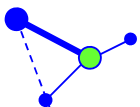




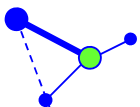
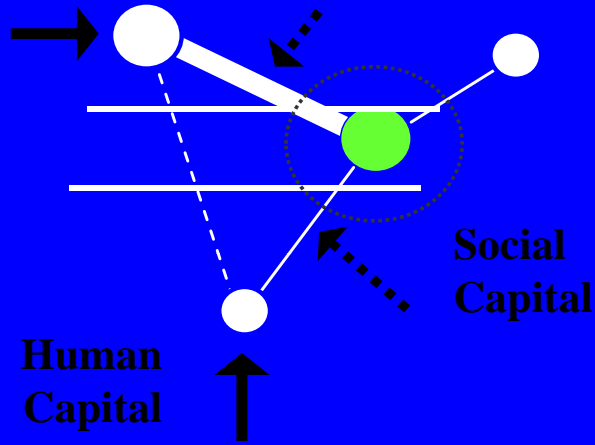
The Role of Social Capital In Human Capital Investment: A Social Network Approach To College Success in the First Year

Todd A. Berry (PhD, UW ELPA)



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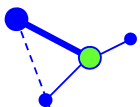


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Motives: Dissatisfaction with current view

- Higher ed. as investment: Rhetoric vs. reality
- Record enrollments vs. graduation stagnation
- Trad'l higher ed. research approach:
 - Retention/engagement as “black box”
 - Focus on staying, not succeeding
- Missing social dimension: human + social capital
- Social capital: ill-defined, misused, unapplied



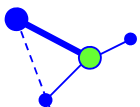
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Alternate approach

- “Old view” vs. investment lens
 - Attendance/retention vs. learning and degree (max ROI)
 - Evolution of economy, capital investment & new look
- Maximizing/leveraging human capital investment
 - Example: software engineering student
 - Social capital as “grease” enabling, maximizing
- “Operationalizing” social capital with network approach



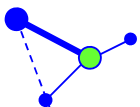
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Research questions and contributions

- Q. 1: What are the characteristics of freshman networks?
- Q. 2: To what degree are these characteristics related to first-year academic success and retention?
- Goals:
 - Contribute to higher ed: New view, penetrate “black box”
 - Demonstrate utility of social capital/networks to higher ed.
 - “On-the-ground” application of social capital



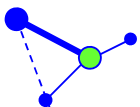
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Network literature in higher education

- “Special” student contexts
- Undergraduate pathologies
- Other undergraduate networks
- Networks and academic success



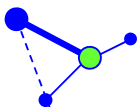
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Research process

- Site
- Pilot
- Sample design:
 - 3 pairs LC's-CREW's matched (N's)
- Survey & administration
- Data: Attributes, affiliation and study network ties

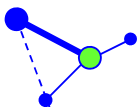
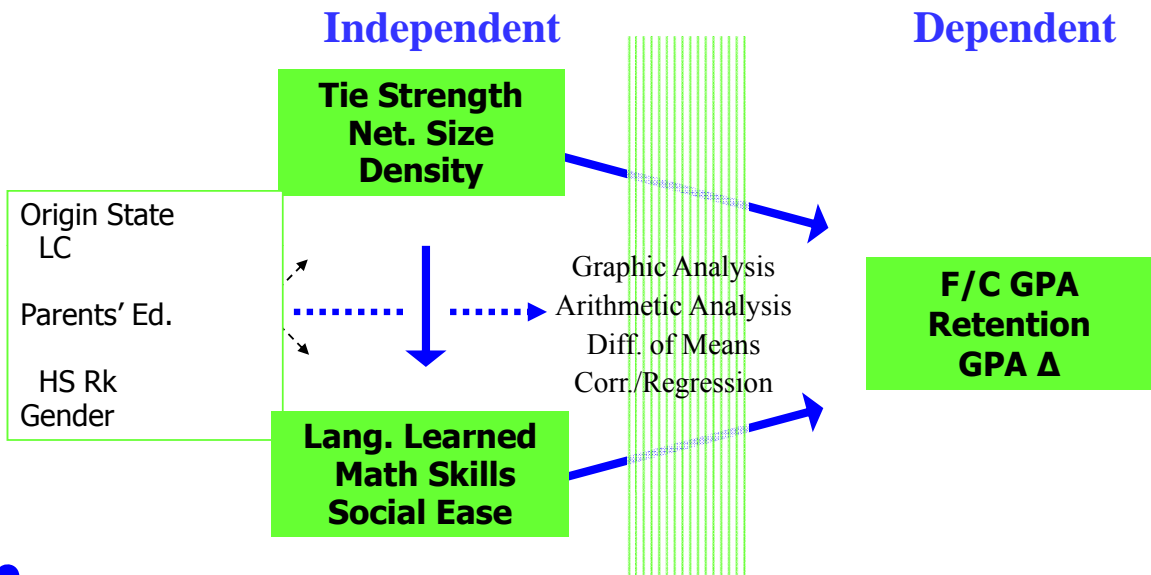


