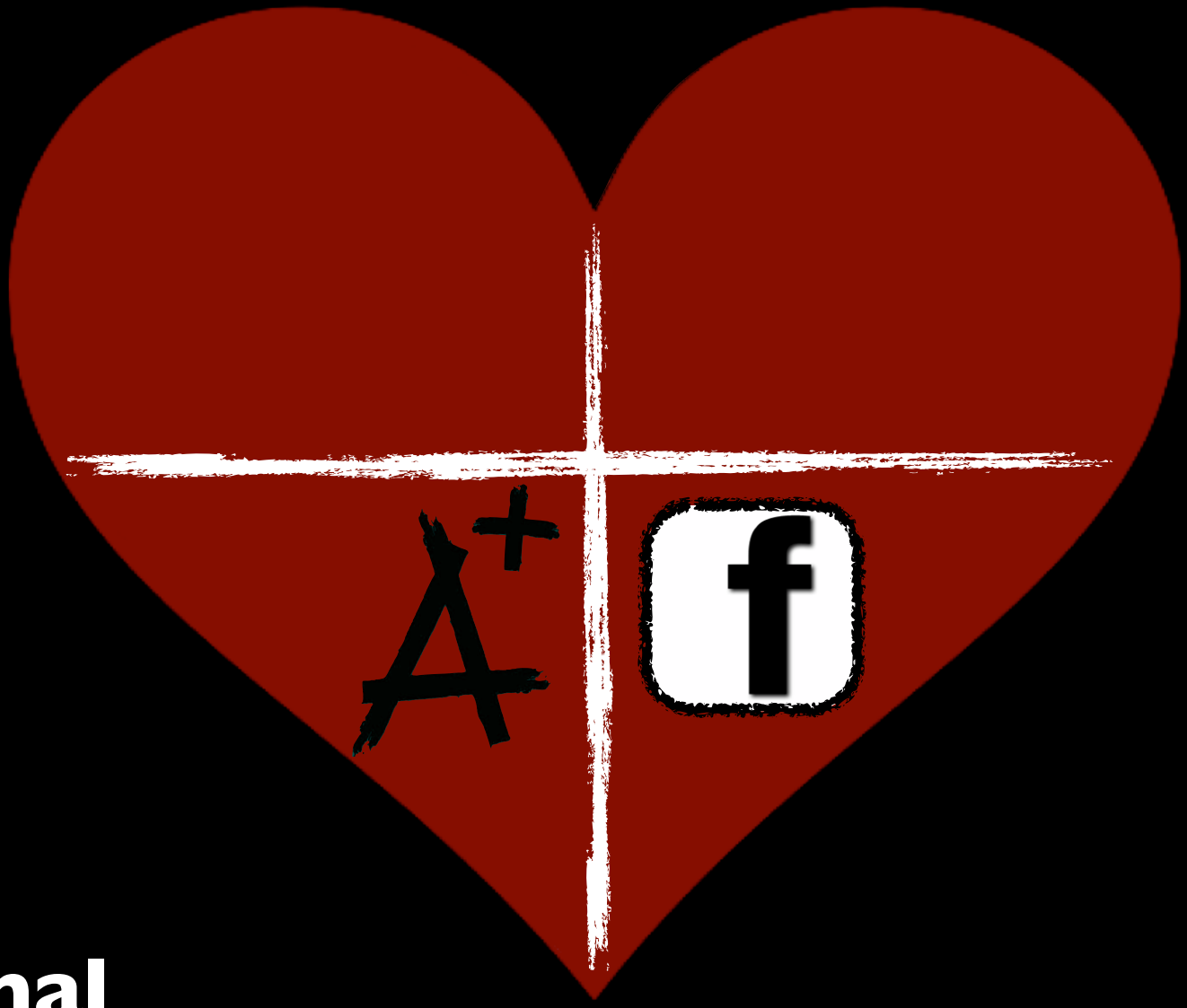
The Annual Conference for the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA) starts today. This conference is the opposite of AERA. It is small, manageable, and you can easily have conversations with some of the big names in mathematics education. They may even seek you out.





Functional

students can work with mathematics to achieve success as defined by society



Communal

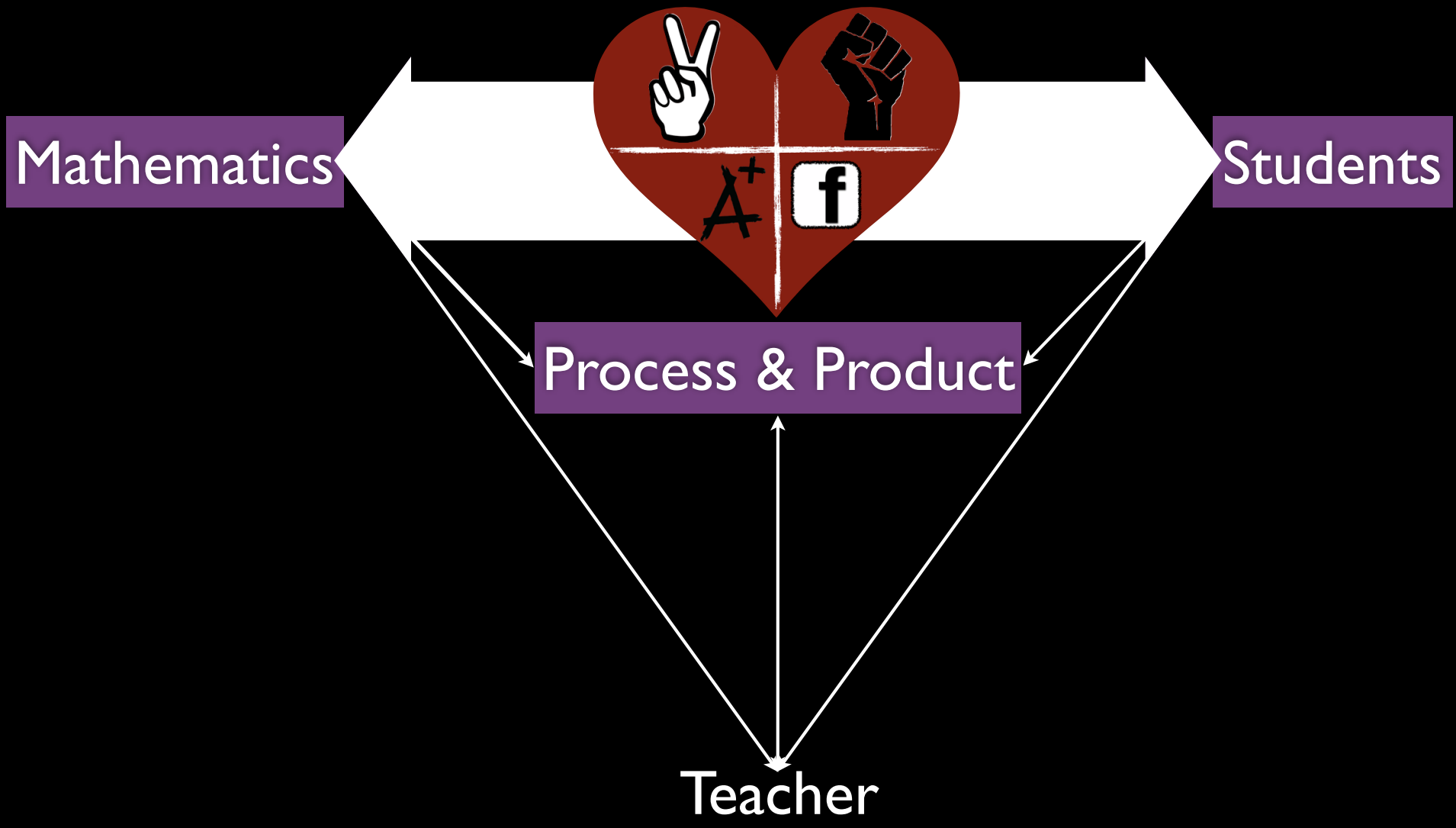
students can work with mathematics in and with the contexts and practices of the students' and the students' community

