



Measuring the learning impact of pre-recorded videos

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Background and Research Questions

- Using pre-recording may improve learning outcome for students during face-to-face (in-class) lectures. However, many students do not watch pre-recorded videos before the lectures. Are there significant learning benefits from investing into pre-recording? What can be done to improve it?
- RQ1:** Do pre-recorded videos significantly improve student's learning?
- RQ2:** How can the use of pre-recorded videos maximize learning outcome for students?

Approach and analysis

- DAT110 – Distributed Systems and Network Technology**
- 2 parts
 - Network Technology (NT) – prerecording
 - Distributed System (DS) – No prerecording
- RQ1:**
 - In class (Mentimeter quiz)
 - Weekly quiz (Canvas)
 - Quantitative analysis
- RQ2: Survey (questionnaire on Canvas)**
 - e.g., What are reasons you will not watch pre-recordings?
 - Qualitative analysis

Results

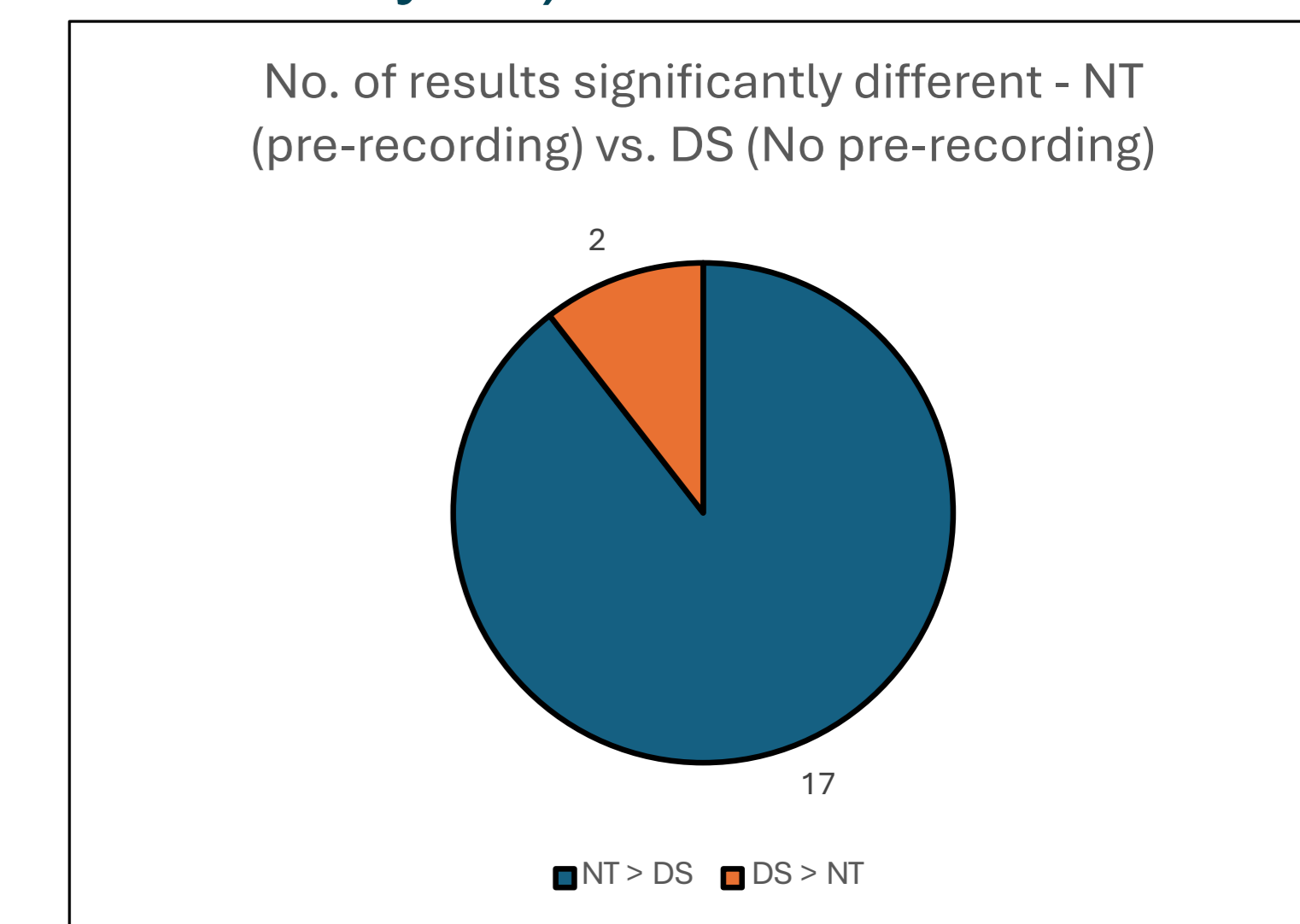
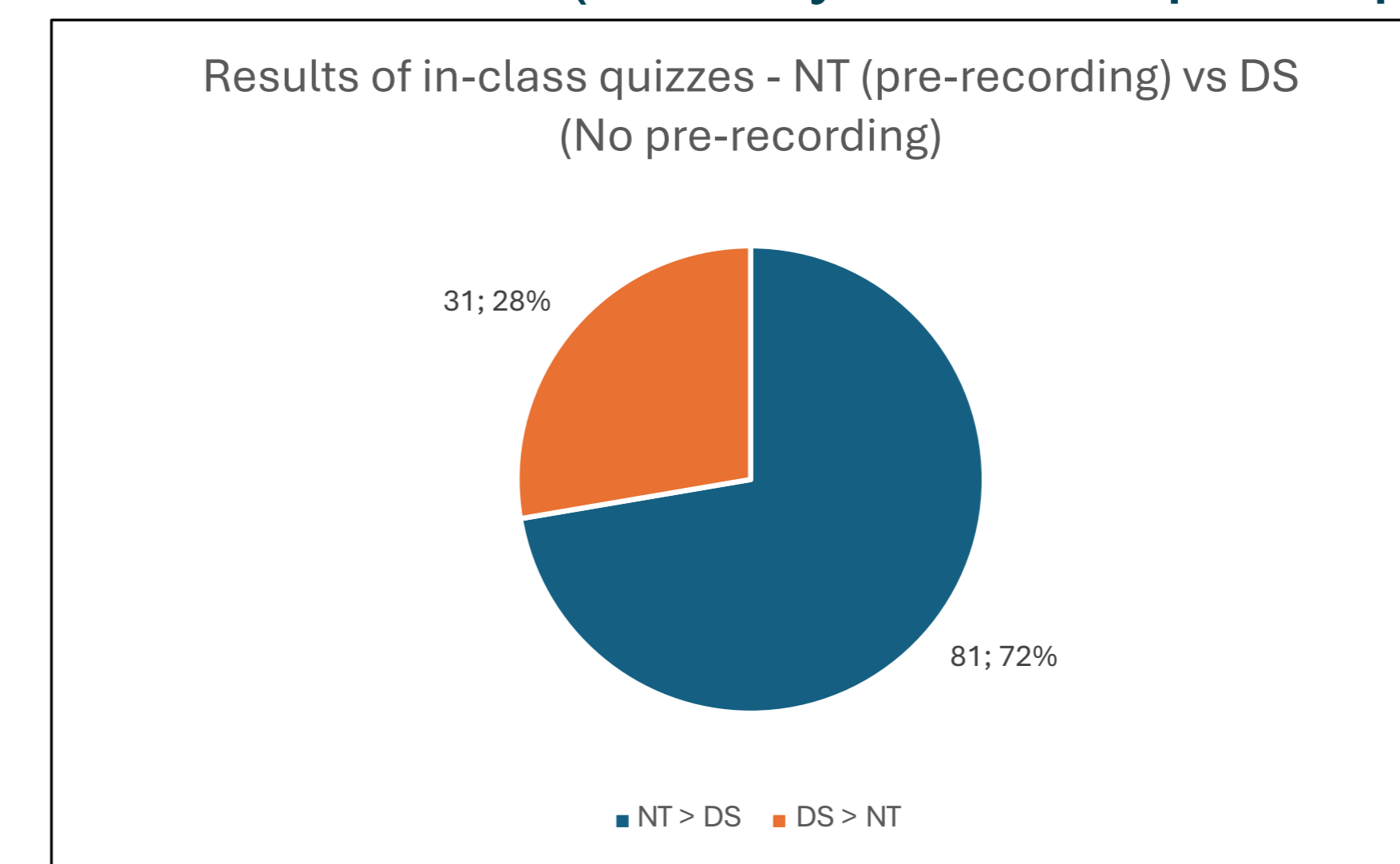
- RQ1: In-class (Mentimeter)

	NT (pre-recording)	DS (No pre-recording)
Mean (score)	56,6	72,3
Stdev	14,7	9,5
p-value (t test)	0,017	