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Analytical model



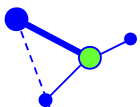
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Student profile

- Freshmen, 70% female; all on campus; few minority
- Fairly strong academically, educated parents
- Work: Half, 11+ hrs./week (fifth, off-campus, 15+ hrs.)
- 96% 'probably or definitely' returning (85% actually)



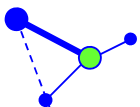
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Group memberships

- 63 groups, 2.30 avg.; generally one to four
- Athletic teams (#1 and most important, 4.56)
- Performing arts, student gov't, academic (#2 tie)
- Media groups (#2 importance, 4.42)
- Correlation: Group no. and FGPA (.32), CGPA (.22)

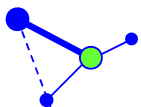
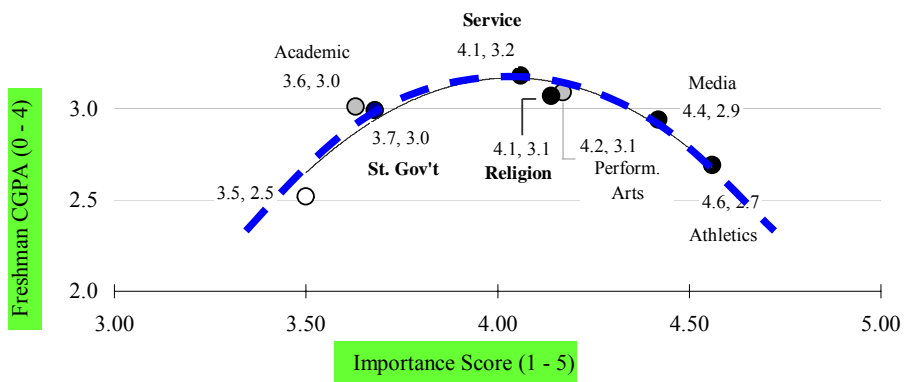


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Grades and group importance

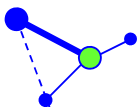


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Approaches

- Two networks: affiliation and study
- Methods:
 - Visual inspection and simple calculations
 - Quintiles and difference of means
 - Exploratory only: Linear models
- First-term (F) and cum. first-year (C) GPA's

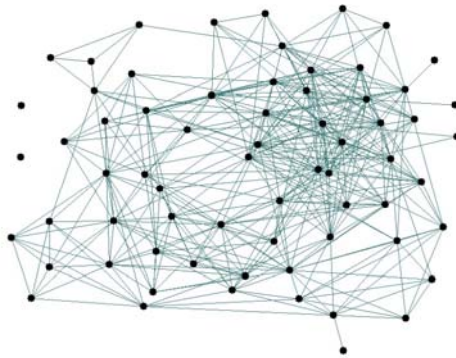


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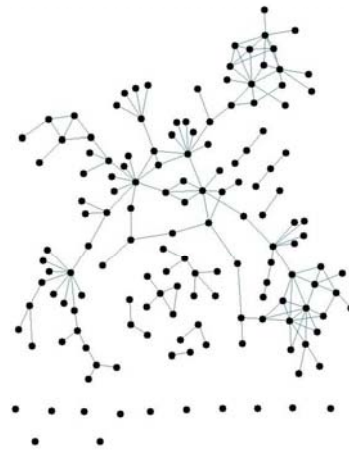
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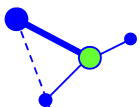
Affiliation (group) and Study Networks



Affiliation (N = 67)



Study (N = 148)



