HARVARD
GRADUATE SCHOOL OF EDUCATION

University of St.Gallen

Student-Centered Learning Environments in Higher Education Classrooms

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Disposition

Student-centered learning (SCL) in the context of the Bologna Process

Research questions and conceptual framework

Multiple ethnographic case study research (CSR)

Situative educational model for the design of powerful student-centered learning environments (SCLEs)

- Design elements
- Instructional strategies

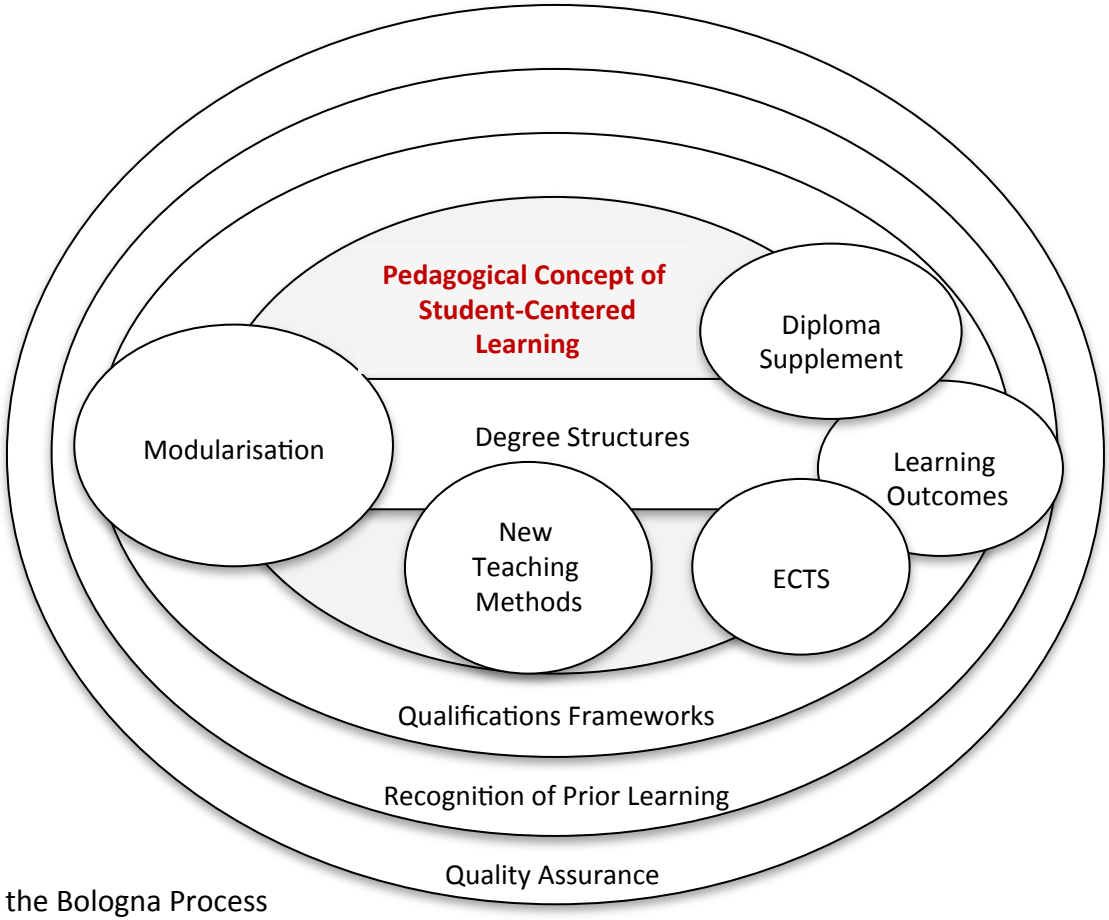
Implications for higher education classrooms and institutions

Student-centered learning (SCL) in the context of the Bologna Process

Higher education priority areas up to 2020:

- Student-centered learning
- Effective learning activities
- Promoting pedagogical innovation in SCLEs

(Leuven/Louvain-la-Neuve Communiqué, 2009; Yerevan Communiqué, 2015)



Architecture of the Bologna Process

Student-centered learning (SCL)

- is rooted in a *constructivist view* of learning and instruction that puts the *student at the heart* of the learning process.
- unfolds a broad spectrum of *participation-oriented* learning and teaching *practices* to support *deep conceptual understanding*.

Deep conceptual understanding or *deep learning* focuses on sense making and involves both knowing and doing, with students acquiring the right kind of knowledge at hand and the capacity to use it flexibly in different contexts.

Student-centered learning environments (SCLEs)

Core characteristics:

- Curriculum for understanding
- Customised learning
- Supportive community of learners
- Ongoing assessment and feedback
- Adaptive instruction

Different variants of SCLEs:

- problem-based learning
- anchored instruction
- cognitive apprenticeships
- project-based learning
- learning communities

Research questions

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How can instructors design and bring to life powerful SCLEs that provide students with opportunities for deep learning?