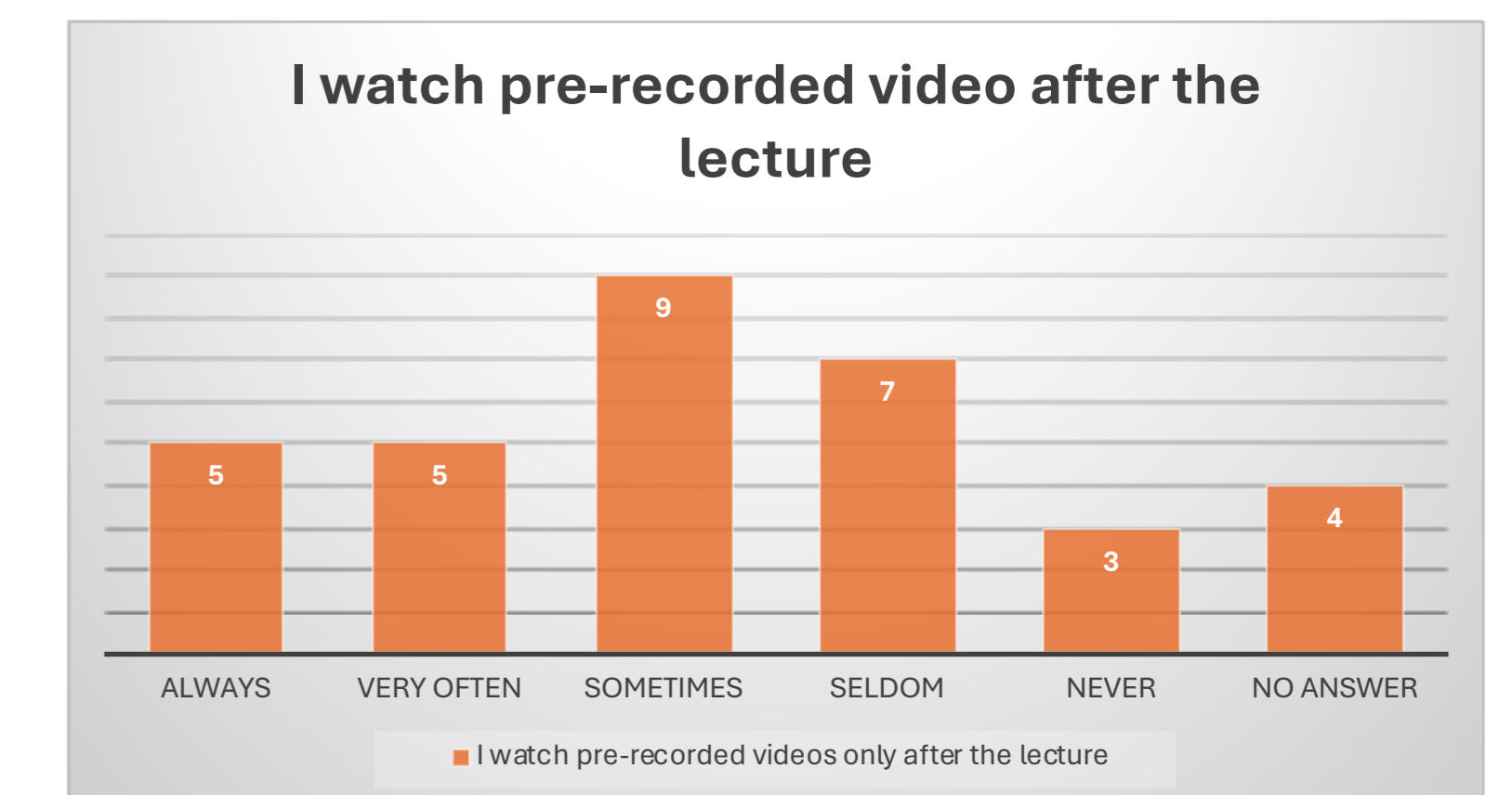
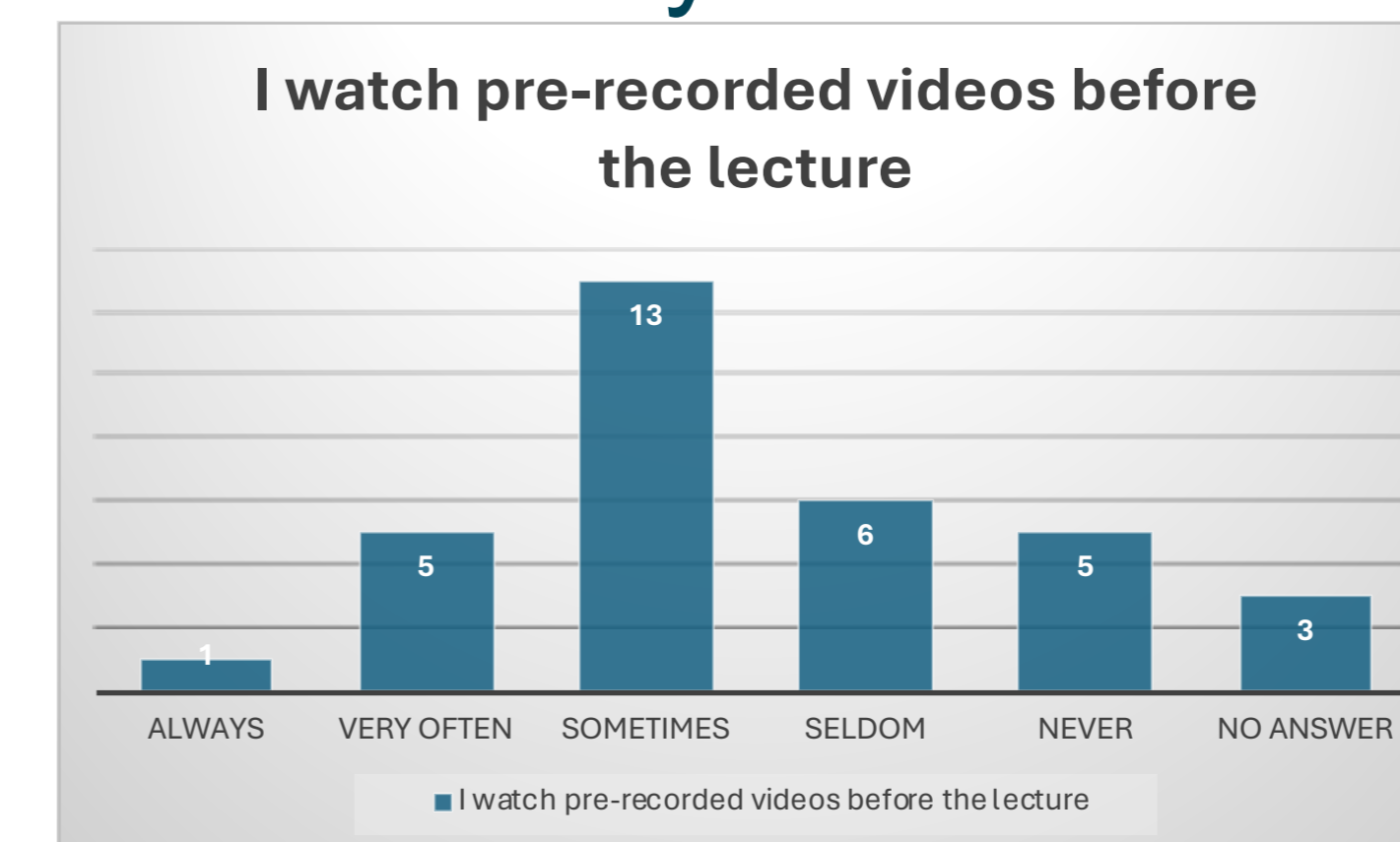
- RQ1: In-class (Weekly canvas quiz - aggregate)