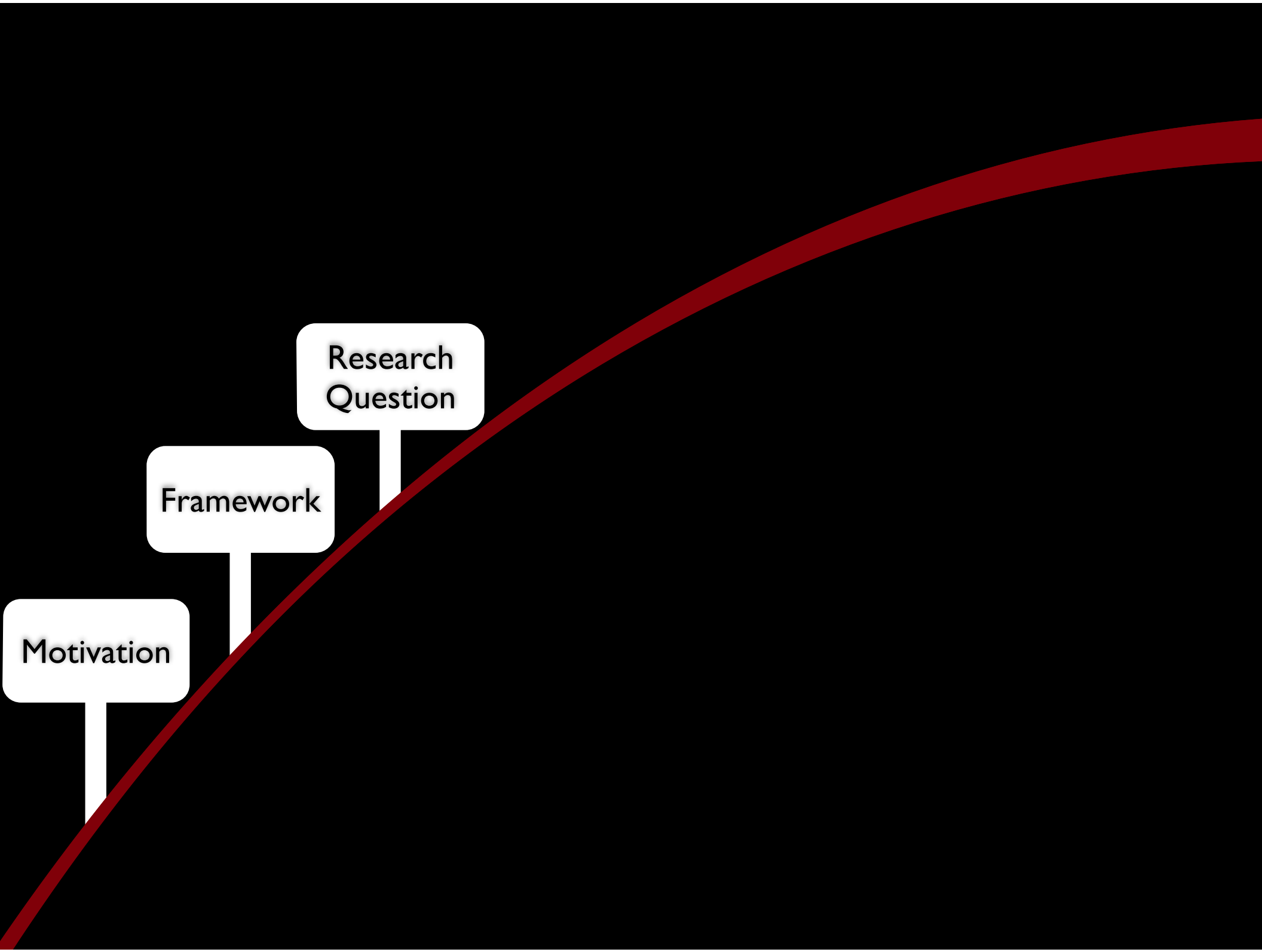
Critical

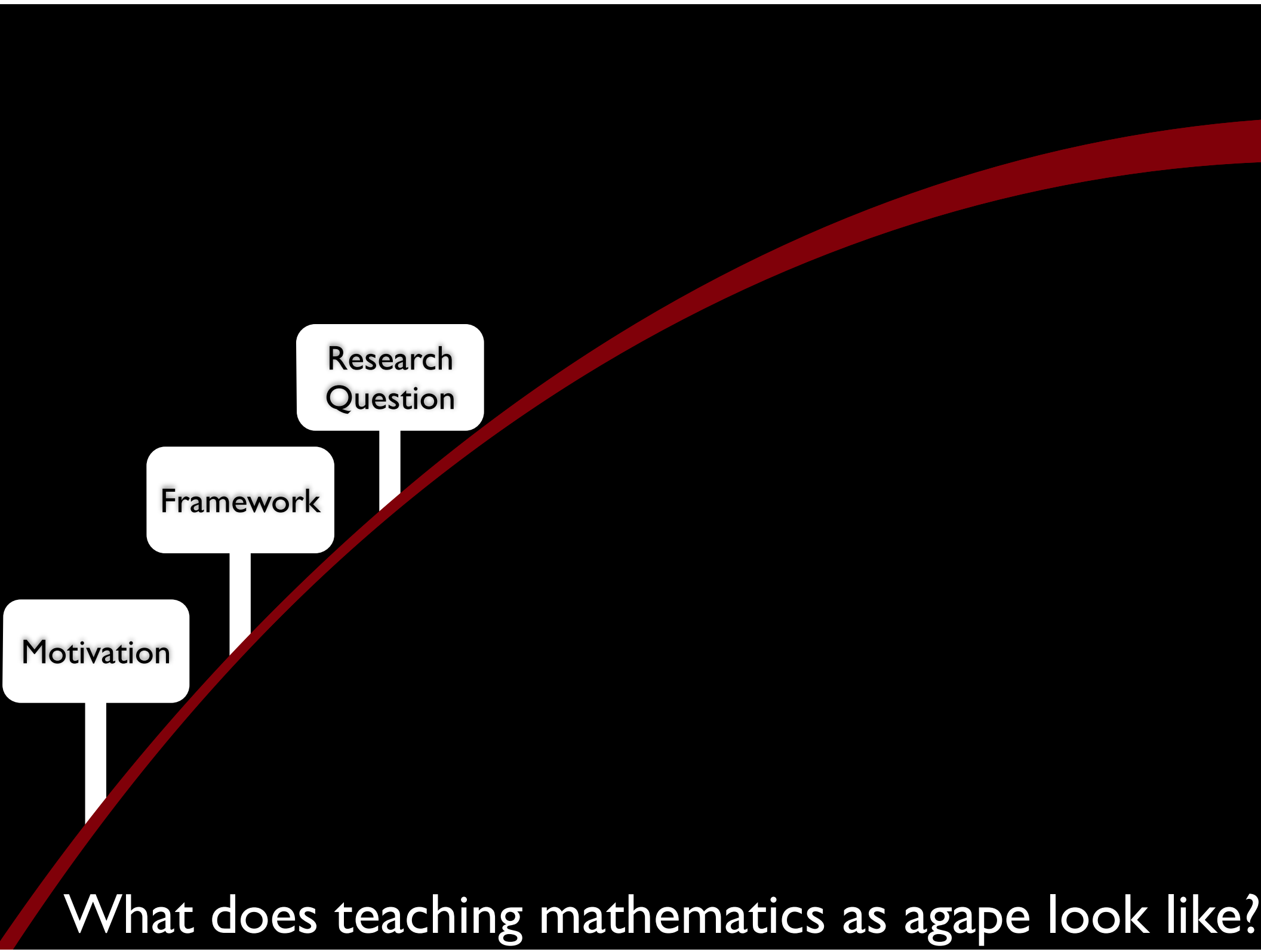
students can work with mathematics to analyze and question the world

