Designing collaborative asynchronous online (AOD) discussions for deep learning
## Poster of a design framework

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INTRODUCTION

A collaborative AOD is used to foster deep content learning in a graduate-level online project management (PM) course. Pre-work activities are followed by an AOD that prompts lower- (define, describe, explain) and higher-levels of thinking (interpret, share experiences, apply, evaluate, hypothesize) during content-intensive discussion threads. Students are prompted to share their ideas, which leads them to validate their current understanding, develop new knowledge, and/or change existing knowledge of PM. There is minimal instructor involvement in the AOD.

CURRENT COURSE DESIGN

1 Pre-work activities (2 weeks) → 2 AOD-1 PM fundamentals (2 weeks) → 3 Rest of the course (11 weeks)
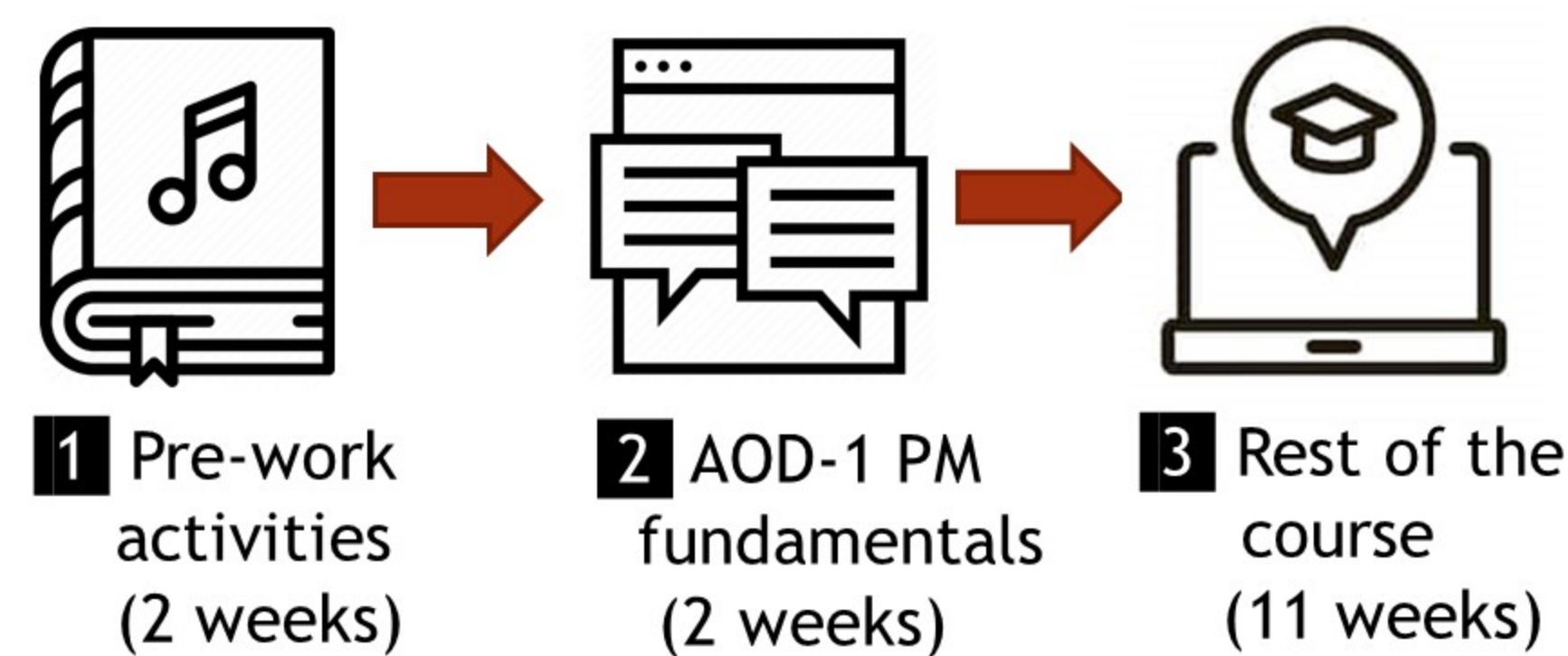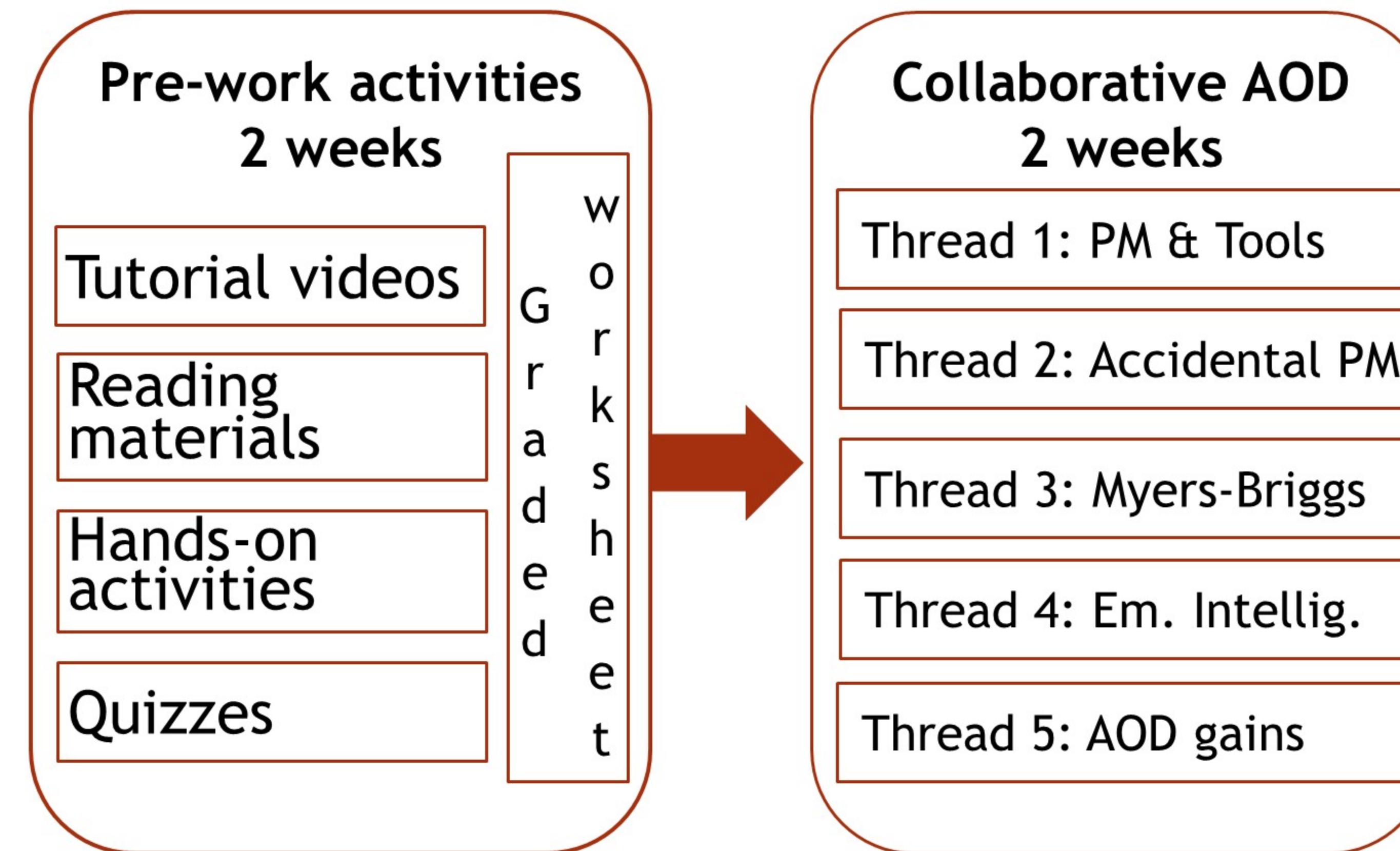
- Students enter AOD after submitting a completed worksheet on basic PM knowledge
- Post at least once & reply to others at least twice in each thread to clarify, question, add comments; reference experience or pre-work

STUDY AT A GLANCE

- Descriptive research
- Convenience sample (3 cohorts; total $n = 52$)
- Research questions:
  - ‣ RQ1: was there discussion in AOD?
  - ‣ RQ2: was discussion focused on content?
  - ‣ RQ3: was there evidence of deep learning in AOD?

