

IOWA STATE UNIVERSITY

Agricultural Education and Studies

Associations between Learner Interaction and Performance in an Online Course: A Longitudinal Study

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Introduction

- Online learning has become pervasive
- Interaction is important in online learning
- Types of interaction
 - ❖ Learner-content
 - ❖ Learner-instructor
 - ❖ Learner-learner

Research Problem

- Is learner interaction associated with performance in an online course?

Objectives

- Describe student interaction by performance level and year
- Describe the magnitude of associations between specific interactions and performance level over time

Population

- 117 graduate students in AGEDS 510
- 51 males, 66 females
- Most were Agricultural Education and Professional Agriculture Majors
- Groups
 - ❖ Earned an A or A- (N=58)
 - ❖ Earned a B+ or lower (N=59)

Course Design

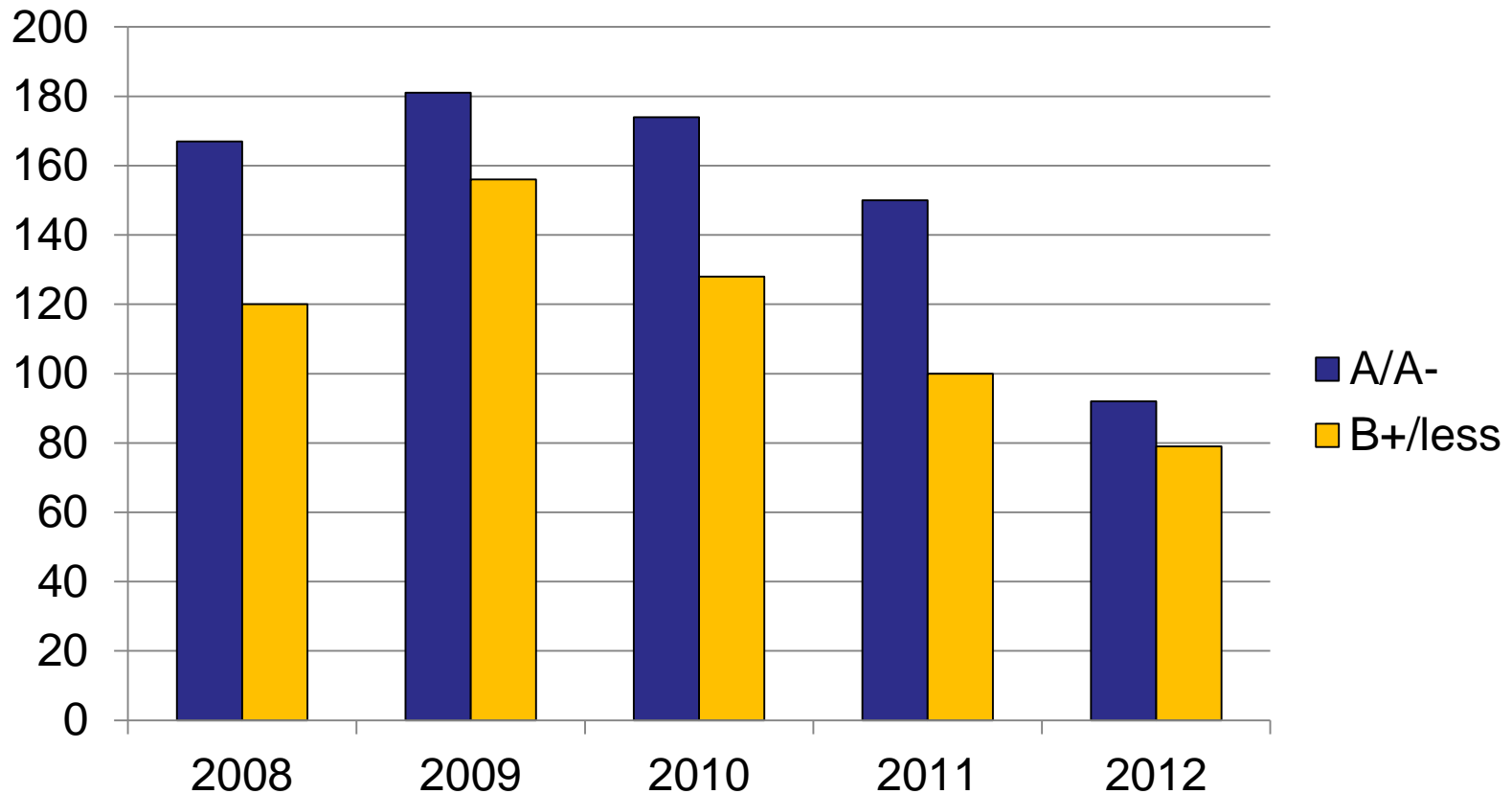
- Lessons: objectives and activities that involved the text, links to materials and assignments, and PowerPoint presentations with audio
- Discussion areas (n=18) for communication, submission of assignments, and feedback
- E-mail for private communication
- A calendar tool for organizational purposes