1) Literature review & conceptual framework development:
What common design principles and instructional quality dimensions and features of SCLEs can be discerned based on empirical education research on the effectiveness and quality of learning and instruction?

2) Multiple ethnographic case study research
How do expert instructors in the field of higher education design and bring to life SCLEs that provide opportunities for deep learning?

Empirical research sub-questions

?

Ad 2) How do expert instructors in the field of higher education design and bring to life SCLEs that provide students with opportunities for deep learning?

- What are characteristic curricular design elements and quality features of the SCLEs under study (e.g., goals and content, course structure, activities)? ✔
- Instructional strategies: How do the instructors
  - scaffold participatory processes of knowledge construction?
  - cultivate a classroom community of learners over time? ✔
- What are the teaching and learning challenges these student-centered classrooms present for the instructors and/or students?

Conceptual framework as starting point

Common design principles of SCLEs	Instructional quality dimensions and features	
	1. Quality of teaching and learning processes	2. Quality of classroom interaction and climate
Curriculum for understanding Customised learning Supportive community of learners Ongoing assess-ment and tailored feedback Adaptive instruction	*Cognitive activation* (e.g., intellectual challenge, higher-order thinking) *Learning-focused activities* (e.g., constructive alignment with goals and assessment, student self-regulation, student choice) *Adaptive learning support* (e.g., facilitator, modelling, observing/ listening, teacher clarity behaviors)	*Dialogic discourse practices* – *Teacher-student talk* in the large group (e.g., distribution of agency, accountable talk) – *Student-student talk* in small groups (e.g., exploratory talk, autonomy) *Norms of interaction* (e.g., listening, revoicing, discourse and thinking routines) *Supportive climate* (e.g., concern and respect, rapport, teacher enthusiasm, constructive feedback)
Course design	Classroom learning, teaching, interaction and climate	

Multiple ethnographic CSR: cases

Harvard Graduate School of Education,
1-year-long Master degree, Ed.M.

Case units: Three weekly courses with
25 to 38 students and 3 instructors

Duckworth case

Blythe case

Wilson case

Selection criteria: expert instructor in higher education, constructivist instructor beliefs, SCLE (according to core characteristics)

Multiple ethnographic CSR: data collection

Participant observations (41 class sessions)	**Videotaping in the classroom (84 hours)**
- Duckworth case: 12 out of 13 class sessions (92% of class time) - Blythe case: 21 out of 25 class sessions (84% of class time) - Wilson case: 8 out of 12 class sessions (67% of class time)	- Duckworth case: 22 hours (92% of class time) - Blythe case: 37 hours (68% of class time) - Wilson case: 25 hours (75% of class time)
Interviews (27 interview hours)	**Course evaluation surveys (N = 404)***
Student interviews (21 interview hours) Duckworth case: 7.5 h (5 interv.; M = 89 min.; SD = 29) Blythe case: 6 h (5 interv.; M = 74 min.; SD = 29) Wilson case: 7.5 h (6 interv., M = 73 min.; SD = 20) *Instructor interviews* (6 interview hours) Duckworth case: 1.5 hours Blythe case: 3 hours Wilson case: 1.5 hours	- Duckworth case: six student cohorts (due to two parallel courses each year; N = 230) - Blythe case: three student cohorts (N = 67) - Wilson case: three student cohorts (N = 107) * over the course of three subsequent years for each course

Wilson case: “group learning” (1)

Students learn about key research findings on the nature of group learning and apply these concepts in practice by designing, observing, and reflecting upon group learning experiences.

Fall 2010

12 seminar days (165 minutes each)

33 students (17 male)

Wilson case: "group learning" (2)

Guiding course questions:

1) What does it mean for a group to learn?
2) What are the key dynamics that support/ thwart group learning?
3) How can leaders support group learning?

Wilson case
Updates and news
Introduction (brief overview of today's class) and related student questions
▪ Article discussion groups (ADGs) (40–75 minutes) What are 3–4 key ideas? What are 2–3 connections/differences? What are implications (or: ask your own third question)? ▪ Student presentations/class discussions
Break (15 minutes)
▪ Mini-lecture/experiential activities and related large class discussion (10–40 minutes)
Student-led group discussions (10–30 minutes)
Short preview for the next class

Typical orchestration of course activities (pattern)