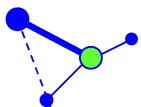
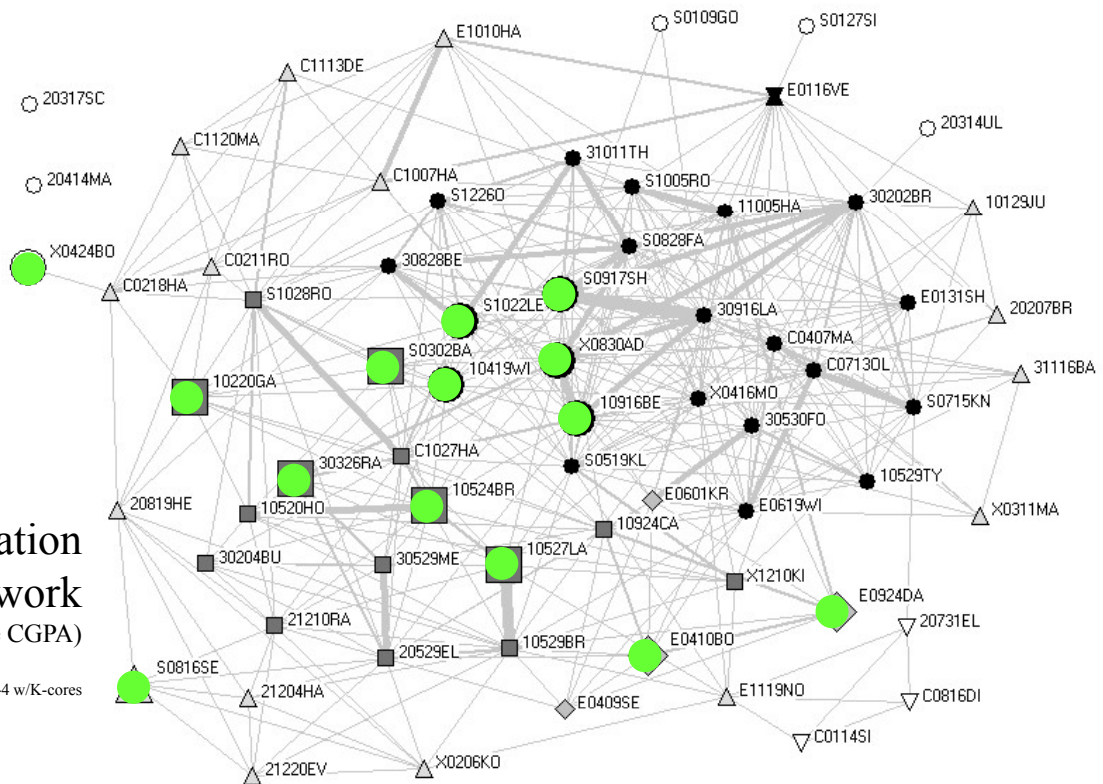
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Affiliation Network

(#1 qile CGPA)

4-4 w/K-cores

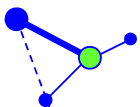


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Affiliation network: Prelim. findings

■ Tie number:FGPA		↘	3.12 - 2.61
	↓		
	CGPA	→	3.07 - 2.92
■ Tie importance:	FGPA	↘	2.64 - 3.06 - 2.61
	CGPA	↘	2.83 - 3.03 - 2.92
■ Intensity (N*I):	FGPA	↘	3.26 - 2.66
	CGPA	↘ ? →	3.20 - 2.43 - 2.93



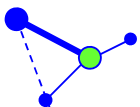
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Affiliation findings: High/Low achievers

- F/C GPA ranking; quintiles
- High achievers tend to: work less off-campus, have better educated mothers (fall only), and have better! HS records
- Fall: No network diff's, exc. $H > L$ on betweenness ($p = .09$)
- Year: $H_i > L_o$ on – more memberships ($p = .08$),
brokerage (.04), betweenness (.03), efficiency (.04)
- . . . but $H_i < L_o$ on density (.04)



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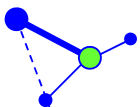
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Affiliation findings: Models

- HS rank predominant always (R^2 drops $\sim .30$ pts. w/o)

■ Variables:	<u>FGPA</u>	vs.	<u>CGPA</u>
HS rank	+ !		+ !
Gender	-		- ?
Mother's ed.	+		+ ?
Tie import.	-		o
Betweenness	+		+ ?
Constraint	o		- ?