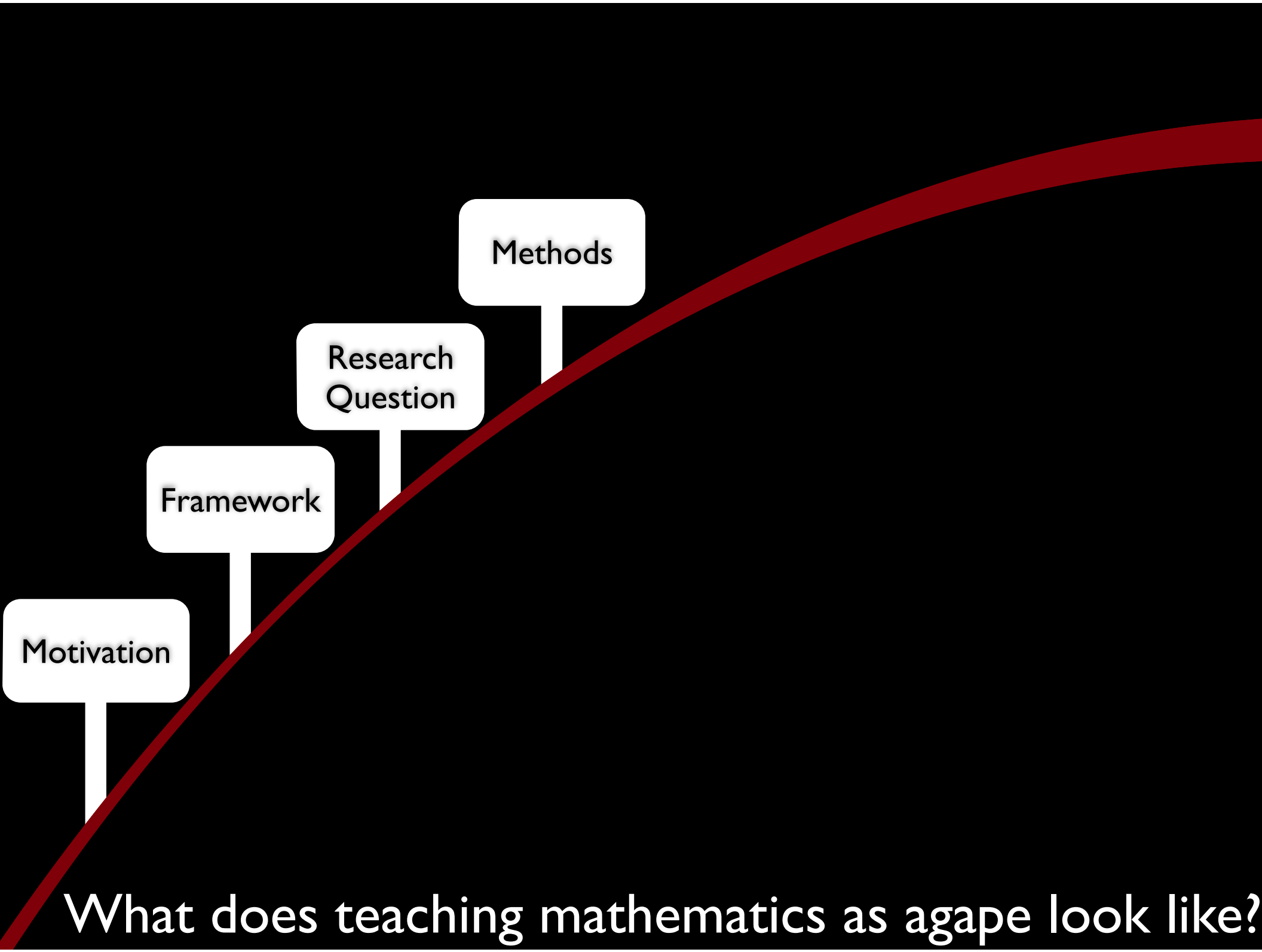
Inspirational

students can work with mathematics to vision and progress toward a better world


Mathematics
Students
Process & Product
Teacher


Research Question
Framework
Motivation


Research Question
Framework
Motivation
What does teaching mathematics as agape look like?


Methods
Research Question
Framework
Motivation
What does teaching mathematics as agape look like?

Methodology

Methodology

Self Study

Methodology

Self Study

One Class

Methodology

Self Study

One Class

Everyday

Methods

Methods

Setting

Methods

Setting

Rural High School

Methods

Setting

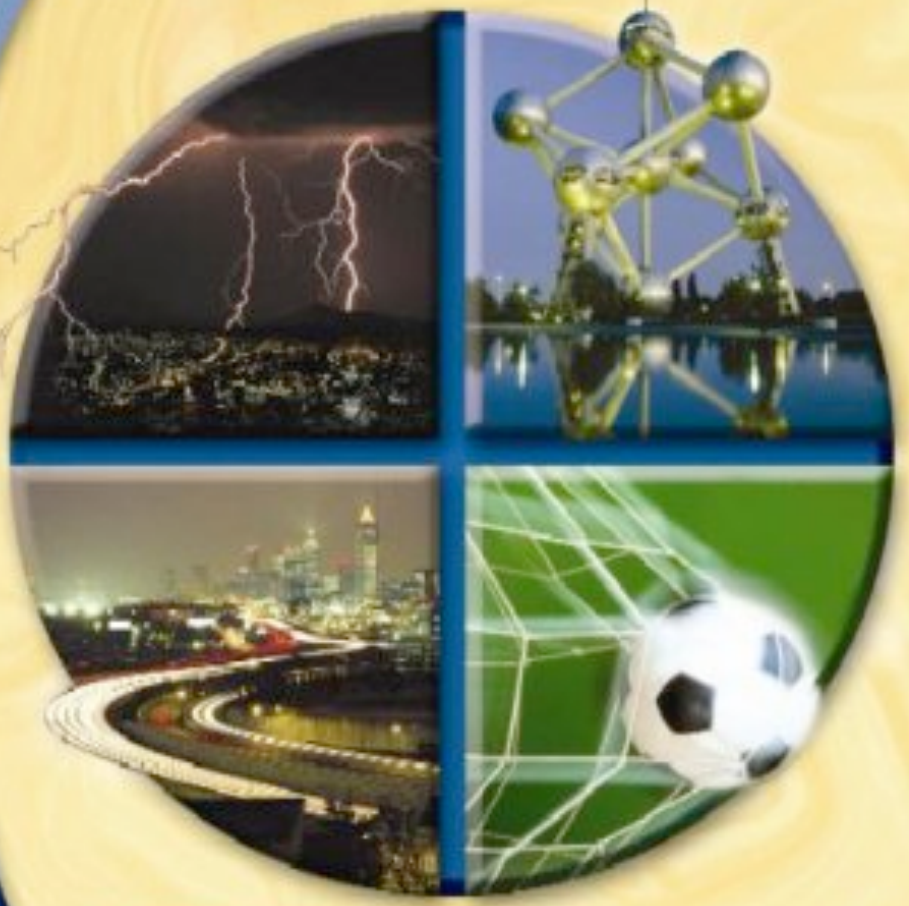
Rural High School

Core Plus Curriculum

Course 1

Core-Plus Mathematics

Contemporary Mathematics in Context



- Algebra and Functions
- Geometry and Trigonometry
- Statistics and Probability
- Discrete Mathematics

Methods

Setting

Rural High School

Core Plus Curriculum

Integrated Mathematics I

Methods

Setting

Rural High School

Core Plus Curriculum

Integrated Mathematics I

Inclusive Classroom

Methods

Setting

Participants

Methods

Setting

Participants

20 Students

Methods

Setting

Participants

20 Students

Myself

Methods

Setting

Participants

20 Students

Myself

Cooperating Teacher

Methods

Setting

Participants

20 Students

Myself

Cooperating Teacher

Assistant Principal

Methods

Setting

Participants

20 Students

Myself

Critical Friends { Cooperating Teacher

Assistant Principal

Methods

Setting

Participants

Data Generation

Methods

Setting

Participants

Data Generation

Teacher Journal

Methods

Setting

Participants

Data Generation

Teacher Journal

Student Journals

Methods

Setting

Participants

Data Generation

Teacher Journal

Student Journals

Student Work

Teacher Journal

Student Journals

Student Work

Teacher Journal

83 class periods

Student Journals

Student Work

Teacher Journal	83 class periods
Student Journals	14 entries
Student Work	

Teacher Journal	83 class periods
Student Journals	14 entries
Student Work	64 daily assignments
	10 summative assessments
	12 items of class work

Methods

Setting

Participants

Data Generation

Data Analysis

Methods

Setting

Participants

Data Generation

Data Analysis

Computer Tools

Methods

Setting

Participants

Data Generation

Data Analysis

Computer Tools

Cycles of Coding

0 Cycle

0 Cycle

"taking off from the data"
initial coding

0 Cycle

"taking off from the data"
initial coding

1 Cycle

0 Cycle	“taking off from the data” initial coding
1 Cycle	Based on Framework and facets of the relationship implied by teaching math as agape provisional coding

Relationship	Functional	Communal	Critical	Inspirational
Students - Math	Students work with mathematics to achieve success as defined by society	Students work with mathematics within the contexts and practices of the local community	Students work with mathematics to analyze and question the world	Students work with mathematics to vision and strive toward a better world
Students- Teacher	Students work with the teacher to achieve success as defined by society	Students work with the teacher within the contexts and practices of the local community	Students work with the teacher to analyze and question the world	Students work with the teacher to vision and strive toward a better world
Teacher- Math	Teacher works with mathematics to achieve success as defined by society	Teacher works with mathematics within the contexts and practices of the local community	Teacher works with mathematics to analyze and question the world	Teacher works with mathematics to vision and strive toward a better world
Teacher - (Students - Math)	Teacher works with the relationship between students and mathematics to achieve success as defined by society	Teacher works with the relationship between students and mathematics within the contexts and practices of the local community	Teacher works with the relationship between students and mathematics to analyze and question the world	Teacher works with the relationship between students and mathematics to vision and strive toward a better world

Relationship	Functional	Communal	Critical	Inspirational
Students - Math	Students work with mathematics to achieve success as defined by society	Students work with mathematics within the contexts and practices of the local community	Students work with mathematics to analyze and question the world	Students work with mathematics to vision and strive toward a better world
Students- Teacher	Students work with the teacher to achieve success as defined by society	Students work with the teacher within the contexts and practices of the local community	Students work with the teacher to analyze and question the world	Students work with the teacher to vision and strive toward a better world
Teacher- Math	Teacher works with mathematics to achieve success as defined by society	Teacher works with mathematics within the contexts and practices of the local community	Teacher works with mathematics to analyze and question the world	Teacher works with mathematics to vision and strive toward a better world
Teacher - (Students - Math)	Teacher works with the relationship between students and mathematics to achieve success as defined by society	Teacher works with the relationship between students and mathematics within the contexts and practices of the local community	Teacher works with the relationship between students and mathematics to analyze and question the world	Teacher works with the relationship between students and mathematics to vision and strive toward a better world
Students - Students	Students work with students to achieve success as defined by society	Students work with students within the contexts and practices of the local community	Students work with students to analyze and question the world	Students work with students to vision and strive toward a better world.