Comparative cross case analysis

A. Students' perceived teaching and learning quality (student course evaluations, N = 404, several cohorts per course)

B. Situative educational model – basic architecture of powerful SCLEs

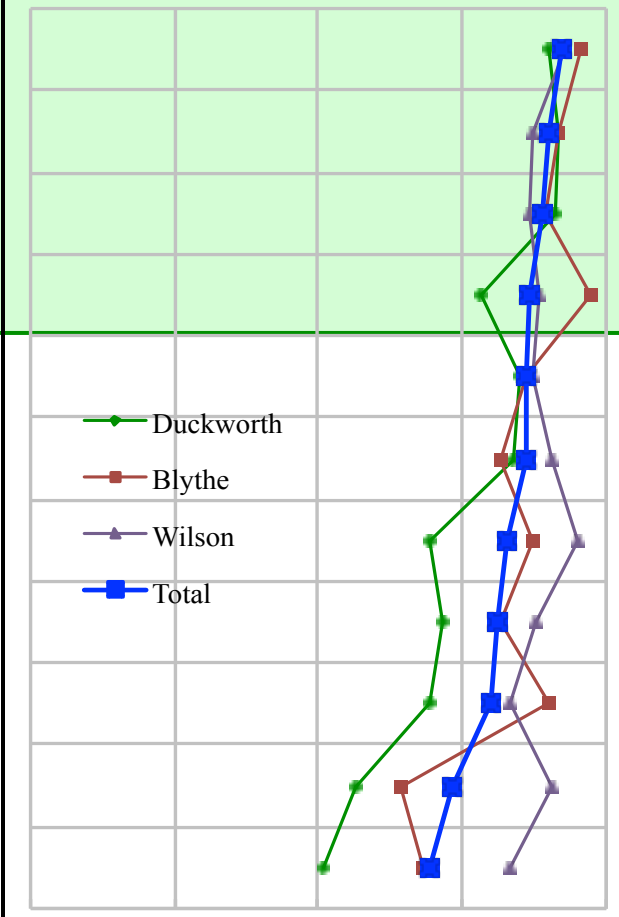
- Characteristic curricular design elements (5) and quality features of SCLEs
- Deeper-level instructional quality dimensions and features

A1. Students' perceived t&l quality: student benefit (in %)

	Duckworth case			Blythe case		Wilson case		Average
	Case stu-dy T-440B	T-440B 3 cohorts	T-440A 3 cohorts	Case study	3 cohorts	Case study	3 cohorts	9 cohorts
Rating	N = 38	N = 111	N = 118	N = 25	N = 67	N = 31	N = 105	N = 283
4–5	89	90	89	100	98	87	88	92
3	8	8	8	0	2	10	9	6
1–2	3	2	3	0	0	3	3	2

A2. Students' perceived t&l quality: course activities

Example: Course activities and materials



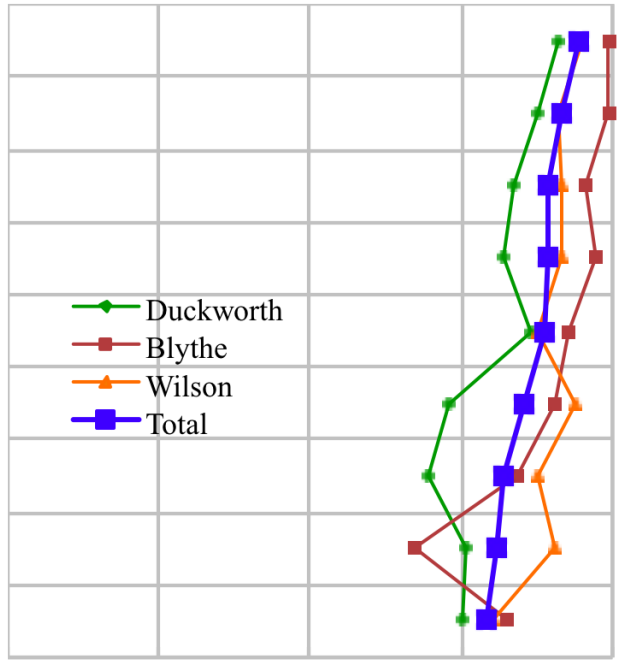
	M	MD	SD
(B1) Course provided effective opportunities to learn from other students	4.70	5.0	.572
(B2) Assignments supported and reinforced the goals of the course	4.60	5.0	.663
(B3) Assignments promoted learning and growth	4.56	5.0	.695
(B4) Class discussions enhanced the understanding of the subject material	4.47	5.0	.754
(B5) Assigned readings were valuable and of high quality	4.44	5.0	.733
(B6) Course activities were aligned with the syllabus	4.44	5.0	.709
(B7) Class lectures and discussions were related to assigned readings	4.32	5.0	.950
(B8) Technology was used to facilitate communication between students and instructors	4.24	5.0	.979
(B9) Class lectures clarified the subject material	4.19	4.0	.911
(B10) Technology was used to enable discussions outside of class	3.93	4.0	1.250
(B11) Technology was used to illustrate and deepen understanding of subject matter	3.77	4.0	1.195

Basis: N = 268 (T-440B: 100; T-139: 63; T-402: 105)

