



## Research Questions

How do GTAs experience active learning?

- How do GTAs understand active learning? (Think)
- What are GTAs' feelings towards active learning? (Feel)
- How is active learning being utilized in the classroom? (Utilize)

How does this experience change over time?

## Support

Excellence in Teaching Symposium

Year long program:  
**Pre-Fall:** Week-long orientation  
**Fall:** Weekly seminars  
**Spring:** Monthly seminars

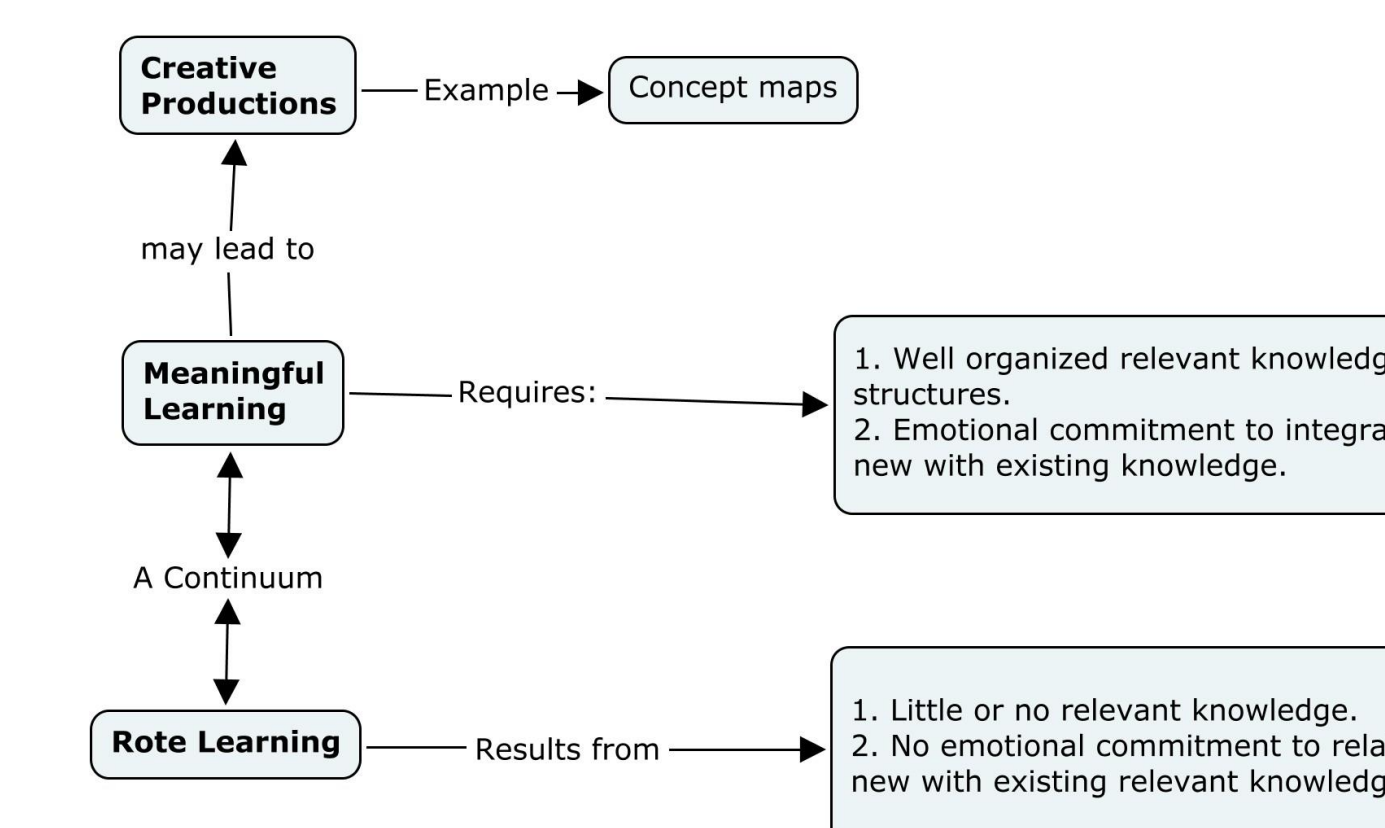
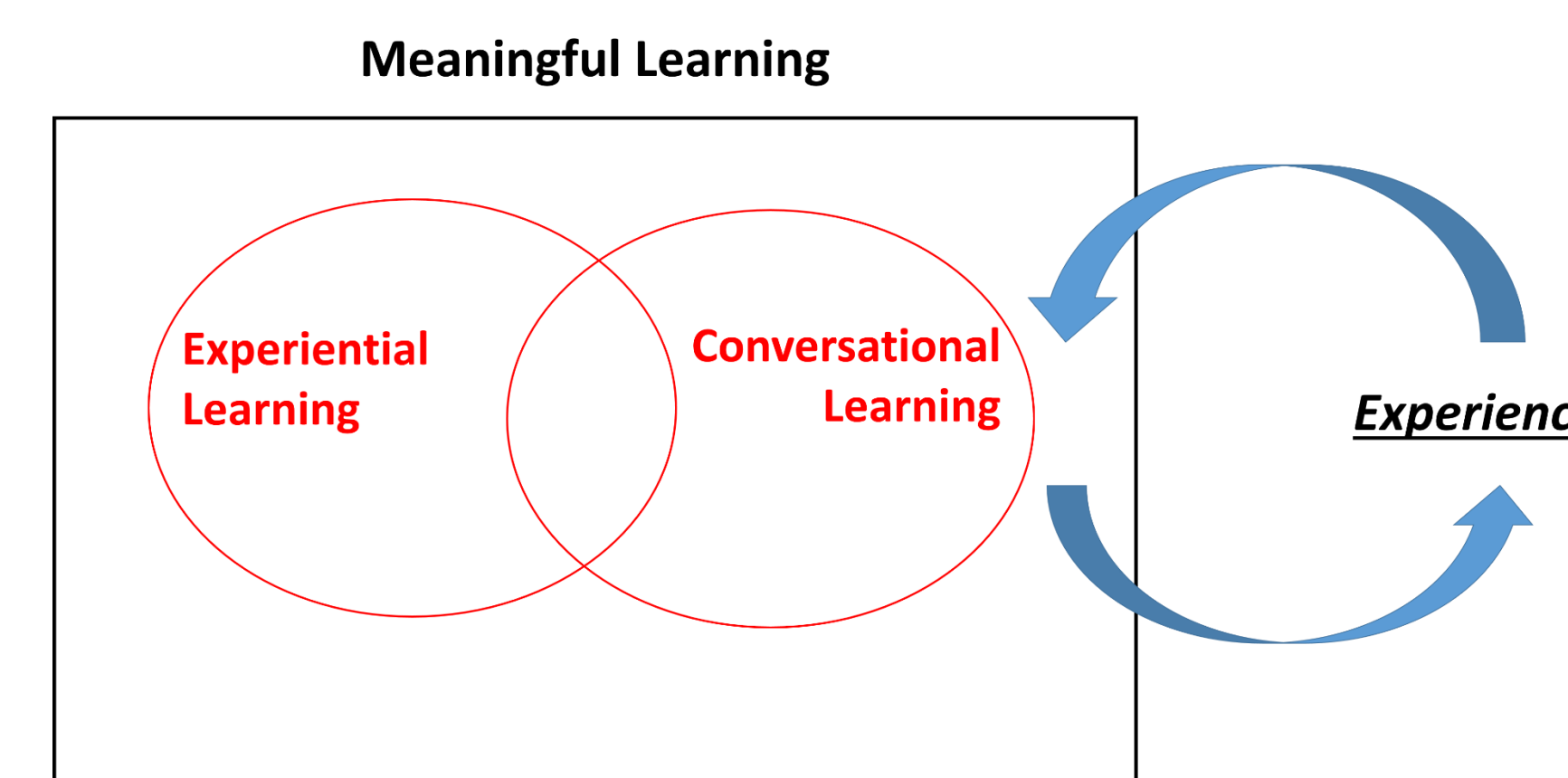
**Teaching Focus:** Active learning and engaging students in the classroom

Meetings with Course Coordinators

Weekly meetings for all course instructors to discuss and ask questions about the concepts to be taught the following week.