AOD DESIGN FRAMEWORK

Pre-work activities 2 weeks
- Tutorial videos
- Reading materials
- Hands-on activities
- Quizzes

Graded worksheet →

Collaborative AOD 2 weeks
- Thread 1: PM & Tools
- Thread 2: Accidental PM
- Thread 3: Myers-Briggs
- Thread 4: Em. Intellig.
- Thread 5: AOD gains

DISCUSSION VISUALIZED (SAMPLE)

Legend

Utterance coding:
- ▉ content low
- ▉ content high
- ▉ social response
- ▉ resources
- ▉ questions

Instructor posting: **Ins**

Student posting: **Z**

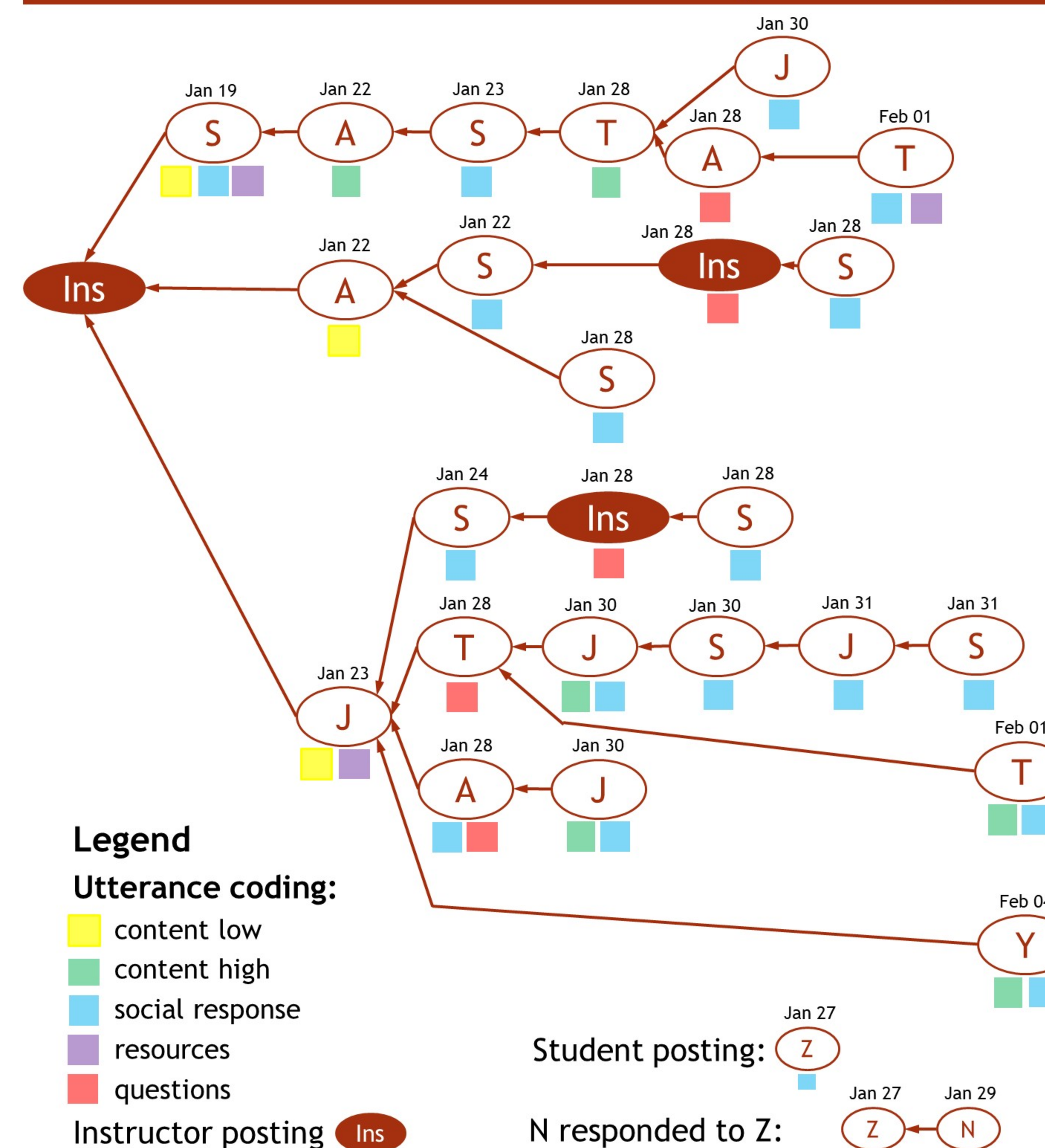N responded to Z: **Z ← N**

ANALYSIS OF THE AOD

- Basis - Bloom's revised taxonomy (2001)
- Five codes in the coding scheme:

content low, content high, social response, resources, question

I agree with you that an individual can focus more on the tasks of others than their own at times. I also think that an individual brings experiences from past work environments and team experiences. Do you think this could contribute to or hinder their experience with their current team?