A3. Students' perceived t&l quality: instructor

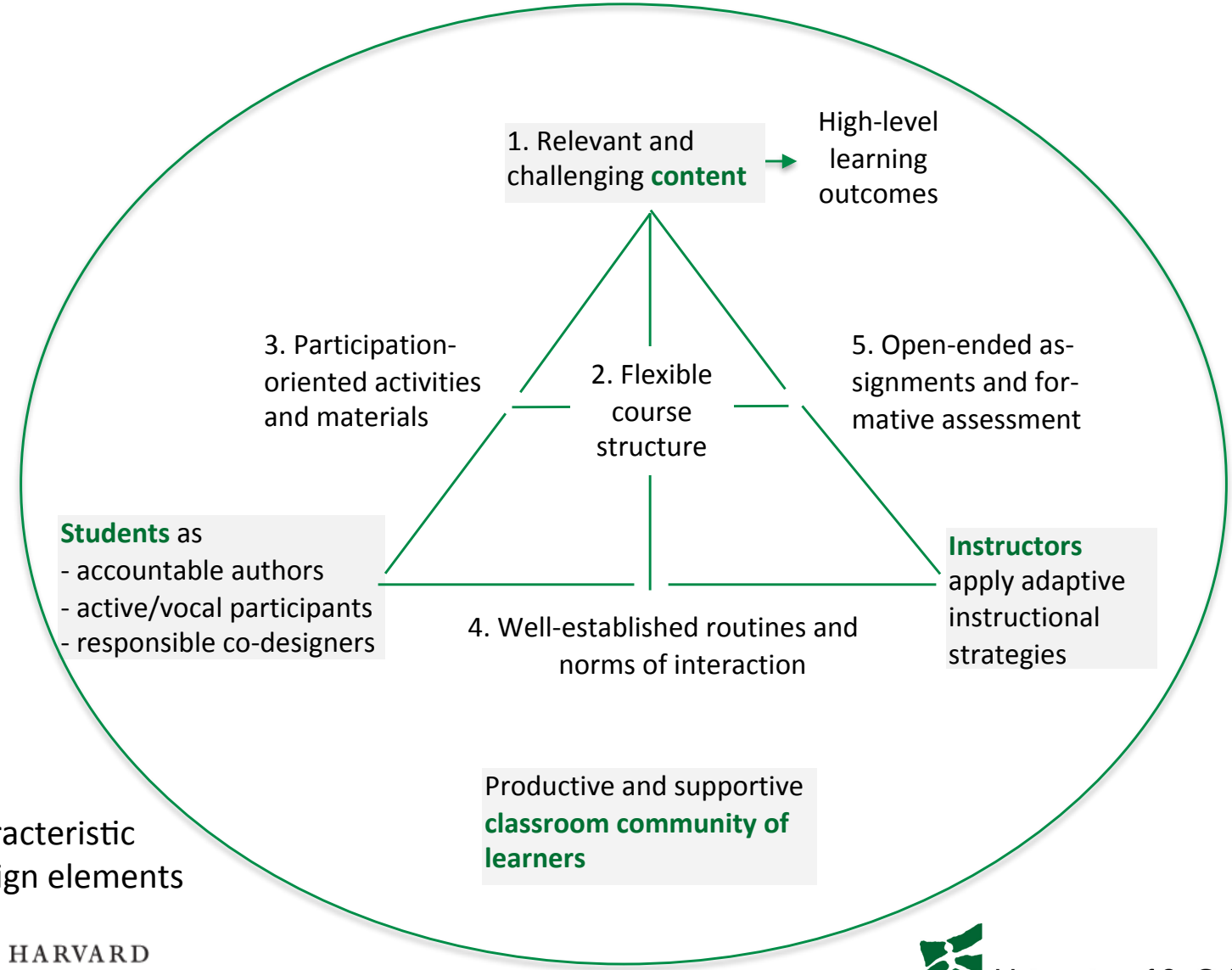
Example: Instructor

The instructor	Not at all … Very much	M	MD	SD
(C1) responded to students respectfully		4.78	5.0	.565
(C2) established an environment conducive to learning		4.66	5.0	.628
(C3) encouraged diverse opinions and perspectives		4.58	5.0	.756
(C4) effectively led classroom discussions		4.57	5.0	.724
(C5) was accessible to students outside of class		4.54	5.0	.769
(C6) gave clear and well-structured presentations		4.41	5.0	.883
(C7) provided helpful feedback on course assignments		4.29	5.0	1.015
(C8) provided timely feedback on course assignments		4.23	5.0	1.059
(C9) clearly explained how course assignments would be evaluated		4.16	4.0	1.028



Basis: N = 264 (T-440B: 94; T-139: 65; T-402: 105)