Data

- Collected by the course management system
- Analyzed with PASW Statistics 18
- Reported Means, standard deviations and Pearson Correlations
- Used Cohen's (1988) descriptors for effect size

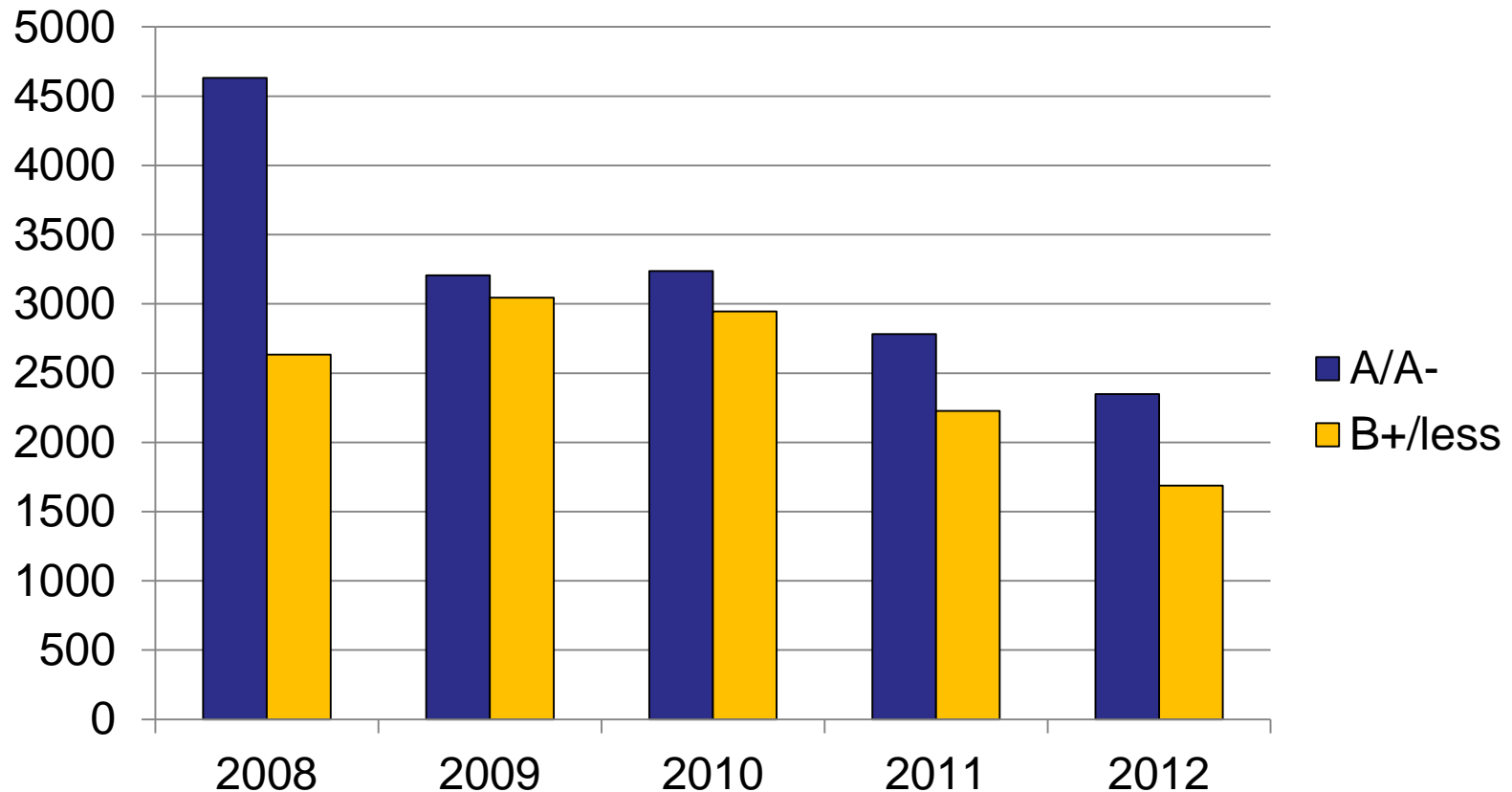
Mean Number of Sessions

LC, LI, LL



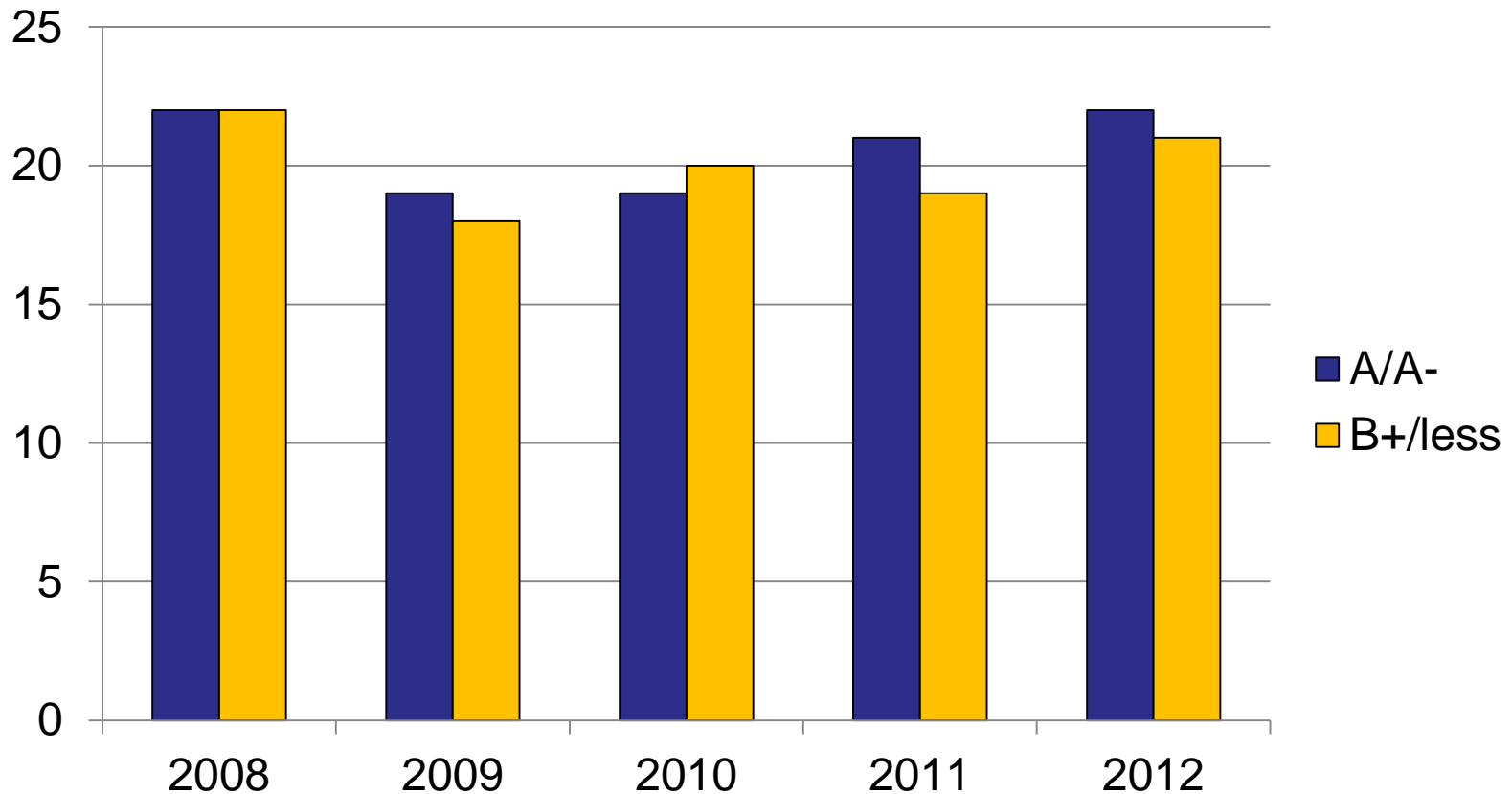