It is extremely important in project management, first, as the research on this matter reveal that mere cognitive skills are not enough for a job competence. The reason for that is emotional and logical factors that affect which decisions we are likely to make (Druskat et al., 2006).

PRELIMINARY RESULTS

RQ1: was there discussion in AOD?
- Content level was high in the AOD: 80% of 363 *postings* were content-related
- Students who participated *longer* in the collaborative AOD were observed to have *more* replies to the peers

RQ2: was discussion focused on content?
- 20% of 1085 coded *utterances* were content high and 40% content low
- Students who contributed *longer* posts were observed to have *more* content-related utterances in the posts
- Students who interacted with peers *more frequently* were observed to have *more content high* utterances

RQ3: was there evidence of deep learning?
- Students demonstrated deep learning when prompted with higher-order questions from either instructor or peers

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CONTEXT

- Asynchronous online discussions (AODs) are widely used in online learning environments
- AODs have shown to promote critical thinking, knowledge building, deep learning, reflection, and argumentation
- A common assumption is that students come to AODs fully prepared to discuss content-related material
- Yet there is contrasting evidence that AODs often do not facilitate student learning due to poor design of AODs
- AODs may be productive for student learning if students are prepared for AODs (pre-work activities)
- Pre-work activities hold students accountable for content knowledge and prepare them for a collaborative discussion

DESCRIPTION OF DESIGN FEATURES

- Work on the content precedes Collaborative AOD
- Pre-work activities engage students in knowledge building about educational project management
- Students enter the AOD prepared with basic project management knowledge
- Five threads tackle aspects of project management that students have already worked on in the pre-work activities
- At a minimum, students are required to produce one individual post and reply to two other students in every thread
- Students are involved in peer interaction about the content and demonstrate knowledge of project management basics
- Students are prompted lower (define, describe, explain) and higher levels of thinking (interpret, share experiences, apply, evaluate, hypothesize)
- All discussion threads are open in the LMS for two weeks
- Instructor involvement is minimal: prompts to students, encouraging words to participate

COURSE FLOW

1. Pre-work activities (2 weeks)
2. AOD-1 PM fundamentals (2 weeks)
3. AOD-2 set PM team projects (1 week)
4. Content units w/ quizzes (self-paced, ~6 weeks)
5. Group project (10 weeks)
6. Peer project feedback (1 week)
7. AOD-3 PM summary (1 week)
8. Final exam (end of semester)

ASYNCHRONOUS ONLINE DISCUSSION PROMPTS

- Thread 1: What is project management? What are some of the tools that were developed to support project management and what are they for?
- Thread 2: Are you an accidental project manager, why or why not?
- Thread 3: What is your type and how is it described in terms of the Portrait statement? What classification are you likely to best get along with? What does this classification tell you about your strengths as a project manager? as a problem solver?
- Thread 4: What is the relationship among social behavioral stages of individuals and team management style and how does this relate to the definition of effective teams? What is emotional intelligence and why is it important to project management, or not?
- Thread 5: What were the two most important things that you learned about project management so far that you DID NOT know before?

SOME REFERENCES

An, H., Shin, S., & Lim, K. (2009). The effects of different instructor facilitation approaches on students' interactions during asynchronous online discussions. *Computers & Education, 53*(3), 749–760.

Gao, F., Zhang, T., & Franklin, T. (2013). Designing asynchronous online discussion environments: Recent progress and possible future directions. *British Journal of Educational Technology*, *44*(3), 469–483.

Lin, H., Hong, Z.-R., & Lawrenz, F. (2012). Promoting and scaffolding argumentation through reflective asynchronous discussions. *Computers & Education*, *59*(2), 378–384.

Newman, D. R., Johnson, C., Webb, B., & Cochrane, C. (1997). Evaluating the quality of learning in computer supported co-operative learning. *Journal of the American Society for Information Science*, *48*(6), 484–495.

Schellens, T., & Valcke, M. (2005). Collaborative learning in asynchronous discussion groups: What about the impact on cognitive processing? *Computers in Human Behavior*, *21*(6), 957–975.

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