B. Situative educational model – basic architecture of powerful SCLEs

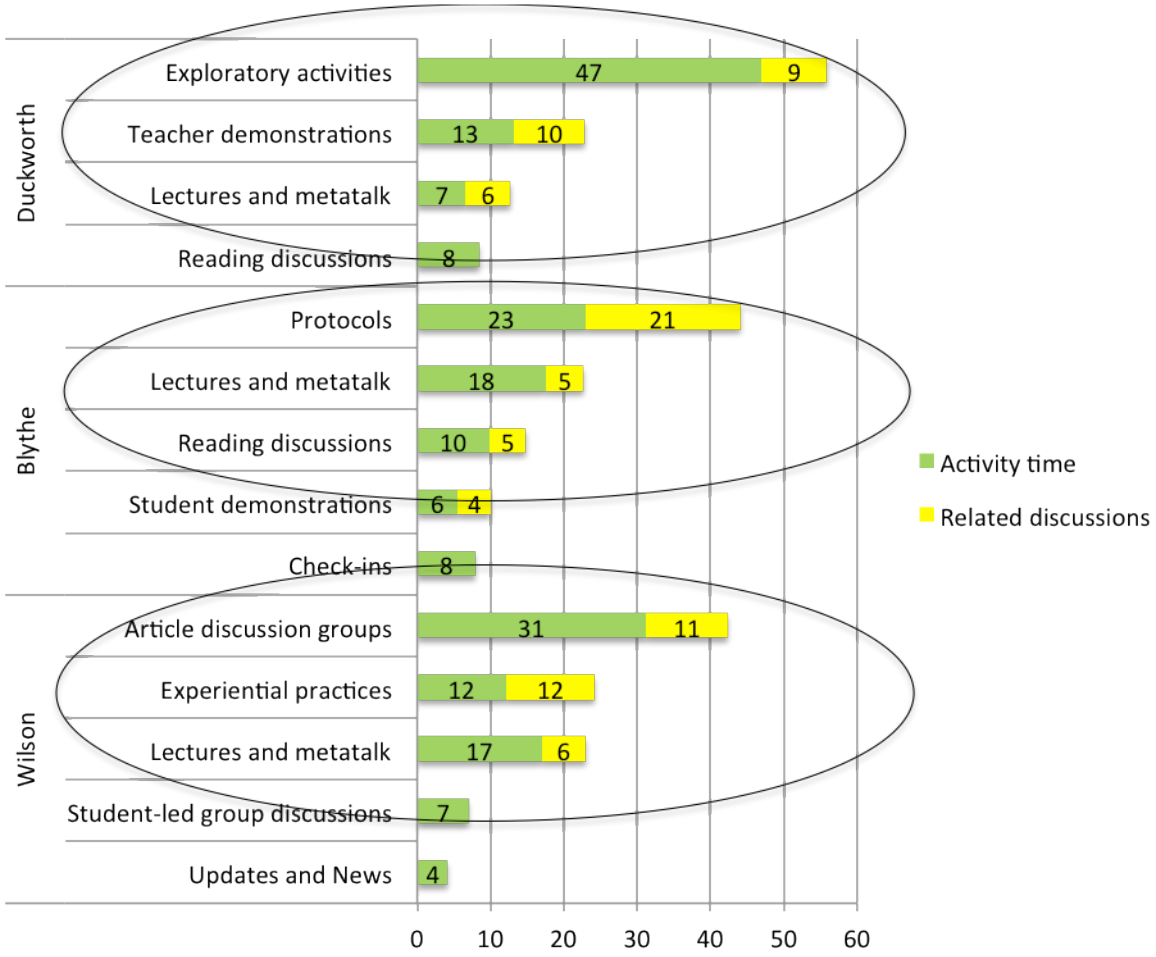


1.-5. = characteristic course design elements

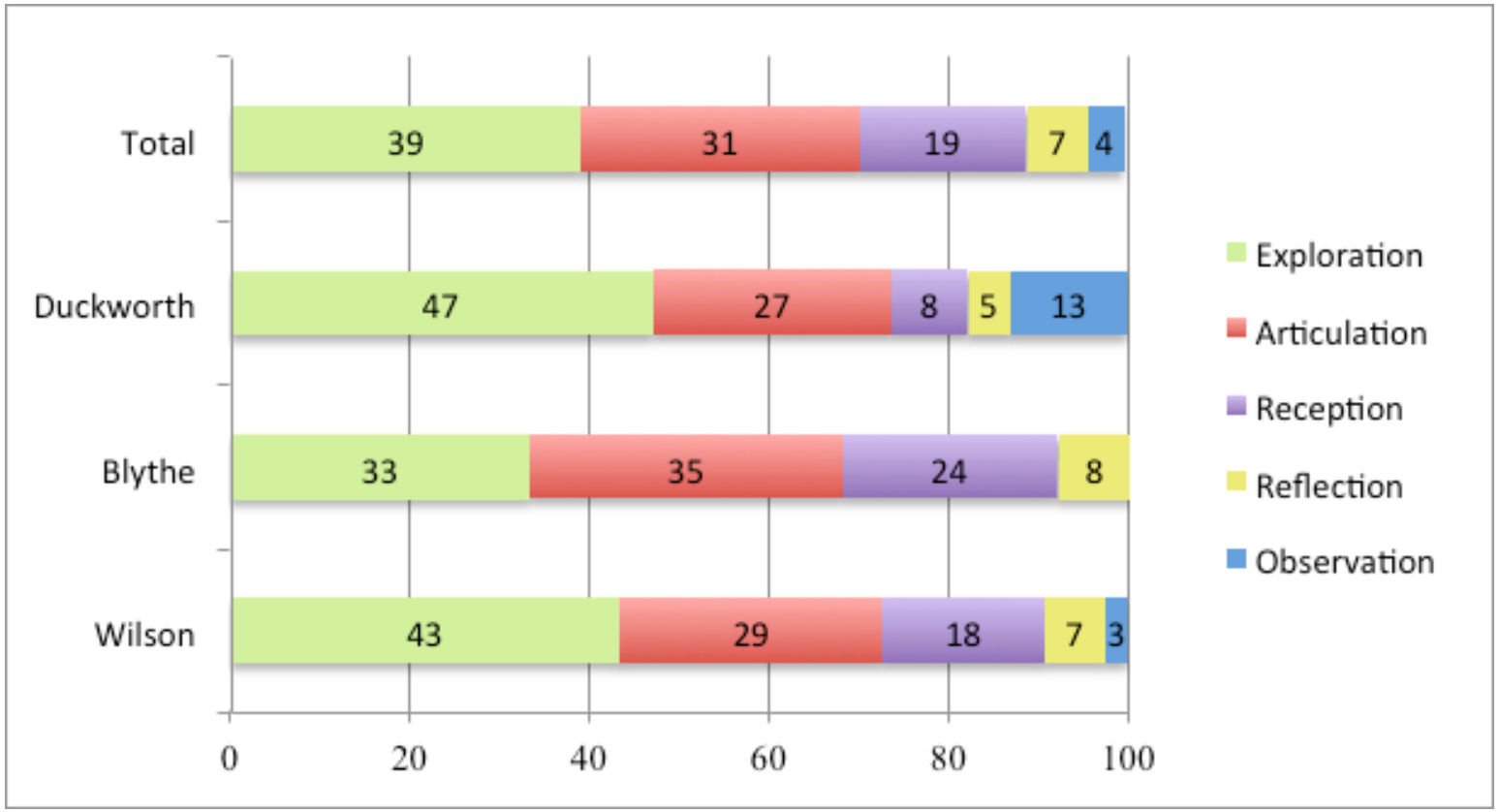
Characteristic curricular design elements and quality features of powerful SCLEs

1. Relevant and challenging objectives and content (e.g., concepts and practices)
2. Flexible course structure (e.g., social form of instructional activities)
3. Participation-oriented course activities and materials
4. Well-established routines and norms of interaction (e.g., teaching patterns, behavioral norms)
5. Open-ended assignments and formative assessment

Ad 3. Participation-oriented course activities and materials – main course activities (in %)



Ad 3. Participation-oriented course activities and materials – student activities (in %)



Ad 4. Well-established routines and norms of interaction

- Discussion-oriented seating arrangements
- Ground rules (calling each other by first names, behavioral class norms, procedural steps for activities)
- Re-occurring teaching patterns

Ad 4. Ground rules – behavioral class norms: Blythe case (excerpt)

Prepare

Come to class fully prepared, having done and reflected on the reading and writing, ready to develop new ideas.