	NT	DS
mean	65,6	58,6
stdev	24,2	24
p-value	2,40E-07	

RQ1: In-class (Weekly canvas quiz – per student analysis)



RQ2: Survey



Why I watch

- Preparedness
- Better understanding
- Clarify lecture
- Increase discussion
- Increase attention
- Skip lecture
- Easier

Why I don't watch

- Workload, bad-routine
- forgetfulness, busy
- not-prioritized, time-demanding
- When-uploaded
- discomfort-with-online-videos
- Procastination, too-much

What I want

- short
- precise
- not-many-clips
- different-from-lecture
- useful-for-revision
- lead-to-interactive-lectures
- in-english
- Unsure

Scalability issues are addressed in DNS system by:

Issue	Respondents	Percentage	Status
Caching at the local DNS servers	150 respondents	85 %	✓
Replicating higher level DNS servers	107 respondents	61 %	✓
Using flat naming scheme	36 respondents	20 %	✗

Discussion and implications

- In-class quiz results show that less students get the immediate benefit from pre-recorded videos for many reasons.
- Weekly quiz results show that the gain from pre-recorded videos come in long-term.
- Pre-recorded video can increase learning impacts during in-class lectures.
- However, some students may struggle with online videos.
- There is a need to design this approach in a way that the benefits can be maximised (e.g., lecture timetable vs pre-recorded videos, timing).