**Teaching Focus:** Course-specific teaching methods to actively engage students.

## Theoretical Perspective



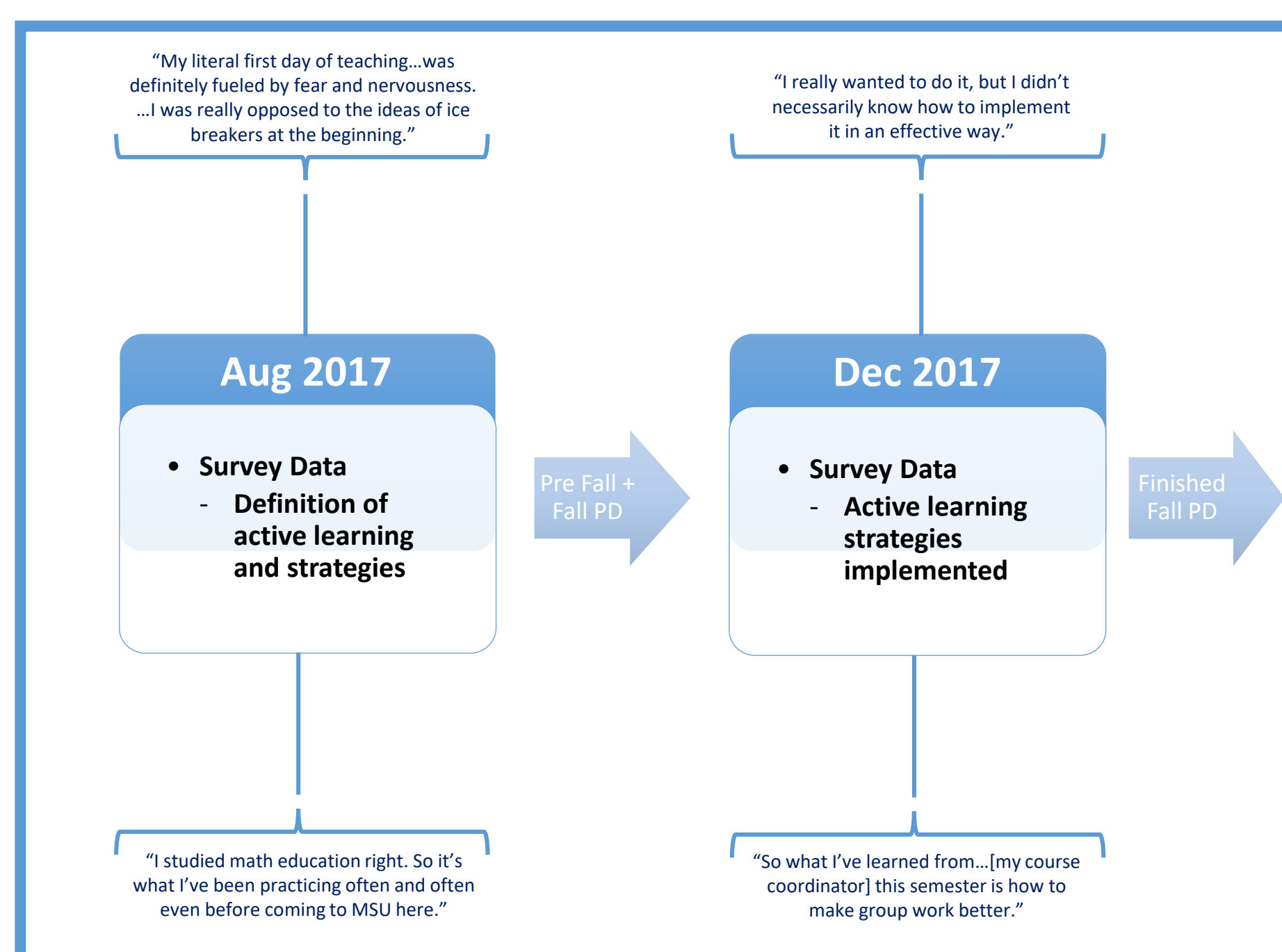
(Novak, 2011, p.2)