Mean for Total Time in Minutes

LC, LI, LL



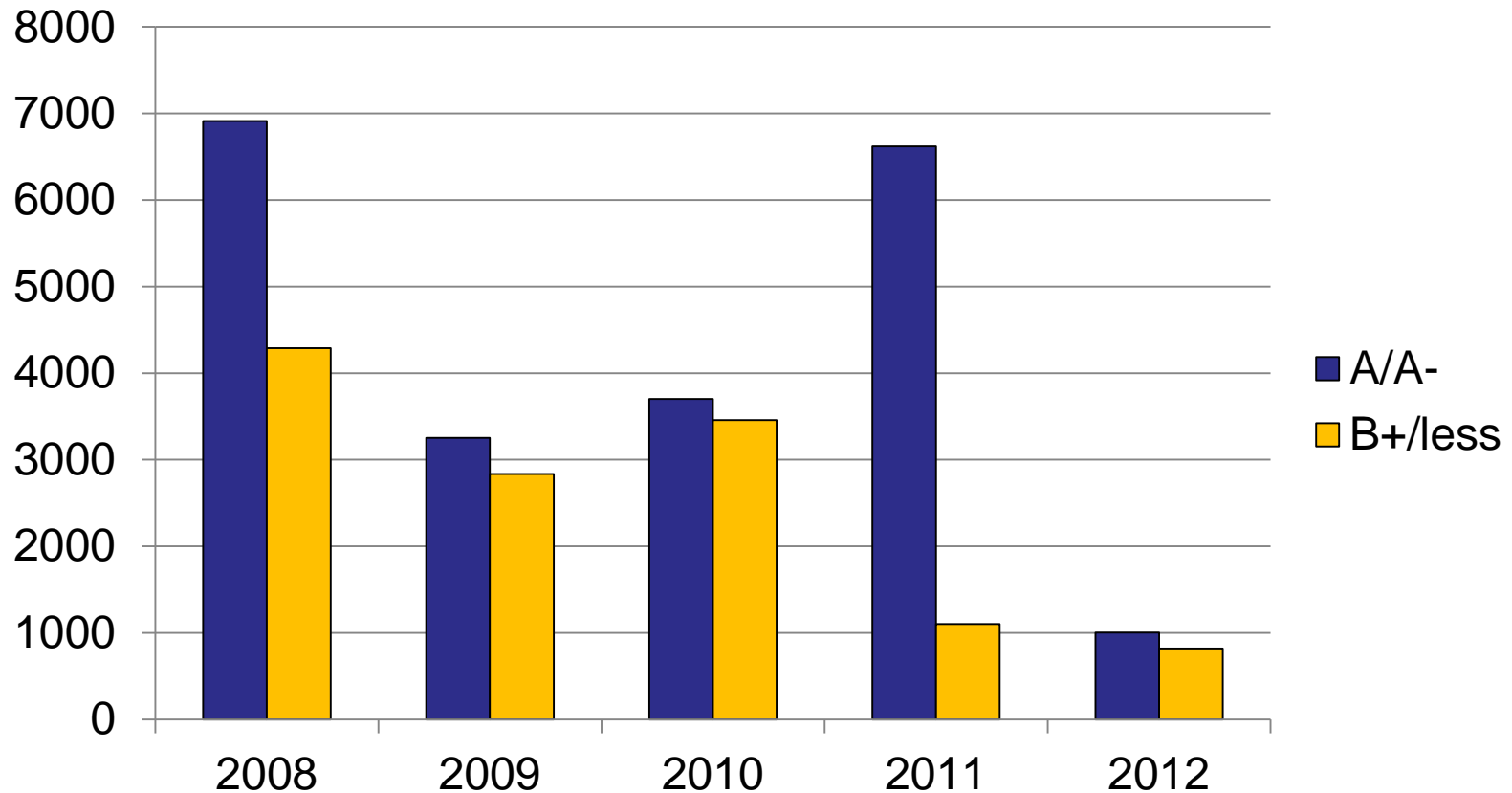
Mean Number of Discussions Posted

LC, LI, LL



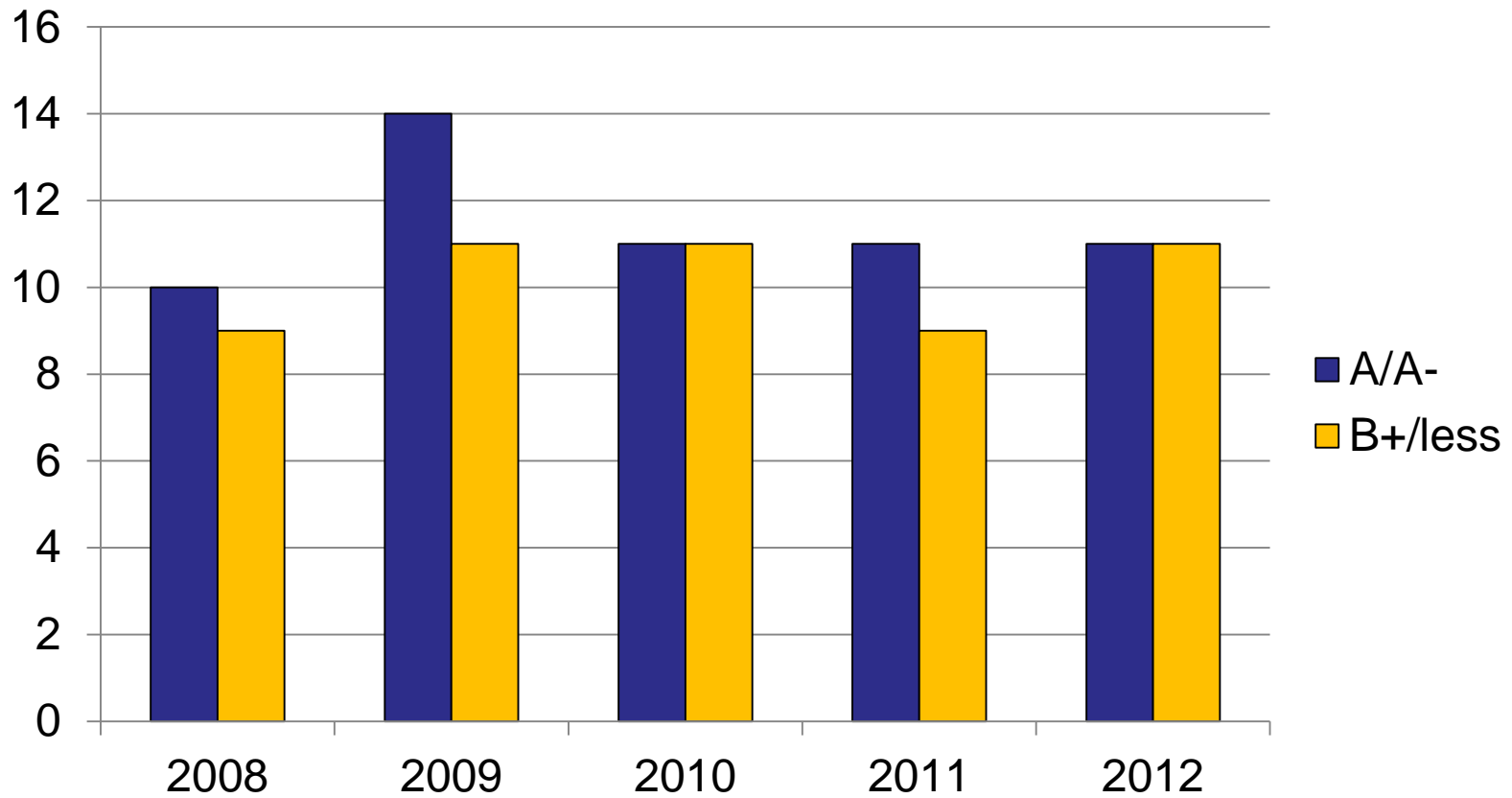
Mean Number of Discussions Read

LC, LI, LL



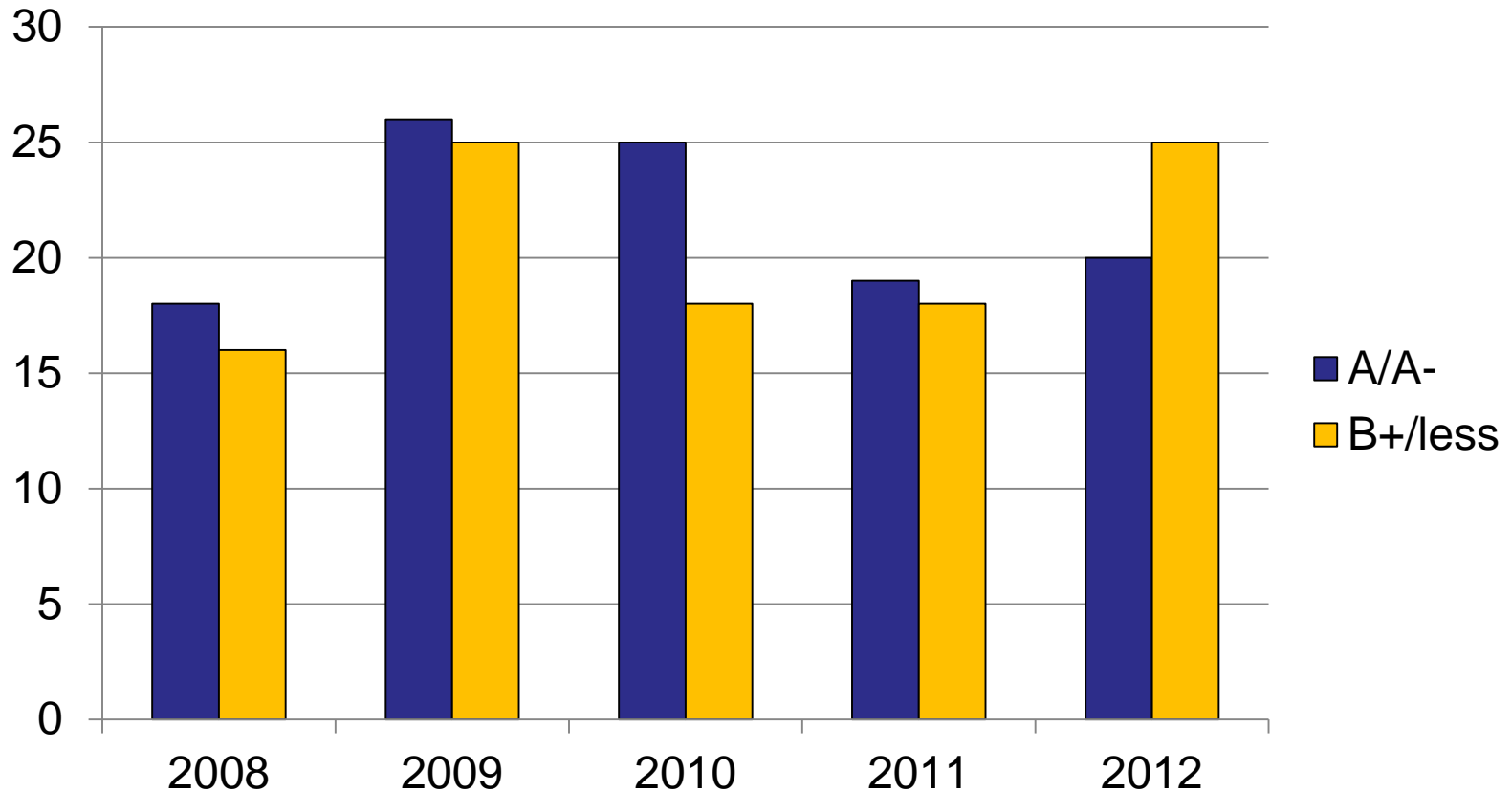
Mean Number of Mail Messages Sent

LI, LL



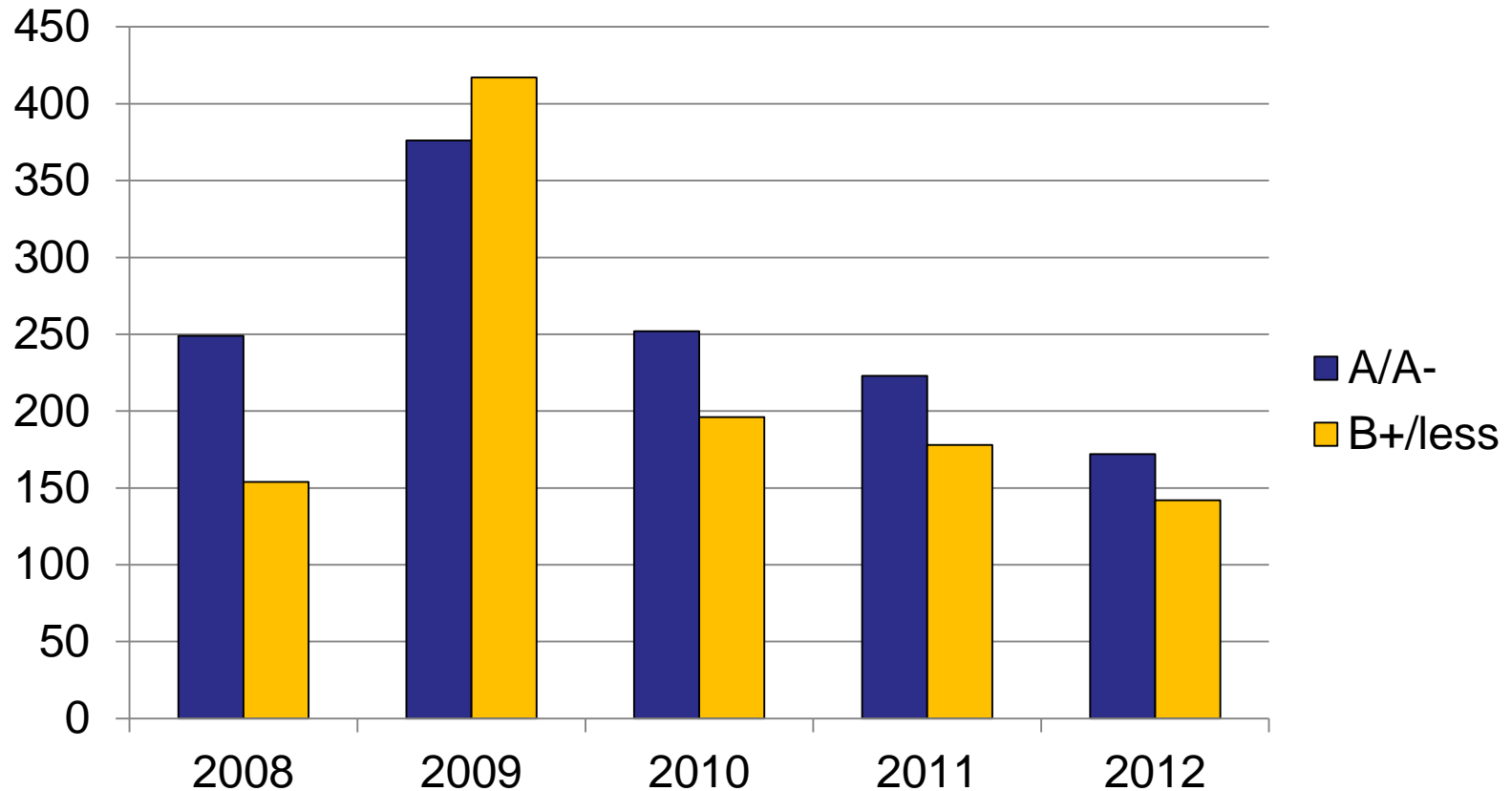
