CITE Colloquium on 9 June 9 2000
Welcome To All of You !!!

Theme: Collaborative Knowledge-building

Discussant: Prof. Marlene Scardamalia

Title:

Learning and Power Relations
on Collaborative Knowledge Building Cyber-Discourse

Paper Presenter :

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The paper is dedicated to:
Carl Bereiter;
Robbie Case (untimely death);
Allan Collins;
Eugene Ho (untimely death);
Sir Karl Popper;
Marlene Scardamalia
for their great contributions to cognitive science,
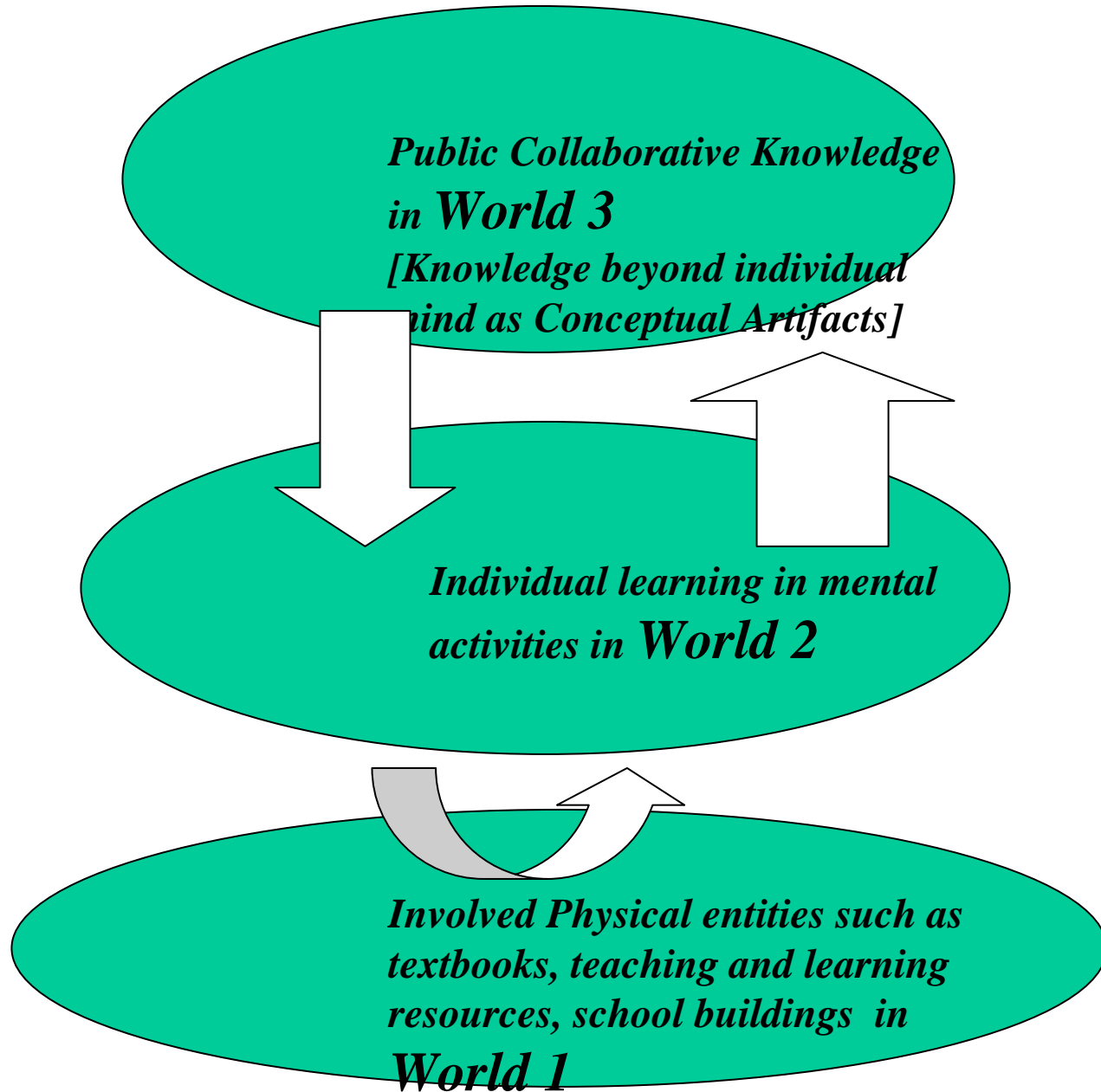education and philosophy of science!