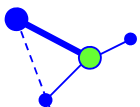
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Affiliation network and retention

- Returnees (56) vs. dropouts (10)
- Tie number, size, centrality variables: $R > D$, ns
- Density, constraint: $R < D$, ns
- Group importance: 4.11 vs. 2.93 ($t = 2.14$, $p = .06$)
- Favorable network position:
R > D: Brokerage (.07), betweenness (.01), efficiency (.05)



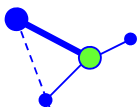
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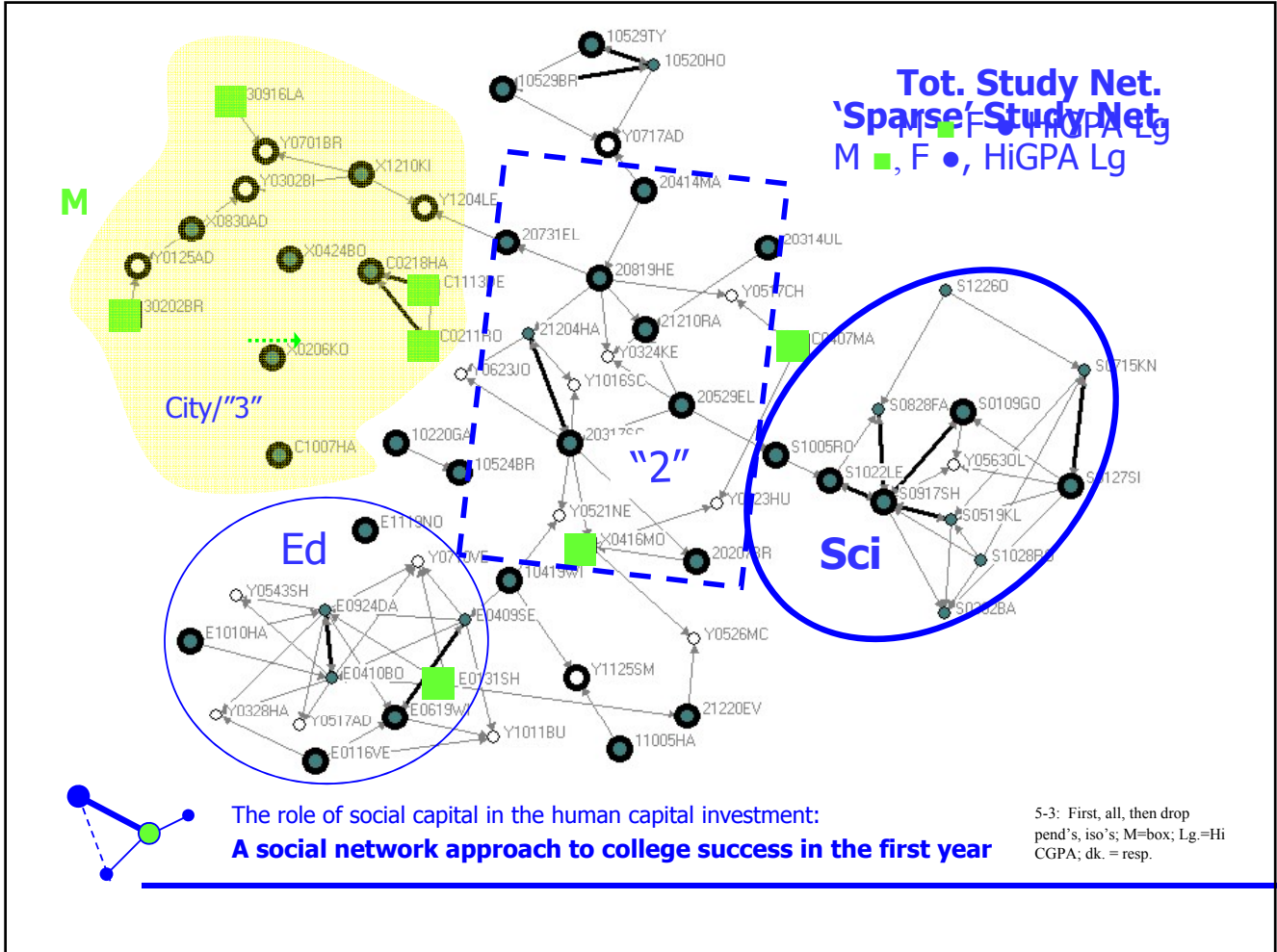
Study "buddy" network

- 50 students, 174 ties (mean, 2.60); 17 no ties
- Tie importance: 72%, 4 or 5; mean of 50 tied = 3.93
- Women more connected than men; men more often isolates
- 89 students with limited linkage (remember nonsurveyed) found in isolates (12), pendants (49), fragments (8)
- Source: Class (51% 1st quintile, 40% 5th qile)
Dorm (35%, 33%)