Meaningful learning is present when the topic at hand is completely understood, and according to Ausubel's theory, is when "the learner seeks to integrate new knowledge with relevant existing knowledge" (Novak, 2011, p.1).

## Data & Methodology

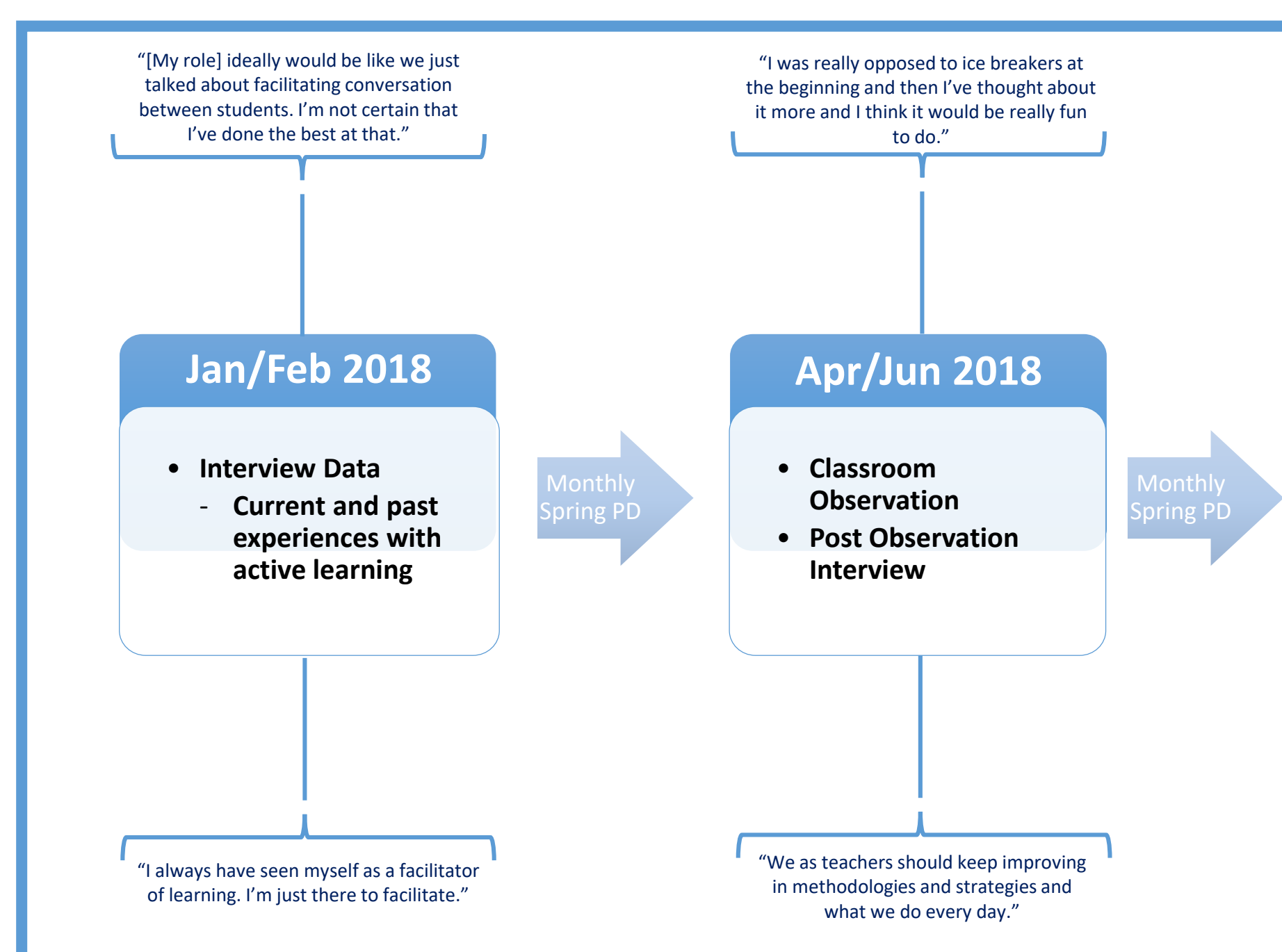
### Semester 1

**Max**  
- MS in Math  
- No Prior Teaching Experience

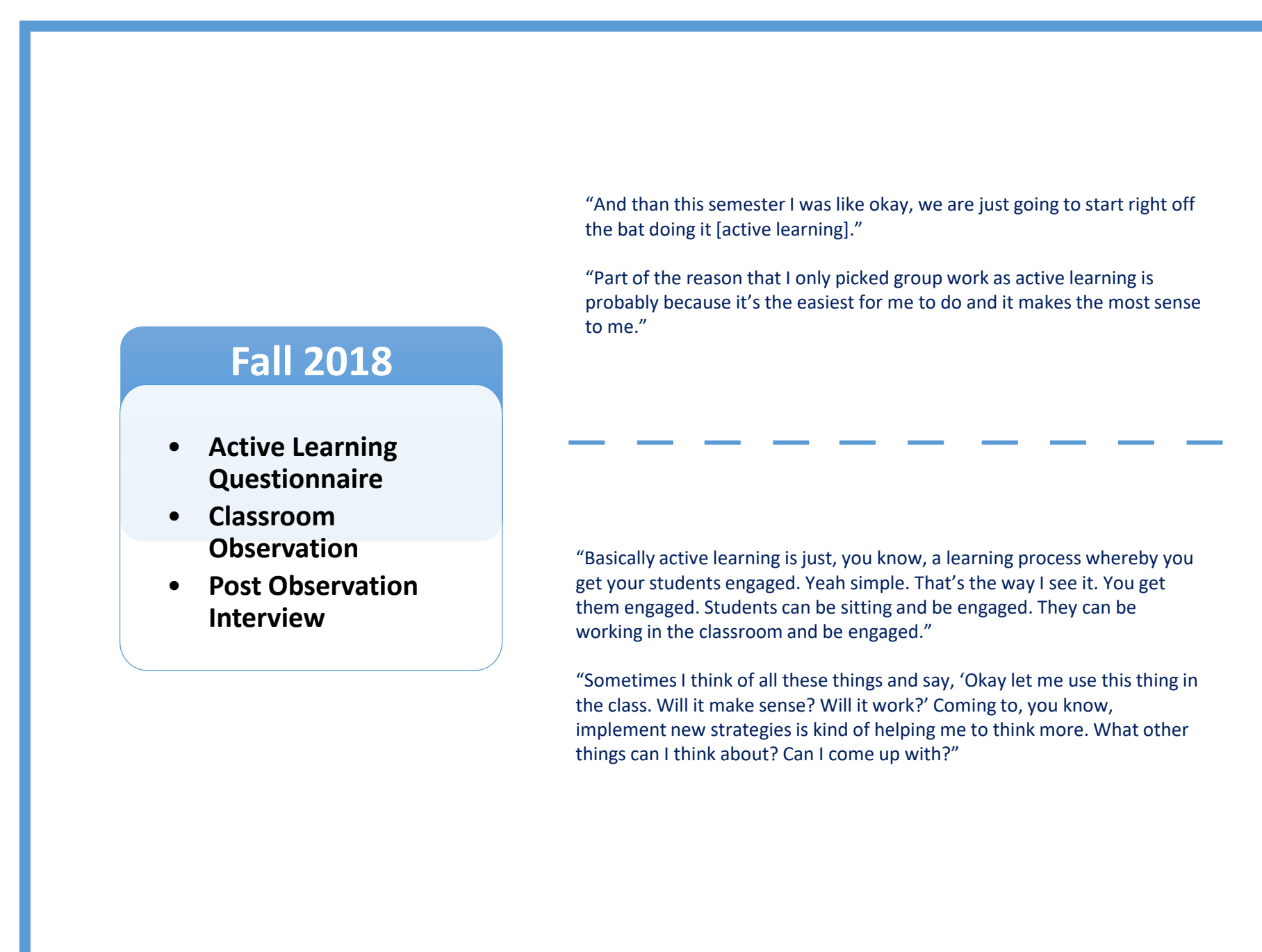


**Andy**  
- Ph.D. in Math Ed  
- Previous Teaching Experience

### Semester 2



### Semester 3



### Qualitative Analysis

Transcribed Interview Data

Highlighted Statements Corresponding to Learning Objectives

Codes Identified and Cross Referenced

- Transcribed Interview Data
- Highlighted Statements Corresponding to Learning Objectives
- Codes Identified and Cross Referenced

## Results

Max	Semester 1	Semester 2	Semester 3
<b>Think</b>	"Learning Process" → "Confident"		
	• Extensive answers • Involvement • Not putting each other down	• Engagement • Asking questions	• Connections • Students struggle • Involved / Engaged
<b>Feel</b>	"Learning Process" → "Confident"		
	• Beneficial • Driven by personal experience • Community value	• Fun • Valuable & effective for most • Reserved	• Excited • Valuable / Helpful for most