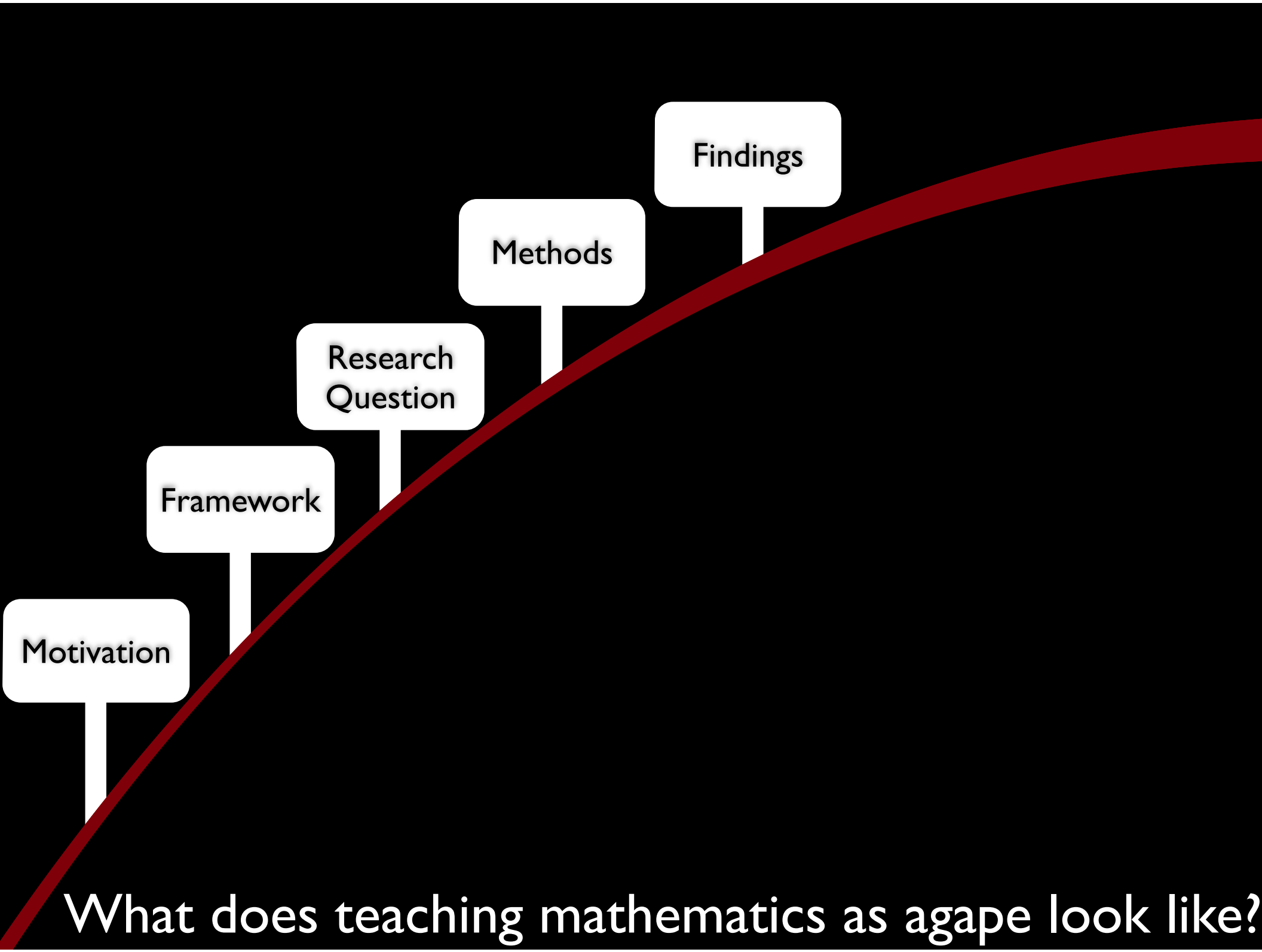
Relationship	Functional	Communal	Critical	Inspirational
Students - Math	Students work with mathematics to achieve success as defined by society	Students work with mathematics within the contexts and practices of the local community	Students work with mathematics to analyze and question the world	Students work with mathematics to vision and strive toward a better world
Students- Teacher	Students work with the teacher to achieve success as defined by society	Students work with the teacher within the contexts and practices of the local community	Students work with the teacher to analyze and question the world	Students work with the teacher to vision and strive toward a better world
Teacher- Math	Teacher works with mathematics to achieve success as defined by society	Teacher works with mathematics within the contexts and practices of the local community	Teacher works with mathematics to analyze and question the world	Teacher works with mathematics to vision and strive toward a better world
Teacher - (Students - Math)	Teacher works with the relationship between students and mathematics to achieve success as defined by society	Teacher works with the relationship between students and mathematics within the contexts and practices of the local community	Teacher works with the relationship between students and mathematics to analyze and question the world	Teacher works with the relationship between students and mathematics to vision and strive toward a better world
Students - Students	Students work with students to achieve success as defined by society	Students work with students within the contexts and practices of the local community	Students work with students to analyze and question the world	Students work with students to vision and strive toward a better world.

	Functional	Communal	Critical	Inspirational
Students-Teacher	Equipping	Wal-Mart Wrestling	Extreme World	Drum Major Success
Teacher-Math	Curriculum Analysis	Over-Contexting	Food Pantry	Badger Ammo
Teacher-(Students-Math)	Process of Celebrating	Base Groups	Wealth Distribution Hershey Kiss	Taste of Calculus Cost of War
Students-Students	Cheating	Socializing	Homework Investigation	Asset Inventory

0 Cycle	“taking off from the data” initial coding
1 Cycle	Based on Framework and facets of the relationship implied by teaching math as agape provisional coding

0 Cycle	“taking off from the data” initial coding
1 Cycle	Based on Framework and facets of the relationship implied by teaching math as agape provisional coding
2 Cycle	

0 Cycle	“taking off from the data” initial coding
1 Cycle	Based on Framework and facets of the relationship implied by teaching math as agape provisional coding
2 Cycle	Merging of the 0 Cycle and the 1 Cycle



What does teaching mathematics as agape look like?

What does teaching mathematics as agape look like?

What does teaching mathematics as agape look like?

Turning...

disruptions in teaching practice were manipulated into opportunities to facilitate a relationship between students and mathematics

Turning...

...socialization to learning asset

During the experiment I noticed Grace tell Rory that she liked her boots. It was at a time when both groups were paused for action and I asked Grace if I could use that instance as an example tomorrow. I want the class to know that I want them to be social. That I know that they need to be social but I want them to pick appropriate times to do it.

Week 2 Teacher Journal

During the experiment I noticed Grace tell Rory that she liked her boots. It was at a time when both groups were paused for action and I asked Grace if I could use that instance as an example tomorrow. I want the class to know that I want them to be social. That I know that they need to be social but I want them to pick appropriate times to do it.

Week 2 Teacher Journal

I want students to practice articulating their thinking. They have a strength in being social and I want them to use it while working with mathematics.

Week 18 Teacher Journal

	Functional	Communal	Critical	Inspirational
Students-Teacher				
Teacher-Math				
Teacher-(Students-Math)				
Students-Students				

	Functional	Communal	Critical	Inspirational
Students-Teacher				
Teacher-Math				
Teacher-(Students-Math)				
Students-Students		Socializing		

	Functional	Communal	Critical	Inspirational
Students-Teacher		Shift in perception		
Teacher-Math				
Teacher-(Students-Math)				
Students-Students		Socializing		

	Functional	Communal	Critical	Inspirational
Students-Teacher		Shift in perception		
Teacher-Math				
Teacher-(Students-Math)	Cooperative processes & products			
Students-Students		Socializing		

Turning...

...disrupted lecture to lesson structure

	Functional	Communal	Critical	Inspirational
Students-Teacher				
Teacher-Math				
Teacher-(Students-Math)				
Students-Students				

	Functional	Communal	Critical	Inspirational
Students-Teacher				
Teacher-Math				
Teacher-(Students-Math)				
Students-Students		Socializing		

	Functional	Communal	Critical	Inspirational
Students-Teacher		Dislike of Lesson Format		
Teacher-Math				
Teacher-(Students-Math)				
Students-Students		Socializing		

	Functional	Communal	Critical	Inspirational
Students-Teacher		Student Leadership Styles		
Teacher-Math				
Teacher-(Students-Math)				
Students-Students		Socializing		

	Functional	Communal	Critical	Inspirational
Students-Teacher		Student Leadership Styles		
Teacher-Math				
Teacher-(Students-Math)	Lesson Structure			
Students-Students		Socializing		

Turning...

...disgruntled students to investigation

	Functional	Communal	Critical	Inspirational
Students-Teacher				
Teacher-Math				
Teacher-(Students-Math)				
Students-Students				

	Functional	Communal	Critical	Inspirational
Students-Teacher		Question amount of homework		
Teacher-Math				
Teacher-(Students-Math)				
Students-Students		Question amount of homework		

	Functional	Communal	Critical	Inspirational
Students-Teacher		Question amount of homework		
Teacher-Math	Knowledge of objectives			
Teacher-(Students-Math)				
Students-Students		Question amount of homework		

	Functional	Communal	Critical	Inspirational
Students-Teacher		Question amount of homework		
Teacher-Math	Knowledge of objectives			
Teacher-(Students-Math)	Investigation and assignment exploring the amount of time spent on homework			
Students-Students		Question amount of homework		

Below is the reported amount of time our class spends doing homework each day, broken up by class.