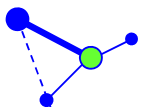
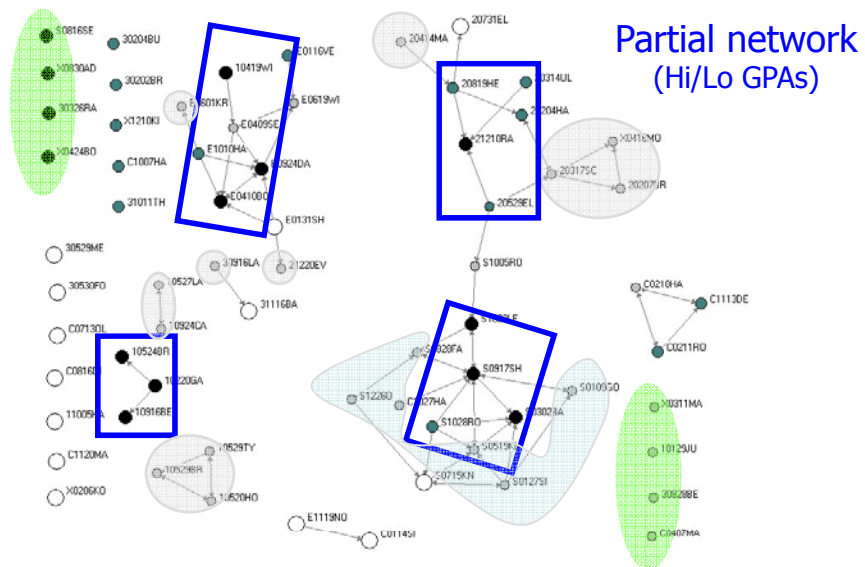
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Study network findings: High/low achievers



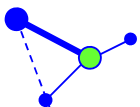
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5-5 Q'ile 1, 2 dk & 5 (lt gr)



Study network: High and low achievers

- High achiever tendencies (HS, mother's ed., gender)
- Fall: $H_i > L_o$; mostly not significant
Ego net size ($p = .09$), centrality (.09), and in-ties (.03)
- Year end: $H_i > L_o$ — No. ties, ego net. size, effective size, 2-step reach, centrality, in-ties (all $p \leq .05$)
- Fall to spring difference
- So . . . size, reach, efficiency, centrality



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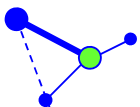
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Study network: Models

- HS rank predominant always (R^2 drops $\sim .30$ pts. w/o)

■ Variables:	<u>FGPA</u>	vs.	<u>CGPA</u>
HS rank	+ !		+ !
Gender	- ?		0
Mother's ed.	0		0
Tie import.	- ?		0
Betweenness	0		0
Constraint	0		- ?
Eff. Size	+ ?		0



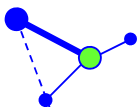
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Study network and retention

- Personal attributes: Returnees (56) > Dropouts (10):
Mother's ed. and HS rank
- Campus measures
R > D: Dorm satisf'n, hrs. worked on campus, return intent
R < D: hours worked off campus
- Study ties, R > D: Importance, in-ties (p = .08)
- Network measures: R > D: EN size (p = .09), eff. size (.10)
density (.02), 2-step reach (.07), betweenness (.07)
centrality (.09)



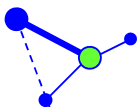
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What was learned about academic performance?

- Two networks differ: “bee hive” vs. “chain” (~bamboo)
- Corollary: proximity matters; living or learning together
- High school rank matters
- Fall is weird; network/family matters more early, prep. Later
- Tie number: More tends to be better; isolation is bad
- Tie strength: Good, but not too strong (concavity)



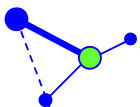
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What was learned . . .

- Density, constraint: adverse by year's end?
- Being central is good, so is being “between”
- Tie efficiency and broker position are good



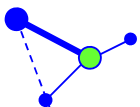
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What did we learn about retention?

- Gender, family educational background, HS performance
- Dorm satisfaction, work
- Tie number importance
- Network size, reach “friends of friends”
- Network betweenness, centrality
- Network brokerage, efficiency . . . density



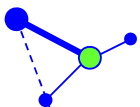
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Applying what we learned . . .

- Men are different and need special attention
- Planned communities can help
- Not all group engagement is equal; “ROI”
- Network awareness for RA’s, advisors, faculty
- Monitor isolation, closure; program to avoid
- Early is important: admissions and orientation
- Incorporate lessons in admissions, financial aid practices
- Network survey as retention predictor



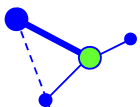
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Applying what we learned . . .

Questions?



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