Listen

- Attentive, respectful, self-aware listening
- Try not to interrupt

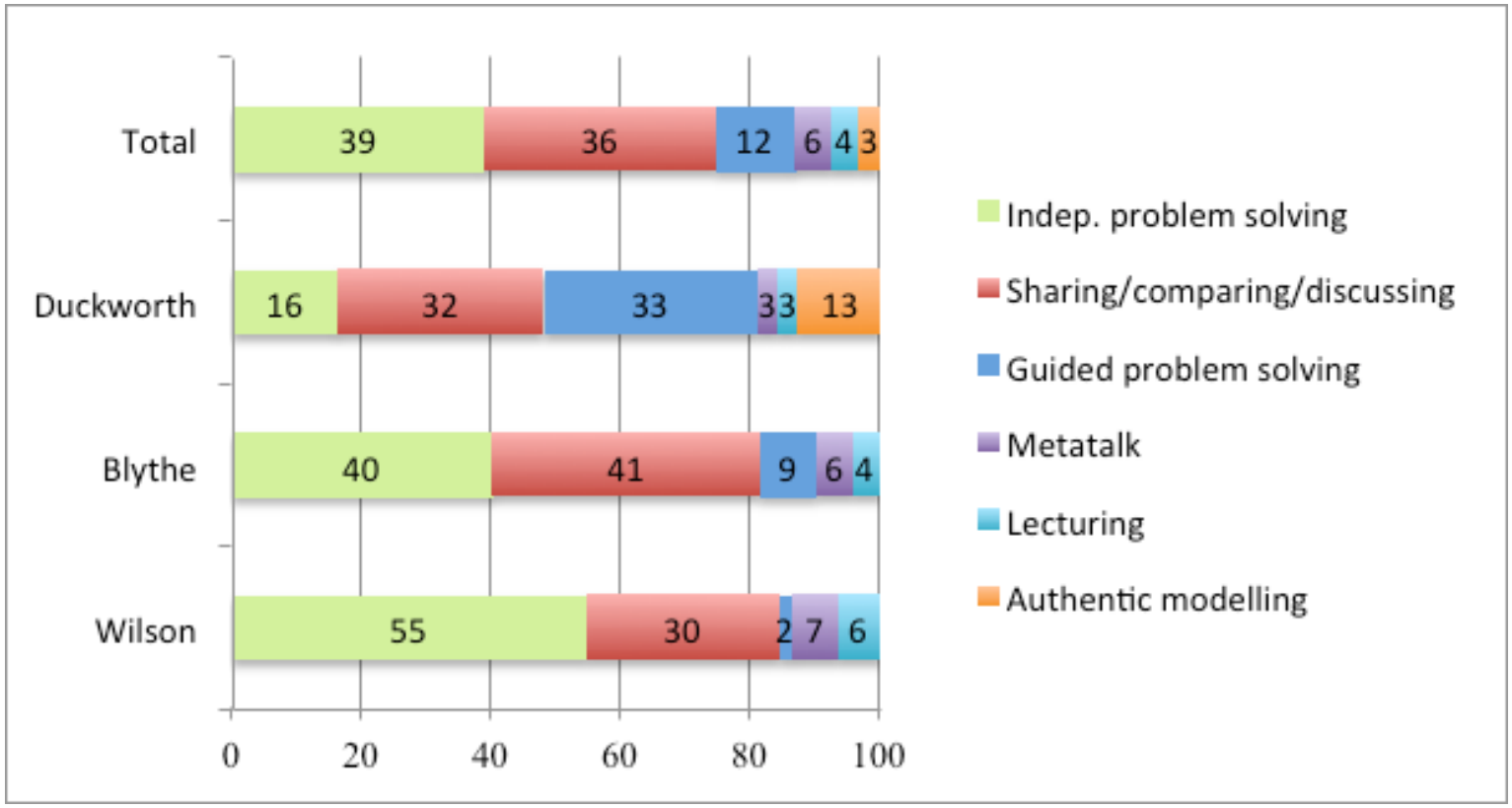
Cultivate an open mind

- Welcome diversity of opinions and experiences through collaborative discussion. Be open to all ideas, experiences, and questions.
- Play the Believing Game with diverse opinions. Be curious: seek to understand.
- Give things the time they need. Confusion and discomfort are part of the process.

Contribute

- Full disclosure of ideas: It's okay to "think out loud" and work through thoughts.
- Keep it relevant: While thinking out loud, also try to keep things connected to the topics at hand.
- Share the air: be mindful of how much you are talking.
- Speak thoughtfully and respectfully. Trust that others are doing the same.
- …

Ad 4. Re-occurring teaching patterns (in %)