Math	English	History	Adventures in Print	Biology	Spanish	Gym	French	Agriculture	Art	Band	Total
10		5		5							20
15		10			5						30
10	5	10		10							35
20	10	5									35
15		15			10						40
15	20	10		10		1					56
15	10	20		20							65
15	20	10		5			15				65
15	15	15		15	15						75
45	10	12		15							82
15	15	15		15			15	15			90
20	15	30		15	10						90
45	25	40									110
15	25	35		10	10				20		115
25	15	30		15	7					30	122
35	15	20	10	30	20						130
25	50	25		35			15				150
25	30	120		30	10						215
15	45	90		45					30		225
15	15	120		120	15						285

The goal of the project is to:

1. Practice the objectives of the unit, which are:
   Use various graphical displays to plot data
   Interpret patterns seen in graphical displays
   Compute and interpret measures of center and variability for sets of data

2. Answer questions about the data.

3. Share your answers about the data to make this school a better place. This could be a recommendation for teachers, advice for students, guidelines for principals or parents, etc. The way you choose to share your answers can be of your choosing, letter, chart, pamphlet, computer presentation, poster, etc.

Before we do anything we need to answer the following question:

What is the purpose of homework?

Student Relationships...

Wednesday, September 1, 2010

Name_____

You have Math as a "friend" on facebook. What is a word or two that you would you use to describe your relationship status with Math?

Relationship Status:_____

Why did you choose that word (those words)?

Journal Entry from 9.1.2010

Journal Entry from 9.1.2010

Relationship Status: Single

Why did you choose that word (those words)?

I chose those words because I'm not good at math and math is borrying to me.

Journal Entry from 9.1.2010

Relationship Status: single

Why did you choose that word (those words)?

I chose those words because im not good at math and math is borrying to me.

Relationship Status: emenies

Why did you choose that word (those words)?

because I dont like math and im not good at it.

Journal Entry from 9.1.2010

Relationship Status: single

Why did you choose that word (those words)?

I chose those words because im not good at math and math is borrying to me.

Relationship Status: emenies

Why did you choose that word (those words)?

because I dont like math and im not good at it.

Journal Entry from 12.3.2010

Journal Entry from 9.1.2010

Relationship Status: single

Why did you choose that word (those words)?

I chose those words because I'm not good at math and math is borrying to me.

Relationship Status: emenies

Why did you choose that word (those words)?

because I dont like math and im not good at it.

Journal Entry from 12.3.2010

Relationship Status: Very Good!

Please use a few sentences to explain, why you chose that word (those words)?

Because I'm finally feeling like I'm understanding the next unit very, very well. I'm just loving understanding this unit!

Journal Entry from 9.1.2010

Relationship Status: Single

Why did you choose that word (those words)?

I chose those words because I'm not good at math and math is borrying to me.

Relationship Status: emenies

Why did you choose that word (those words)?

because I dont like math and im not good at it.

Journal Entry from 12.3.2010

Relationship Status: Very Good!

Please use a few sentences to explain, why you chose that word (those words)?

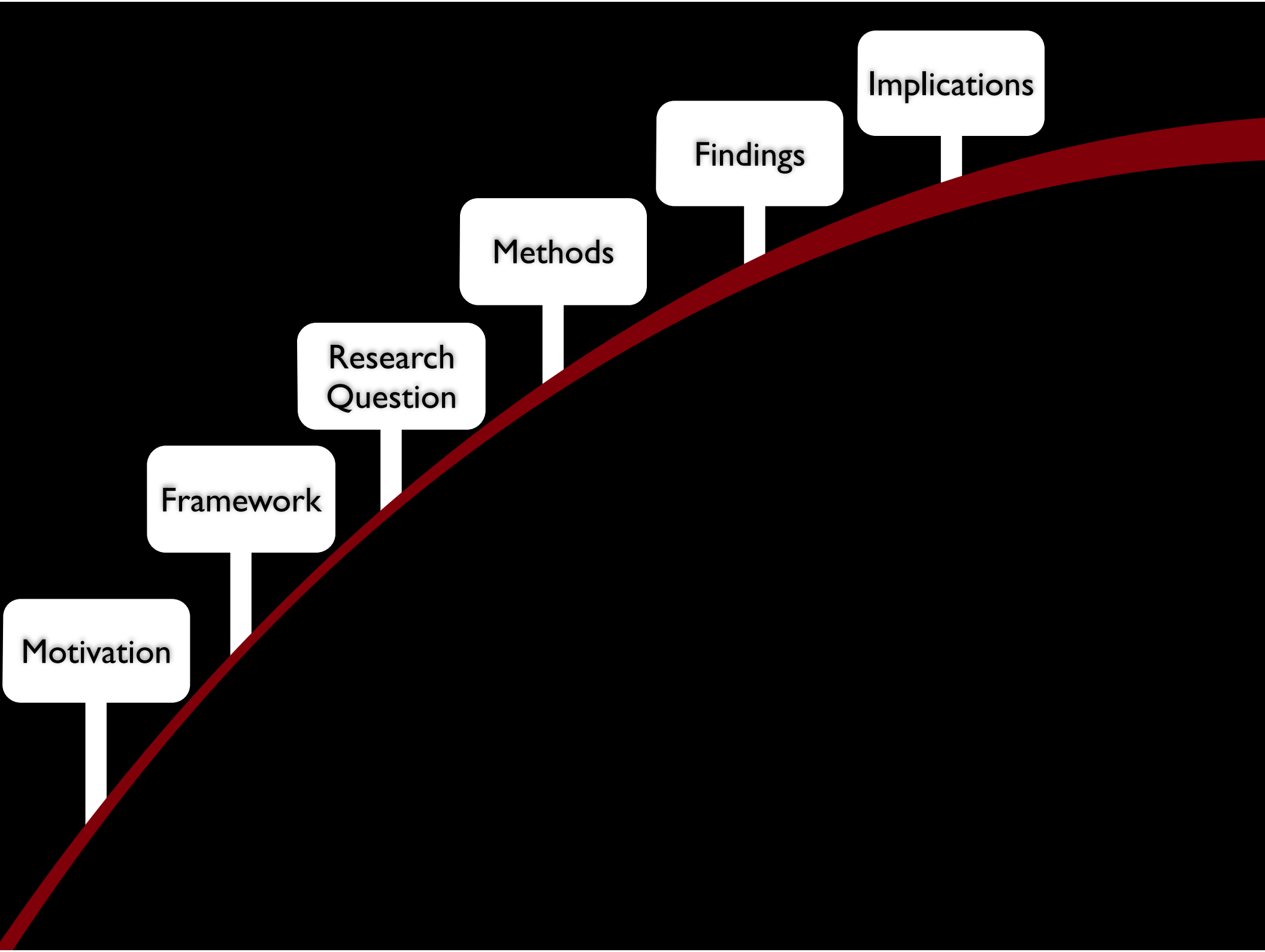
Because I'm finally feeling like I'm understanding the next unit very, very well. I'm just loving understanding this unit!