<b>Utilize</b>	"Interested" → "Expected"		
	• Worksheets • Questions • Communication	• Balanced • What's comfortable • Group work	• Group work • Easiest • Makes the most sense • Student expectation

"Cool but I came from a lecture based education. How do you do that in math?" → "Really enjoy it. They are really involved in what's going on and that makes me very happy."

Andy	Semester 1	Semester 2	Semester 3
<b>Think</b>	"Engagement"		
	• Engaged • Break student teacher dependency	• Simple • Engaged	• Engaged
<b>Feel</b>	"Value / Passion"		
	• Valuable for student & teacher • Passion • Part of teaching philosophy	• Love • Comfortable	• Must be implemented • "A part of me"
<b>Utilize</b>	"Willing/Learning"		
	• Questions • Creativity • Always willing	• Proactive reasoning • Voting • Variety	• Group work • Consistently new strategies • Action research driven

"In 2012, I used to be a dictator in my class. I used to be the almighty teacher. But now I am more of a facilitator."

## Discussion

After initial interest in active learning, both GTAs felt a sense of self-responsibility to learn more about these techniques.

Once each GTA's foundational understanding was cemented through experience and discussion, their focus shifted to continual refinement of how they used different active learning strategies in the classroom.

- In Max's case, growth in understanding and acceptance occurred over time when implementing these strategies in her classrooms. As her understanding and attitudes more formally developed, so did her implementation of active learning techniques.
- Andy displayed a more advanced implementation of active learning strategies during both observations, but he noted a progression in his development similar to Max's that had happened prior to this study.

## References

Baker, A. C., Jensen, P. J., & Kolb, D. A. (2002). *Conversational learning: An experiential approach to knowledge creation*. Westport, CT: Quorum Books.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall

Novak, J. D. (2011). A theory of education: Meaningful learning underlies the constructive integration of thinking, feeling, and acting leading to empowerment for commitment and responsibility. *Meaningful Learning Review*, 1(2). Retrieved from: [https://www.if.ufrgs.br/asr/artigos/Artigo\\_ID7/v1\\_n2\\_a\\_2011.pdf](https://www.if.ufrgs.br/asr/artigos/Artigo_ID7/v1_n2_a_2011.pdf)