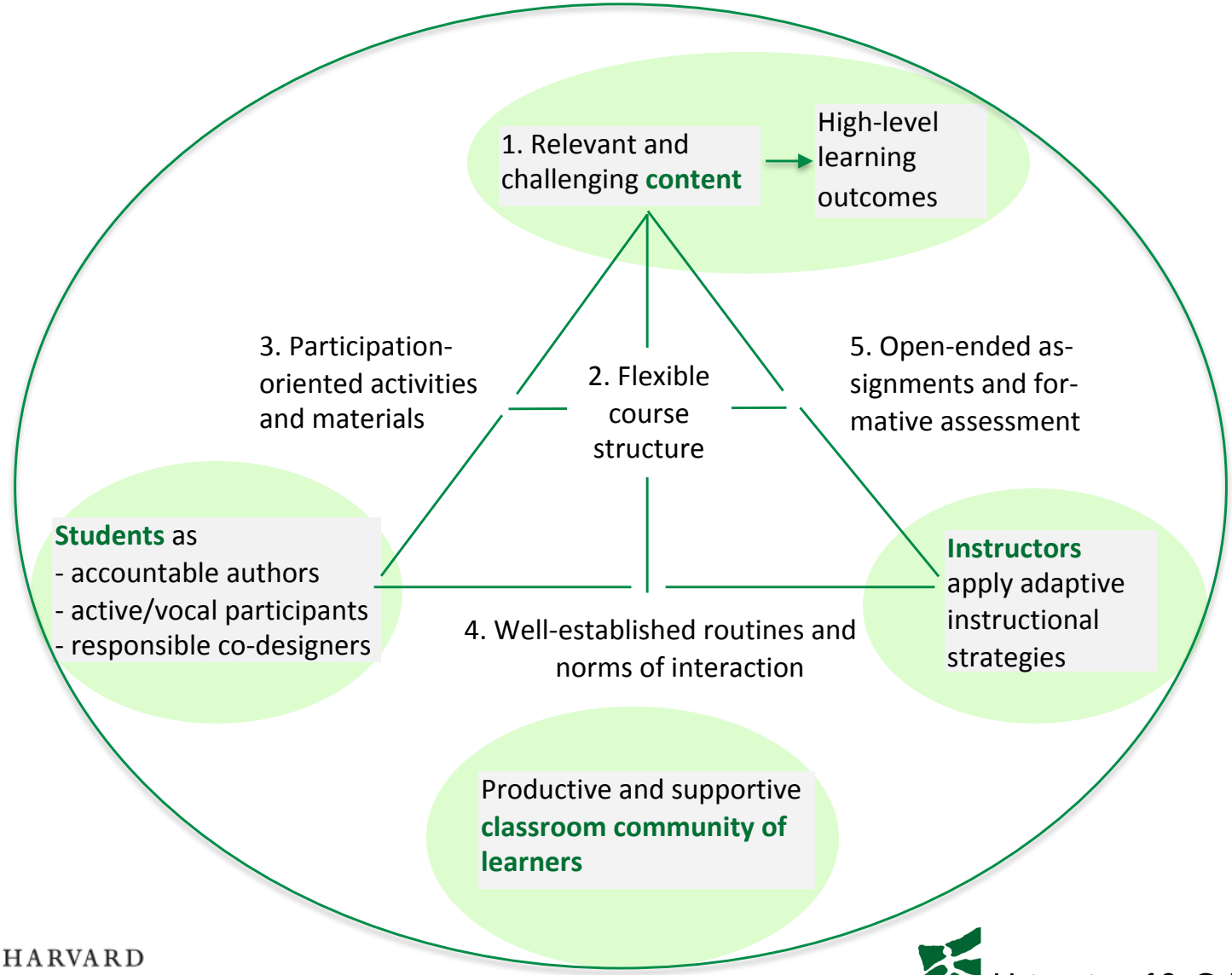
… promoting deep learning …

«… the formula *constructivism = hands-on activity* is a formula for educational disaster…»

«Methods that rely on doing or discussing should be judged not on how much doing or discussing is involved but rather on the degree to which they promote appropriate cognitive processing.»

«A basic premise in constructivism is that meaningful learning occurs when the learner strives to make sense of the presented material by selecting relevant incoming information, organizing it into a coherent structure, and integrating it with other organized knowledge.» (Mayer, 2004, p. 17)

B. Situative educational model – deeper-level instructional quality dimensions and features



Deeper-level instructional quality dimensions and features of powerful SCLEs (1)

Relevant and challenging content (learning outcomes):

- ✓ Foster students' performances of conceptual understanding,
- ✓ students' self-regulated learning capacities, and
- ✓ students' identity as cognitively active and engaged participants.

Affordances of the learning tasks:

- ✓ high levels of cognitive demand
- ✓ conceptual agency
- ✓ productive talk
- ✓ practical relevance (authenticity)
- ✓ ensure that students understand the task

Deeper-level instructional quality dimensions and features of powerful SCLEs (2)

Positioning of students as:

- accountable authors in knowledge construction processes
- active and vocal participants in interactions
- responsible co-designers of the educational agenda

Deeper-level instructional quality dimensions and features of powerful SCLEs (3)

Adaptive instructional strategies: Scaffolding students' participatory processes of knowledge construction:

- ✓ Independent problem solving in small inquiry groups
- ✓ Guided problem solving in the large group
- ✓ Dialogic disciplinary and reflective large group discussions
- ✓ Mini-Lectures (including metatalk) and modelling

Deeper-level instructional quality dimensions and features of powerful SCLEs (4)

Adaptive instructional strategies: Cultivating a productive and supportive classroom community of learners:

- ✓ Intellectual climate of active student sense making (expectations)
- ✓ Iterative cycles of feedback for further student learning
- ✓ Positive emotional climate of mutual respect, trust and belonging

Implications for higher education classrooms and institutions

Awareness about instructors' and students' educational beliefs

Balanced orchestration of well-designed participation-oriented course activities

Productive instructional and dialogic classroom talk

Promoting the scholarship of teaching in higher education

Professional faculty development and support

Děkuji vám za pozornost!

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Additional: Hampering aspects (challenges)

Challenges with regard to …		
course design elements and support structures	scaffolding participatory processes of knowledge construction	cultivating a classroom community of learners
– Student preparation – Demanding open-ended assignments – Relevance to real-life contexts – Adaptive nature of the course structure and activities – Least valuable of all activities – Class size and teacher-centred classroom spaces – Cultural and institutional forces at the school	– Keeping all students engaged in large group explorations – Validating a variety of student ideas – Engaging in metatalk to reflect on joint learning experiences – Ensuring the educational value of small group work – Socially shared regulation in small groups	– Building an atmosphere of trust and safety to facilitate participation – Tense class atmosphere during the first few weeks – Providing timely feedback and formative assessment