Time Schedule :

11:30 -11:35 a.m. a brief summary of Carl Bereiter's & Marlene
Scardamalia's works on collaborative
Knowledge-building Discourse

11:35-11:40 a.m. Importance of power-cohesive domain
in knowledge societies

11:40-11:45 a.m. implications for the local situation in Hong Kong

Public Collaborative Knowledge
in **World 3**
[Knowledge beyond individual mind as Conceptual Artifacts]

Individual learning in mental activities in World 2

Involved Physical entities such as textbooks, teaching and learning resources, school buildings in World 1

Bereiter provides an <u>ultimate concern</u> for knowledge-building discourse.

His argument hinges upon Karl Popper 's 3-world schema [in Popper (1972; 1999); Popper & Eccles (1977)]
Bereiter and Scardamalia articulate an intentional learning theory using a communal database.

They contend that students can build up their public knowledge constructively in World 3 (which is composed of all abstract academic theories, scientific hypotheses, conceptual works and so forth), when students socially interact with each other in data-support cyberspace.

Besides this World 3, students' learning embedded in individual mental activities is in World 2 (which contains all mental entities) and

they are themselves physically involved in World 1 (which is consisted

of all physical things).

Conceptual Artifacts

Assertive Artifacts: "Truths and falsehoods

Abstract Cultural artifacts

Cultural Artifacts

What is 'conceptual artifacts"?

Concepts: discussible ideas from theories, designs and plans to abstract concepts;

Artifacts: human creations for some purposes or motivation.

Properties:

historical, descriptive, evaluative and amendable, of multiple uses, constructive discussion topics with variation of human understanding

three tests for identification:

1. As a cognitive tool;
2. As a mean for rationalizing human behavior;
3. Through corroboration, evolutionary growth of assertive artifacts

Progressive discourse

Long-term and wide-range visibility

Commitments:

improvability;

expand factual base,

gain mutual understanding,

selective criticism;

promoting non-sectorianism

Knowledge-building is not *only a process*, but also conceptual artifacts *as ultimate products*, in World 3.

Learning in individual minds only in World 2;

Public knowledge is collaboratively constructed in World 3 which causally initiate effects in World 1 through World 2 .

Euclid's theorem in World 3 modified World 1 with his printed works through his mental acts of formulating the proof in World 2.

Essence of 'World 3'

1. Public world of knowledge embedded in social practice

2. World 2.5: interactions of World 2 and World 3

3. Not the ultra-World 1, in Platonic sense: socially constructed and created by human enterprise;

4. Both 'acculturation (accommodating into new environment'and 'enculturation (assimilating into familiar ones)'into World 3

Bereiter and Scardamalia argue:

a. malfunctioning of current schooling systems:

heavy stress on individual learning but not on public

knowledge; public-oriented education, unintelligible

textbook-bound; limited teacher-student interactions;

b. many constructivist, situational and cognitive learning

theories rest on some deeply rooted metaphors:

"mind-as-container" and "mind-a-filing-cabinet'

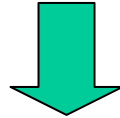c. a connectionist theory of mind and knowledge:

   'metaphor as pattern recognizer and respondent'

d. Beyond Bloom's taxonomy, 7-level for collaborative

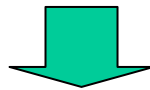   knowledge-building discourse:

   level 0: knowledge as 'the ways things are'';

   level 1: knowledge as individualized mental states;

   level 2: knowledge as itemizable mental contents;

   level 3: knowledge as socially representable: use others' cognitive bases to

           represent, share and interpret learning topics;
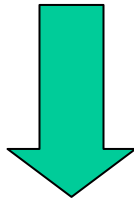
   level 4: knowledge as viewable from different perspectives:

           view knowledge in others' eyes;

level 5: knowledge as personal artifacts: see themselves knowledge

builders when embedded in social practice;
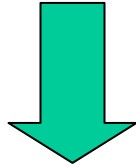
level 6: knowledge as improvable personal artifacts: inter-personal

discussion;

level 7: knowledge as semi-autonomous artifacts,

autonomous existence per se with many-faceted interpretations in

World 3

Structure of justifications

Ontological justification: Popper's 3-world schema;