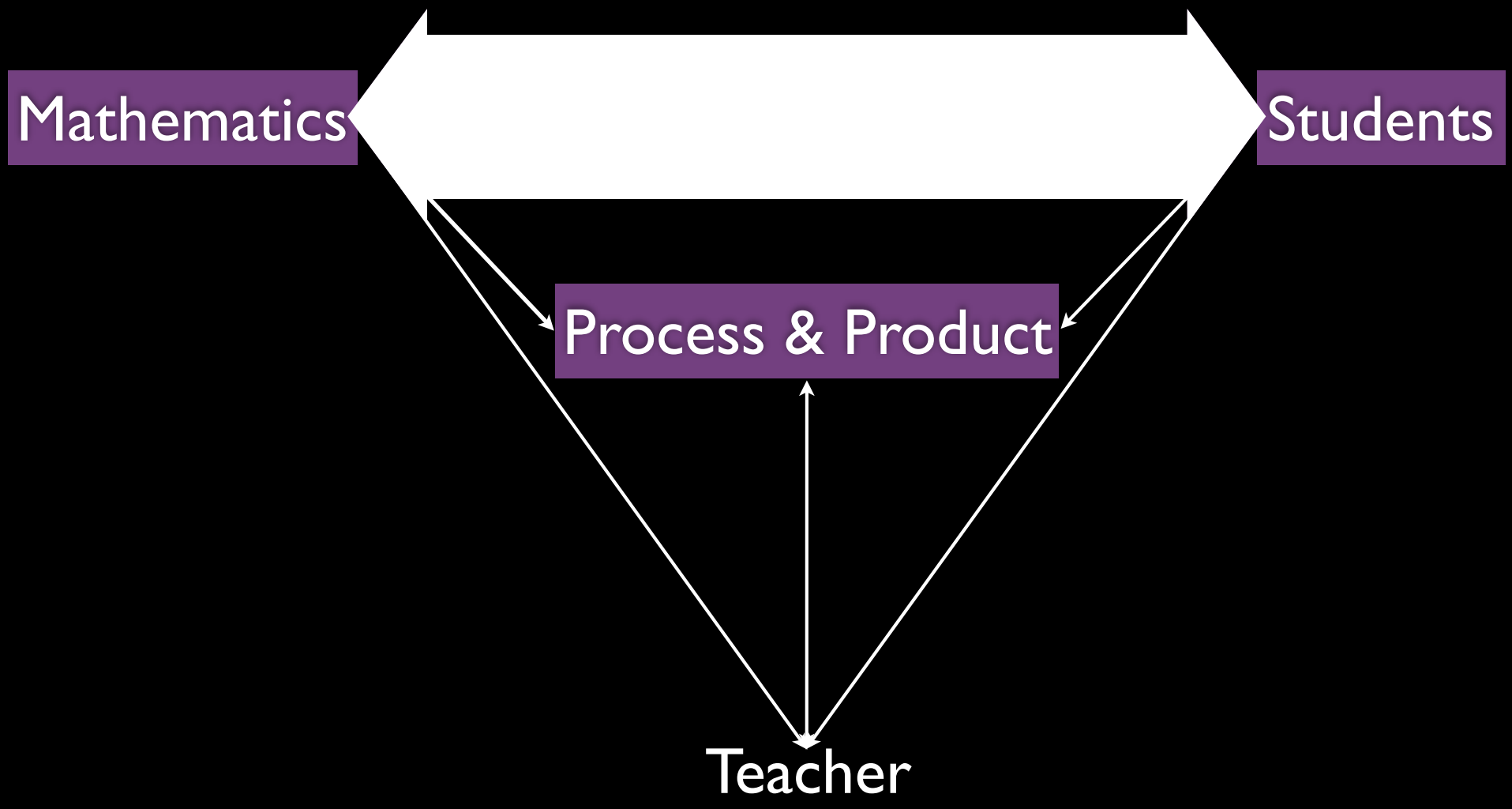
Relationship Status: Horriable

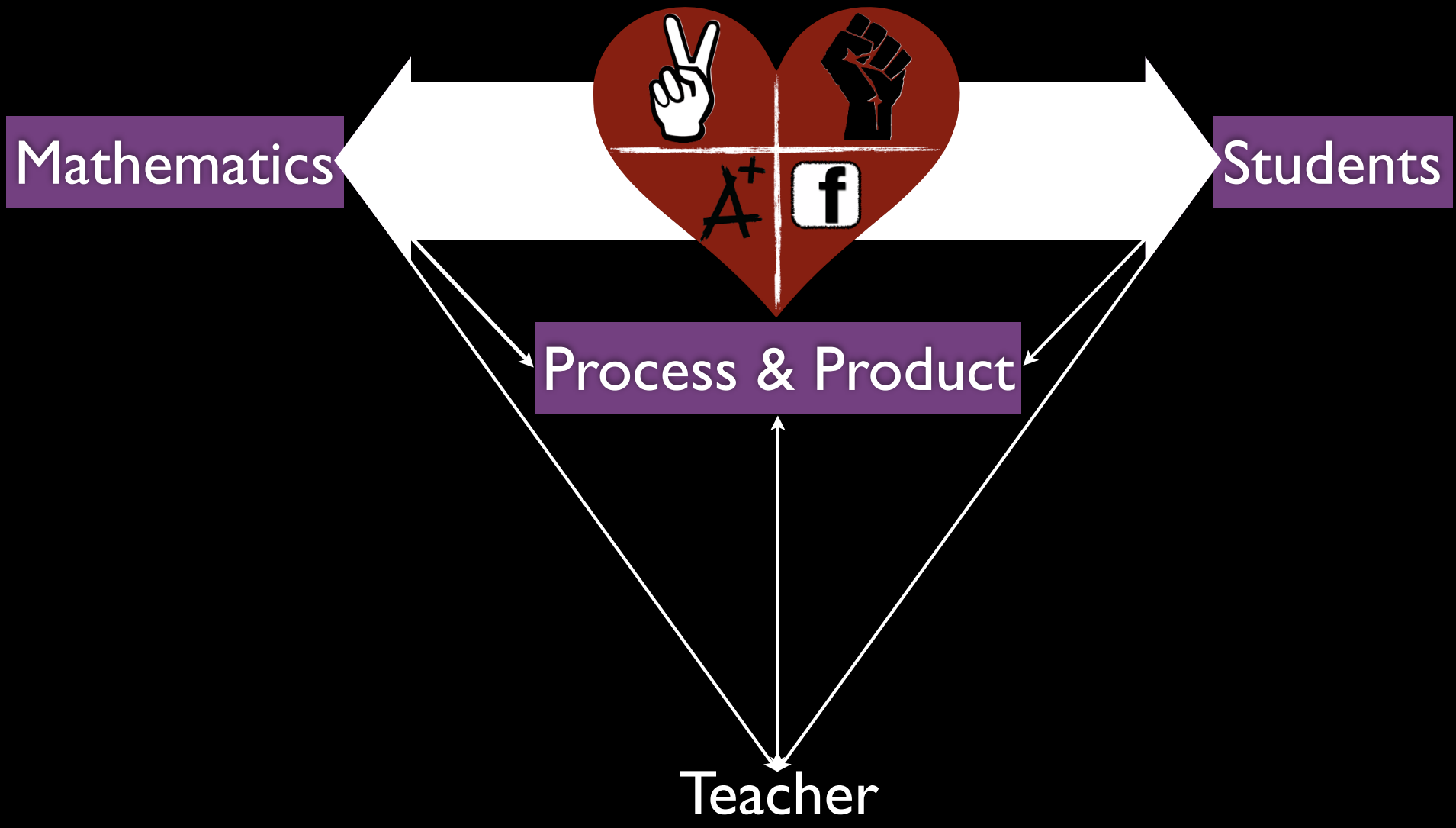
Please use a few sentences to explain, why you chose that word (those words)?

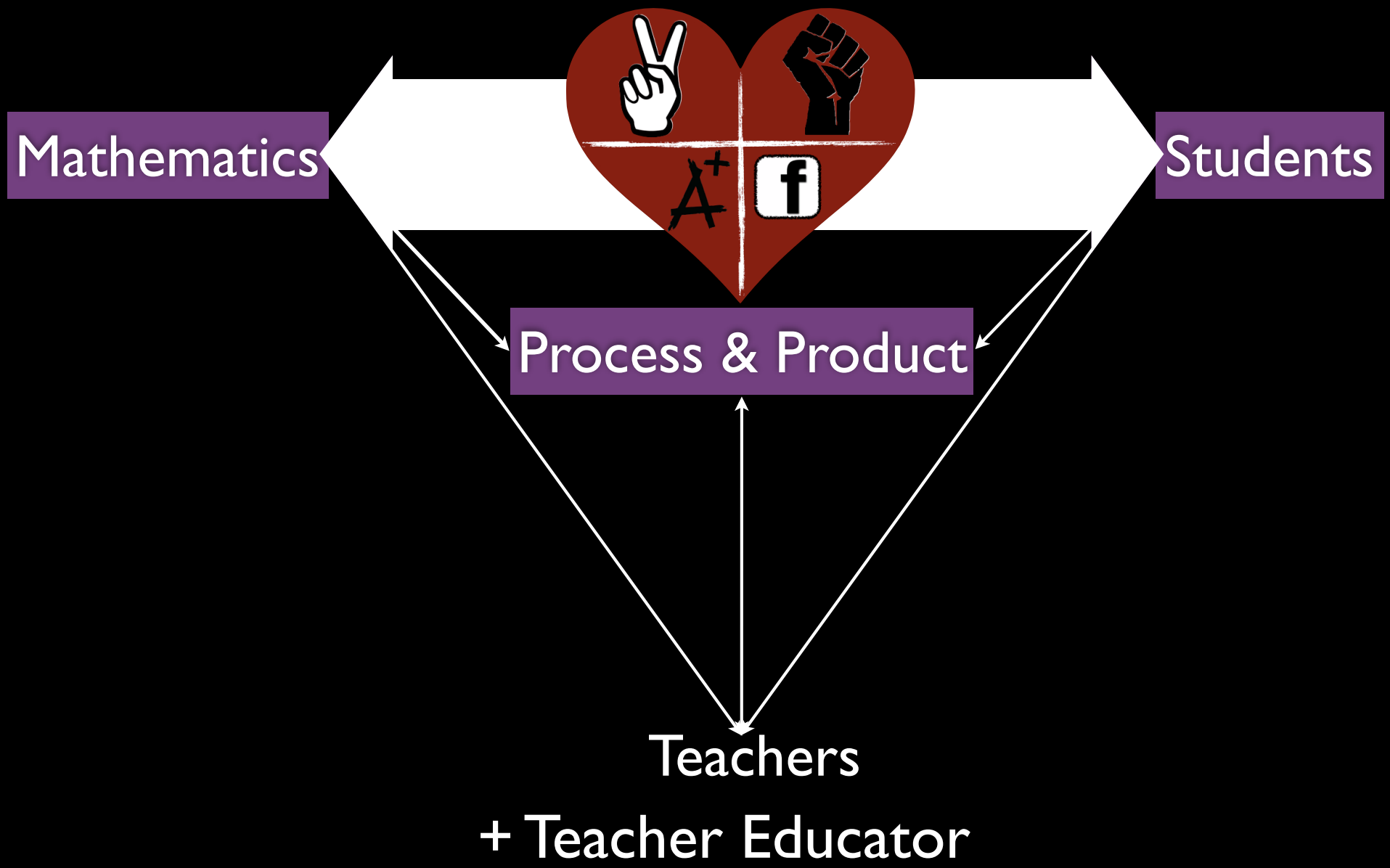
Because I dont understand it, If I understood it I would like it.