Mean Number of Mail Messages Read

LI, LL



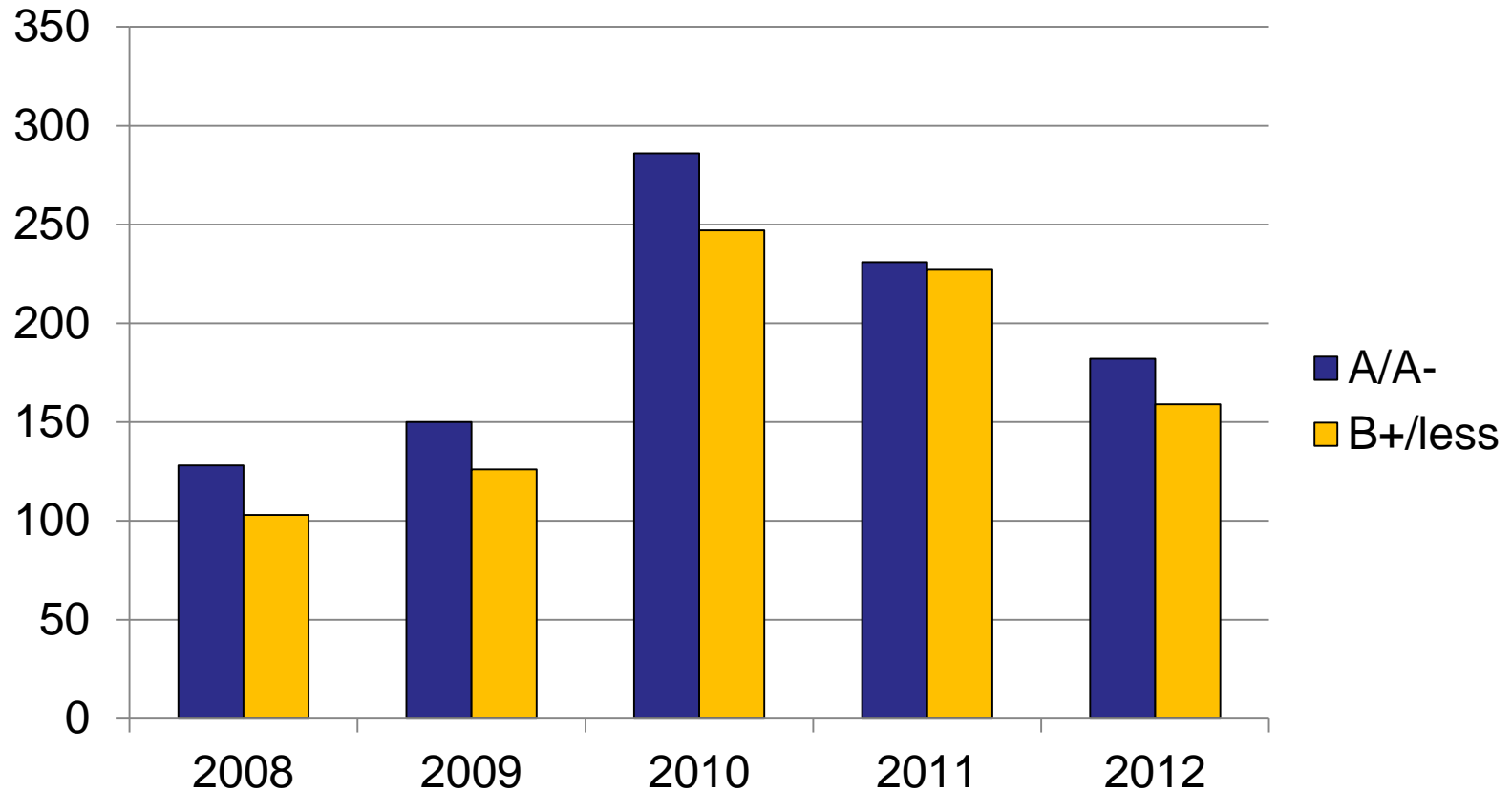
Mean Number of Content Folders Viewed

LC

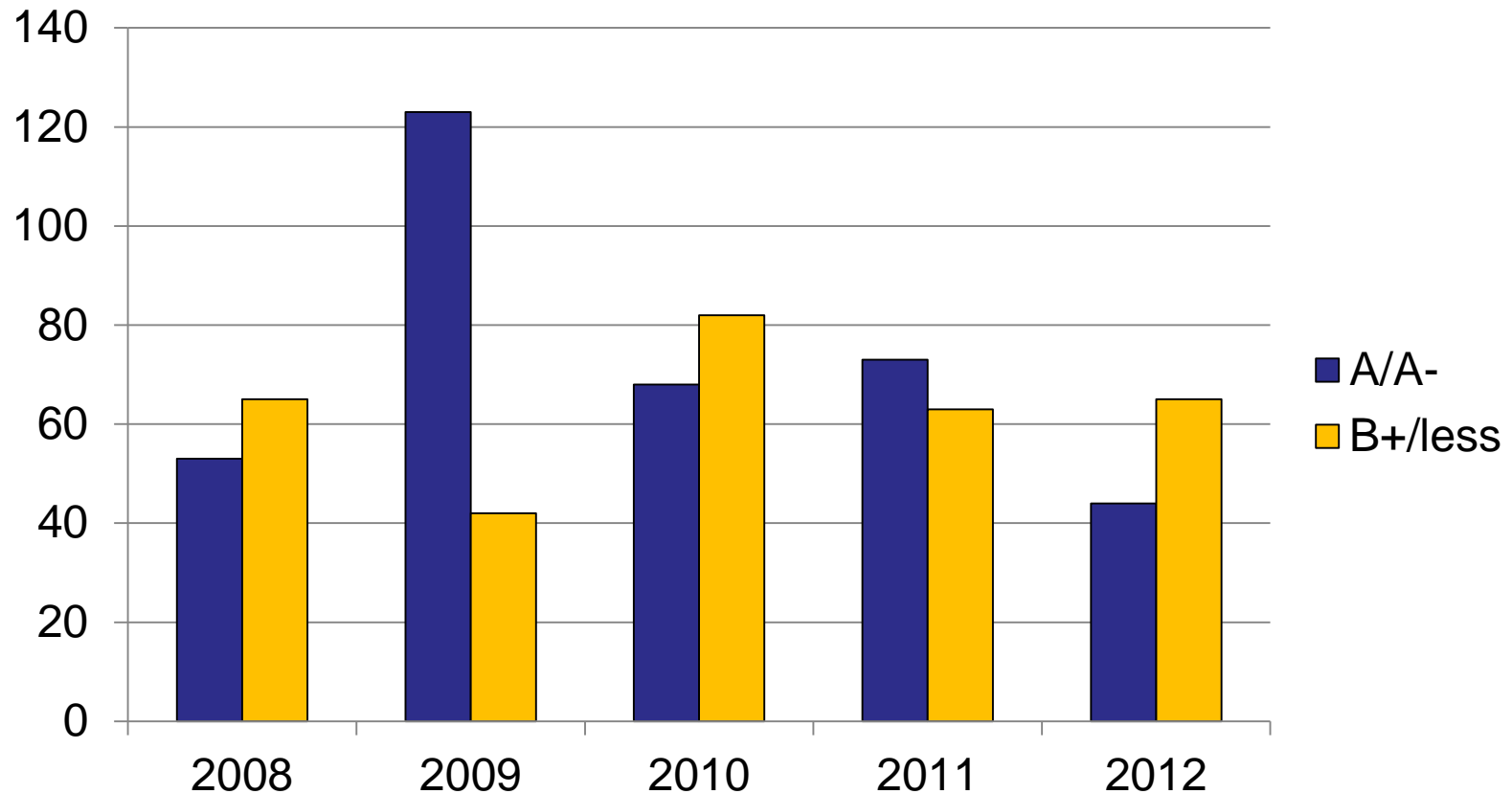


Mean Number of Content Files Viewed

LC



Mean Number of Calendar Views



Correlation with Final Percentage Grade

Interaction	2008	2009	2010	2011	2012
Number of sessions	.04	.22	.51	.49	.35
Total time in minutes	.43	.05	.08	.20	.60
Discussions posted	.12	.19	-.45	.39	.25
Discussions read	.05	.09	.25	.31	.30

Effect sizes: medium large

Correlation with Final Percentage Grade

Interaction	2008	2009	2010	2011	2012
Mail sent	.12	.26	-.18	-.06	.01
Mail read	.18	.10	.05	-.06	-.10
Content folders	.36	-.04	.31	.23	.28
Content files	.35	.13	.03	.06	.10
Calendar views	-.03	.26	-.04	.01	-.04

Effect sizes: medium

Summary

Engagement

- Overall engagement was related to performance
- LC, LI, LL all had an influence
- Instructors should engage students early and consistently
- Success involves overcoming transactional distance (Moore and Kearsley, 1996).

Summary

Specific Interactions

- Influence varied by year
- Any form or amount of interaction may not reliably predict performance
- Individual and group differences are important
- Affording students a variety of ways to interact with content, the instructor and each other is recommended

Summary

Future Research

- Replication across greater number and variety of courses
- Include data on interactions that happen outside of the CMS
- Focus on mental engagement, thought processes and preferences for particular tools and techniques

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Questions / Comments