Technological justification: collaborative knowledge building discourse in communal database in World 3 [CSILE project];

Pedagogical justification:

past failure in educational reforms and learning theories
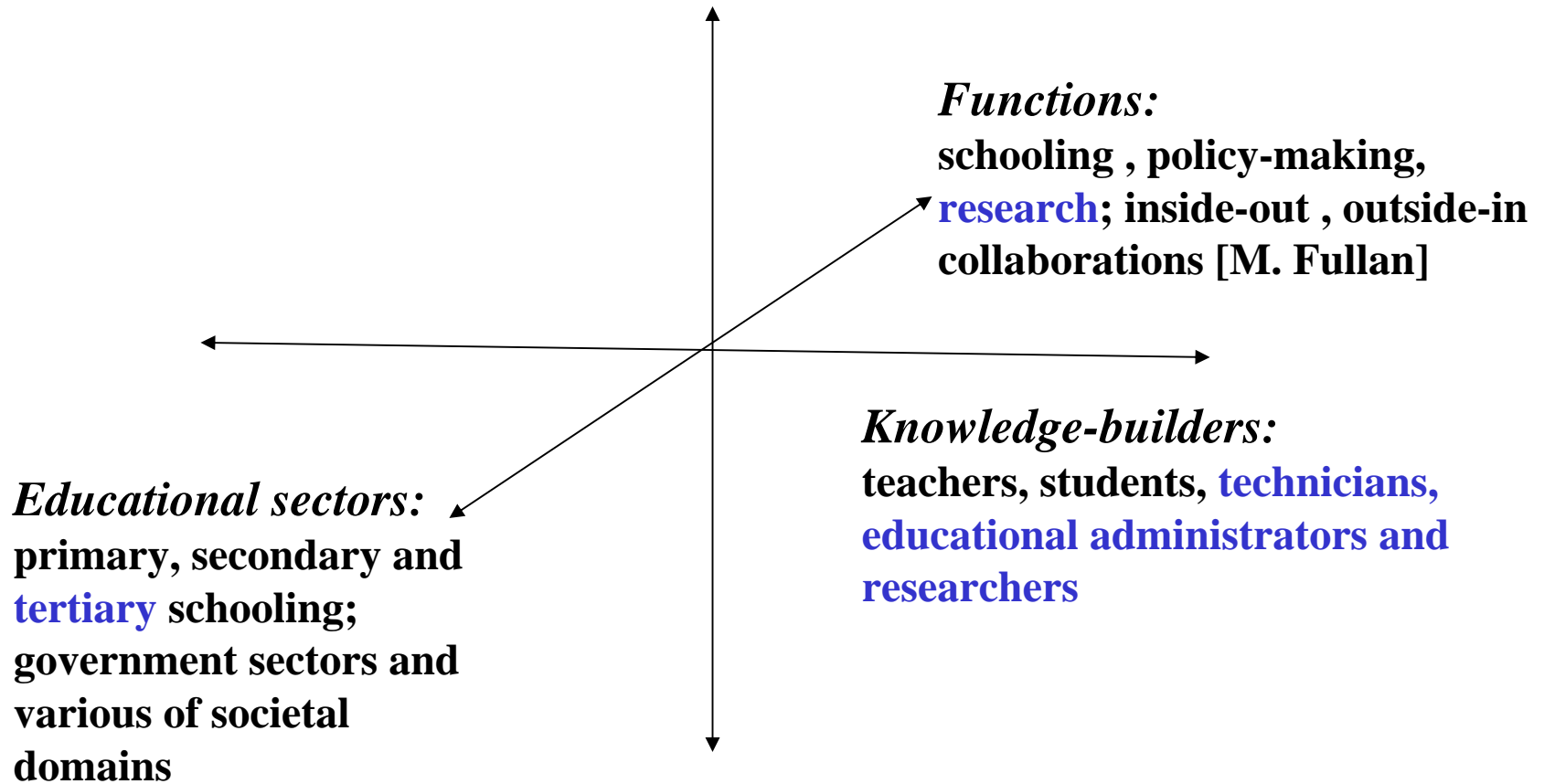
with dubious assumptions
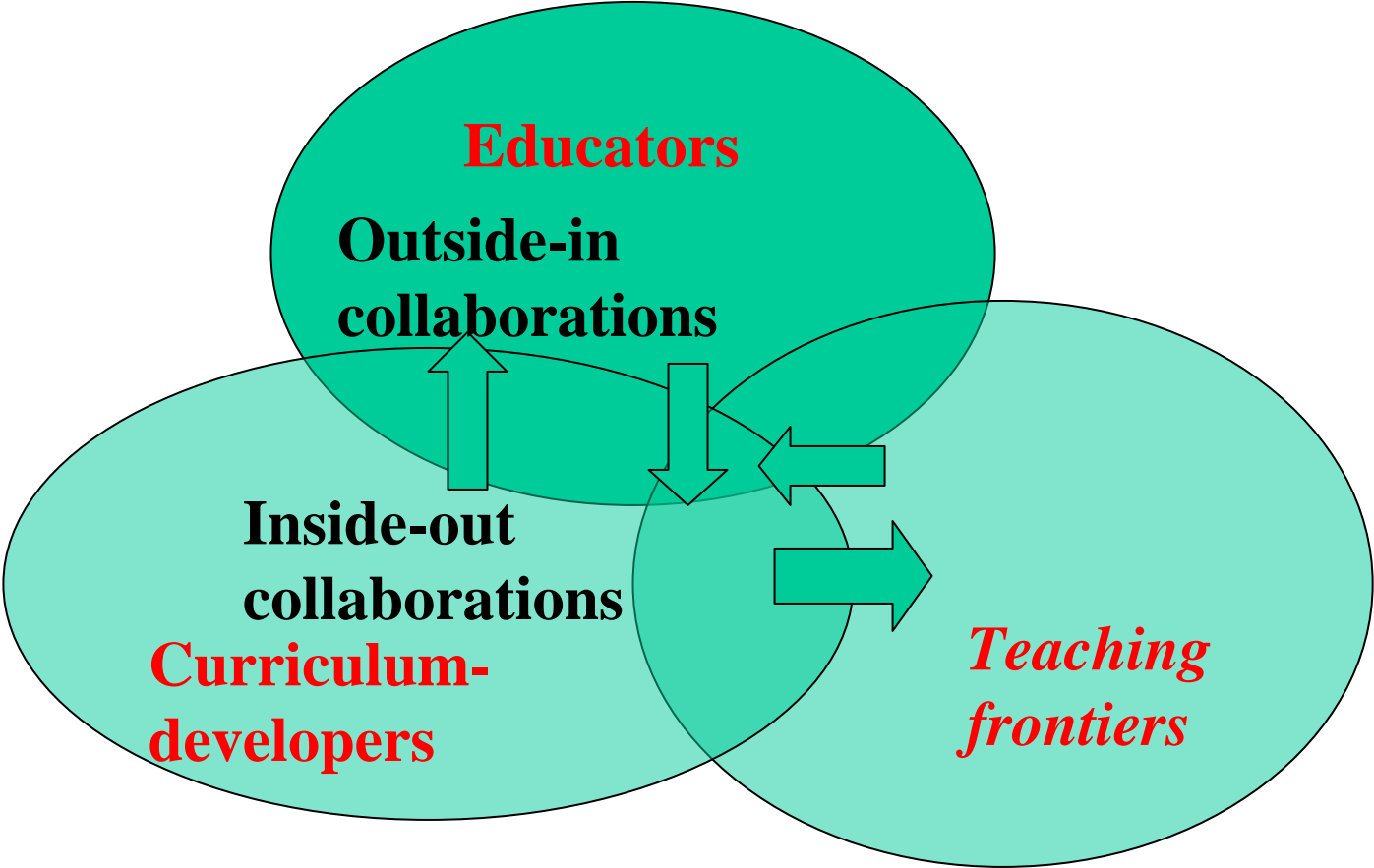
Power relations on knowledge-building discourse