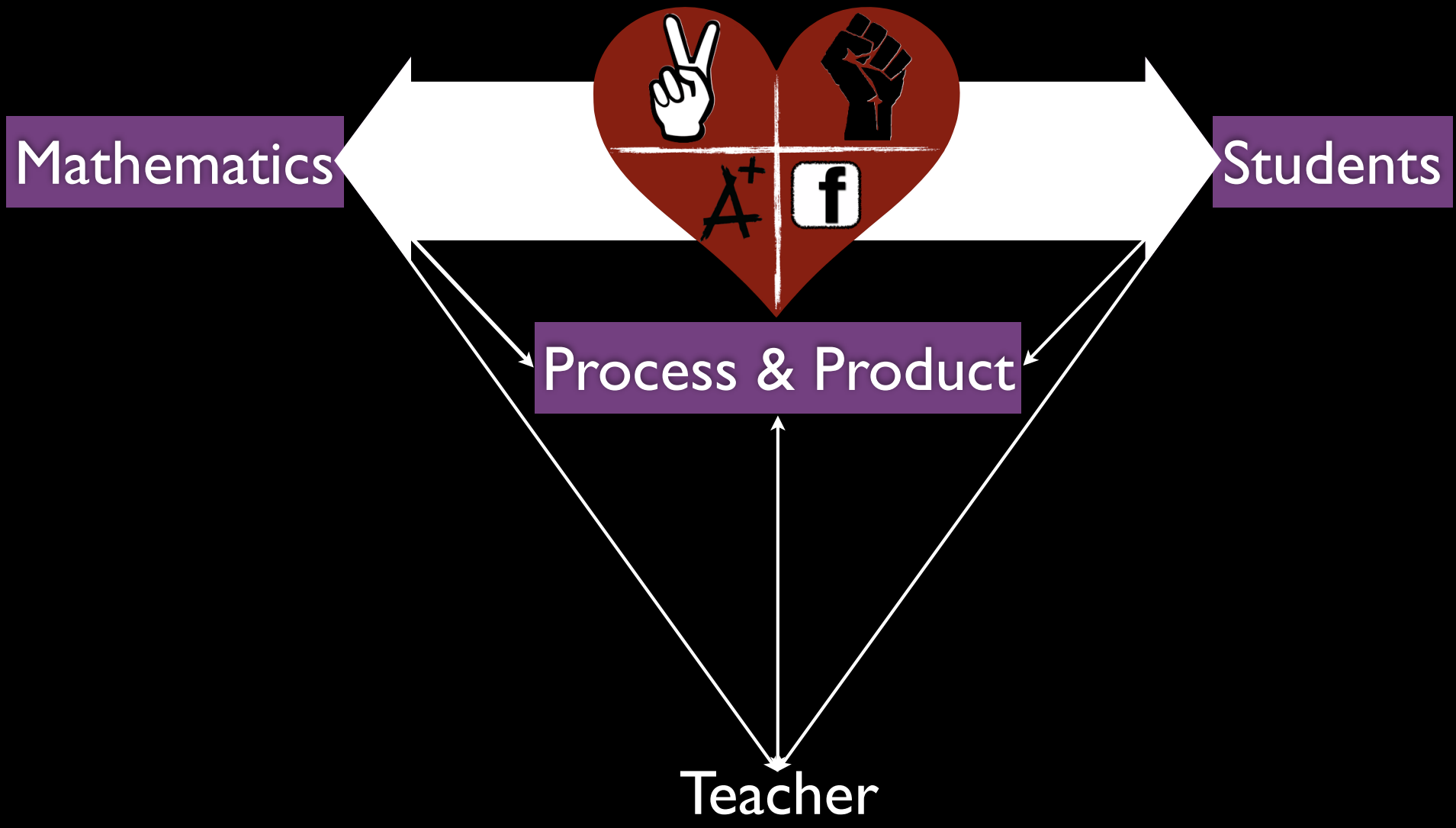
Think about what we have done this past week and describe how your relationship with mathematics has changed. It has changed because I like what were doing in math right now, I understand it and its easy, I think its fun what were doing right now and I like to do it on my own and understand it.

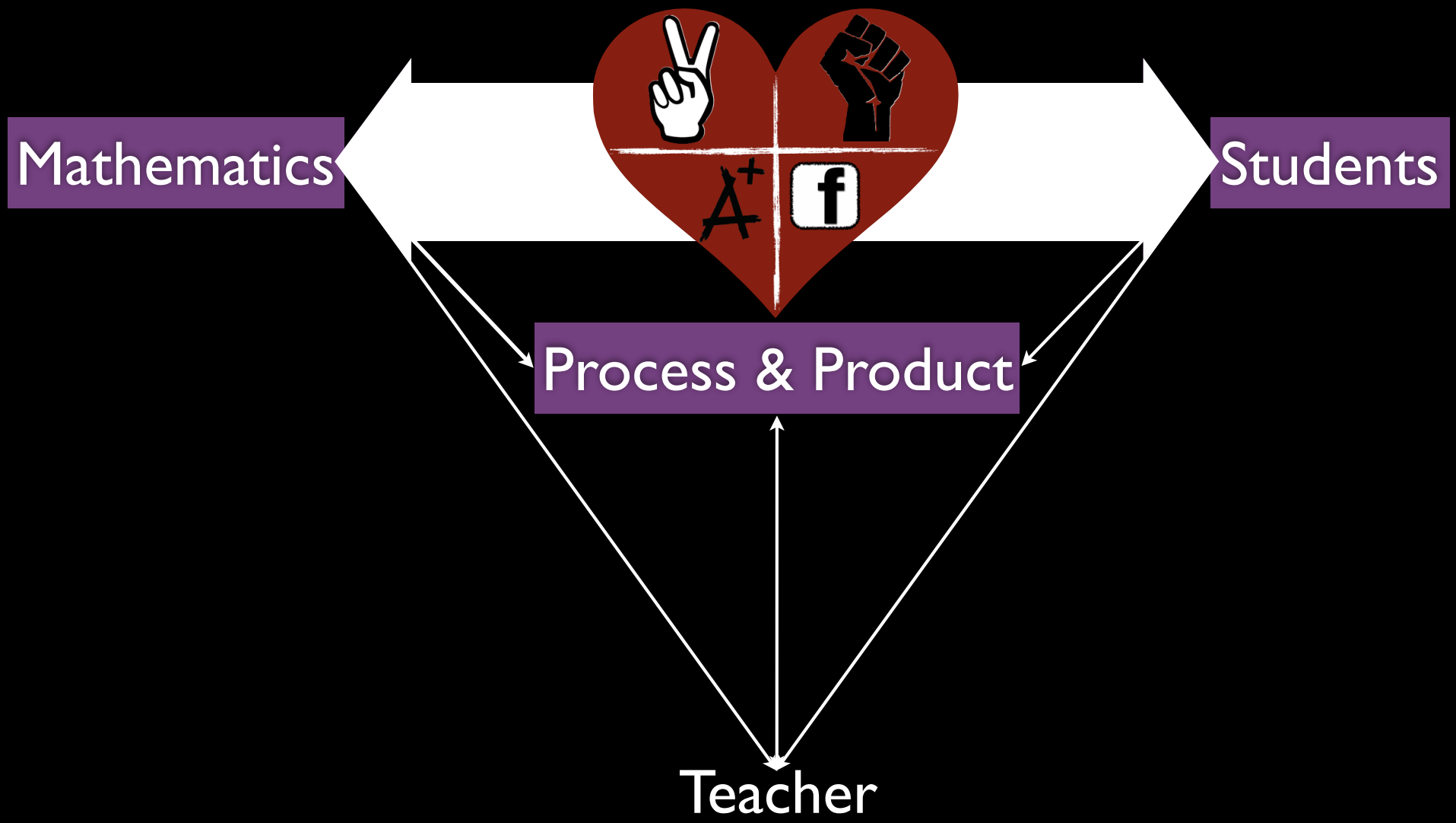

Motivation
Framework
Research Question
Methods
Findings
Implications


Mathematics
Students
Process & Product
Teacher


Mathematics
Students
Process & Product
Teacher


Mathematics
Students
Process & Product
Teachers
+ Teacher Educator

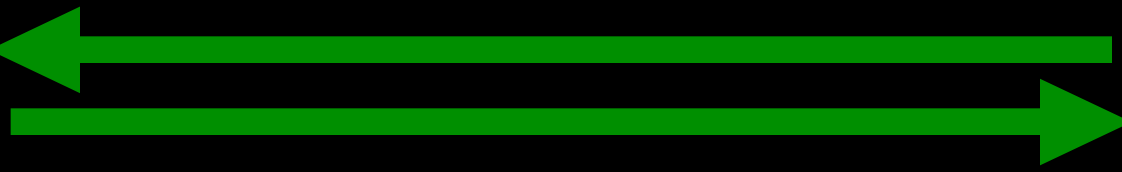

Mathematics
Students
Process & Product
Teacher



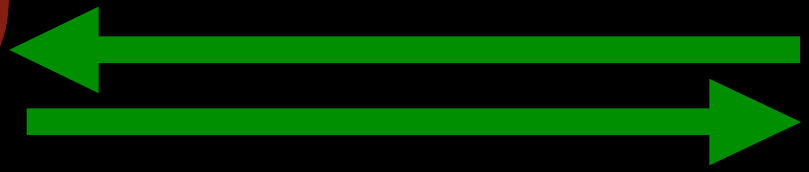
jcamidon@olemiss.edu
@amidonplanet
amidonplanet.com

Practice

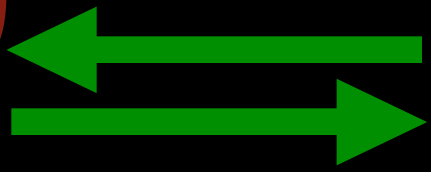
Practice



Practice



Practice



Practice

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

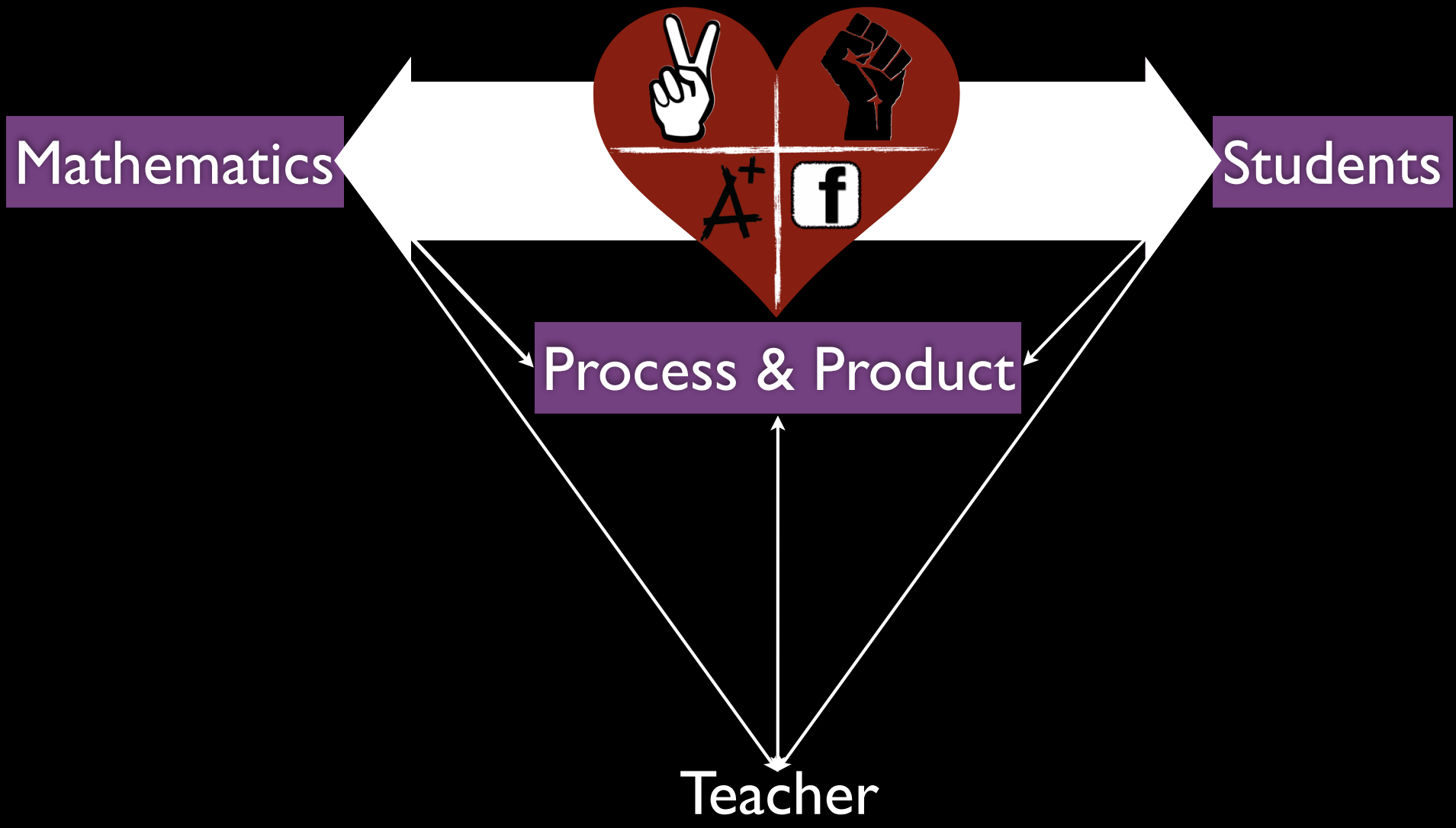
Teacher/Researcher

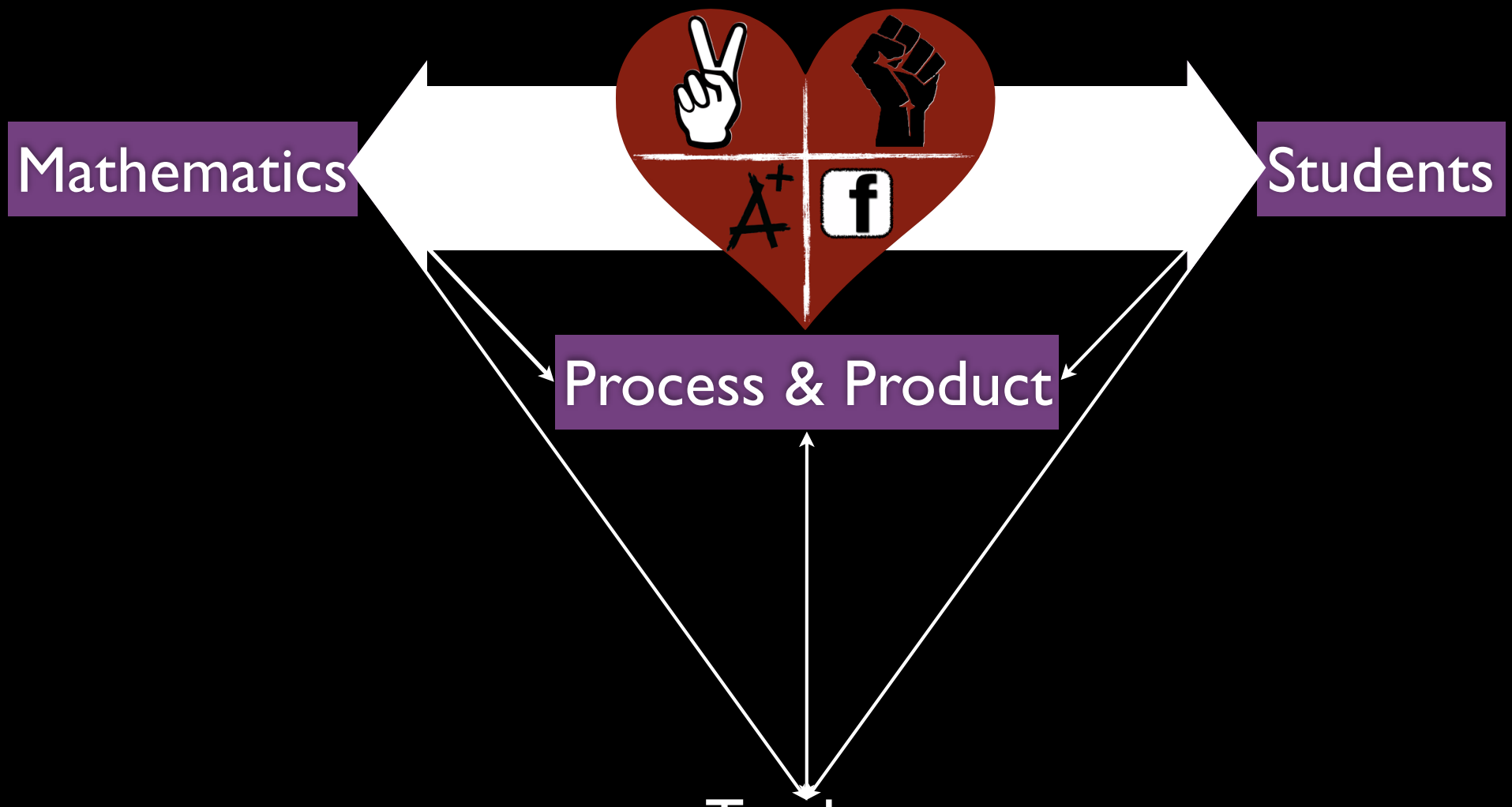
Pre-Service
Teacher

Pre-Service
Teacher

Pre-Service
Teacher

Teacher/Researcher


Mathematics
Students
Process & Product
Teacher



jcamidon@olemiss.edu