- **Socio-cultural settings in local situations:** in Hong Kong, heavy-loaded teachers; high student-teacher ratios; authoritarian teaching; ICT as a pedagogical tool for teachers in SITES [c.f. in Asian countries whilst ICT as learning aids in assessing external databases]; exam.-driven school curricula and summative assessment with intensive inter-student competitions; low or unexpected response rates on internet discourse; disparities in teachers' and students' cognitive levels and deeply-rooted heritage culture

- knowledge-based organizations [Peter Drucker, p.108]: public sharing of responsibilities for such organizations' objectives, contributions and behavior.esp. everyone is a contributor and knowledge share-holders; discharge (no abuse) of power : **necessary conversion from power-based to knowledge-based organizations**

- **Uneven power distribution, inhibiting the growth of public knowledge** [experiences in postgraduate students' activities; allocation of duties in school staff, etc.] ;

- **lack of explanations for *why* some students have better learning outcomes or more a bit forward for sharing public knowledge or impasses in discussion, non-scalable, un-sustainability of asynchronous communication among students, teachers and scientists;**

A 3-dimension framework for the newly paradigmatic knowledge-building communities

Functions:
schooling , policy-making, research; inside-out , outside-in collaborations [M. Fullan]

Knowledge-builders:
teachers, students, technicians, educational administrators and researchers

Educational sectors:
primary, secondary and tertiary schooling; government sectors and various of societal domains

Discourse analysis
[c.f. M. Foucault's archaeological method]

- Focus: how power relations among academic, administrative and technical staff *perceive* the roles of cyber-forum in an IT research community, aiming to deepen communications and collaborations;

- **apparatus:** qualitative focused interviews with selected persons;

- **underlying research paradigm:** communicative validity in postmodernist trends;

- **convenient sample:** technical (4), administrative (5); academic (9);

- **involved research units:** CITE, CMI, Dragonwise projects on CAL in Chinese language; SLITS, Worldmaker;

- **definition Of discourse:** dynamic process of sharing and talking for value conflict-resolution and -resolution;

- **research directions:** uncover those rules of power relations among three types of staff, which regulate and govern social practices in collaborative knowledge-building discourse

Pay Attention!!!

Power-relations among knowledge-builders in the community,

apart from affective and (meta)-cognitive domains.

Power cohesion on internet discourse

- Possible 'surveillance' of individual selves on the web, constrained by an uneven distribution of power relations, probably hindering the intended growth of sharing or authentic discussion in knowledge-building communities;

- [c.f. Michel Foucault's concept of 'panopticism']

Research data results

A. Variation in extension or overlapping of 'private' and 'public' virtual spaces among academic, administrative and technical staff;

B. Technical staff fear of being identified;

C. Academic staff: more high-sounding morale in ICT education;

D. Administrative staff: concern more about efficiency of daily works;

E. ALL STAFF share some common value-beliefs in ICT education: ICT can enhance learning by motivating students; face time, human manpower, and money constraints ; e-mail can provide resourceful information but web or email cannot necessarily be an effective human interface;

F. WHY: uneven distribution of power, sharing and conceptions of ICT education and collaborations;

G. Tentative data interpretation: cyber-discourse on airing opinions about ICT education have some socio-cultural barriers against or facilitating factors on the nature and extent of collaborations in researching communities at HKU

- "The **panopticon** may even provide an apparatus for supervising its own mechanisms.
  In this central tower the director may spy on all the employees that he has under his orders…..he will be able to judge them continuously, alter their behavior, impose upon them the methods he thinks best; and it will even be possible to observe the director himself. An inspector arriving unexpectedly at the centre of the panopticon will be able to judge at a glance, without anything being concealed from him, how the entire establishment is functioning" Foucault [(1979), p. 204]

- In Jeremy Benthams artistic design for the surveillance of inmates in the French penitentiary, the *panopticon* is a circular building with security guards in the middle and the prisoners cells arranged around the periphery. The guards in a powerful position inspect the prisoners without being seen themselves. Such unverifiable inspection makes it the more powerful. With uncertainty about when and whether he lies in the field of public visibility, a prisoner seems to govern his own behavior and becomes his own guardian.

  [Foucault (1979), pp.202-203]

World 3

World 2

**Progressive
discourse**

**A RESEARCH
COMMUNITY**
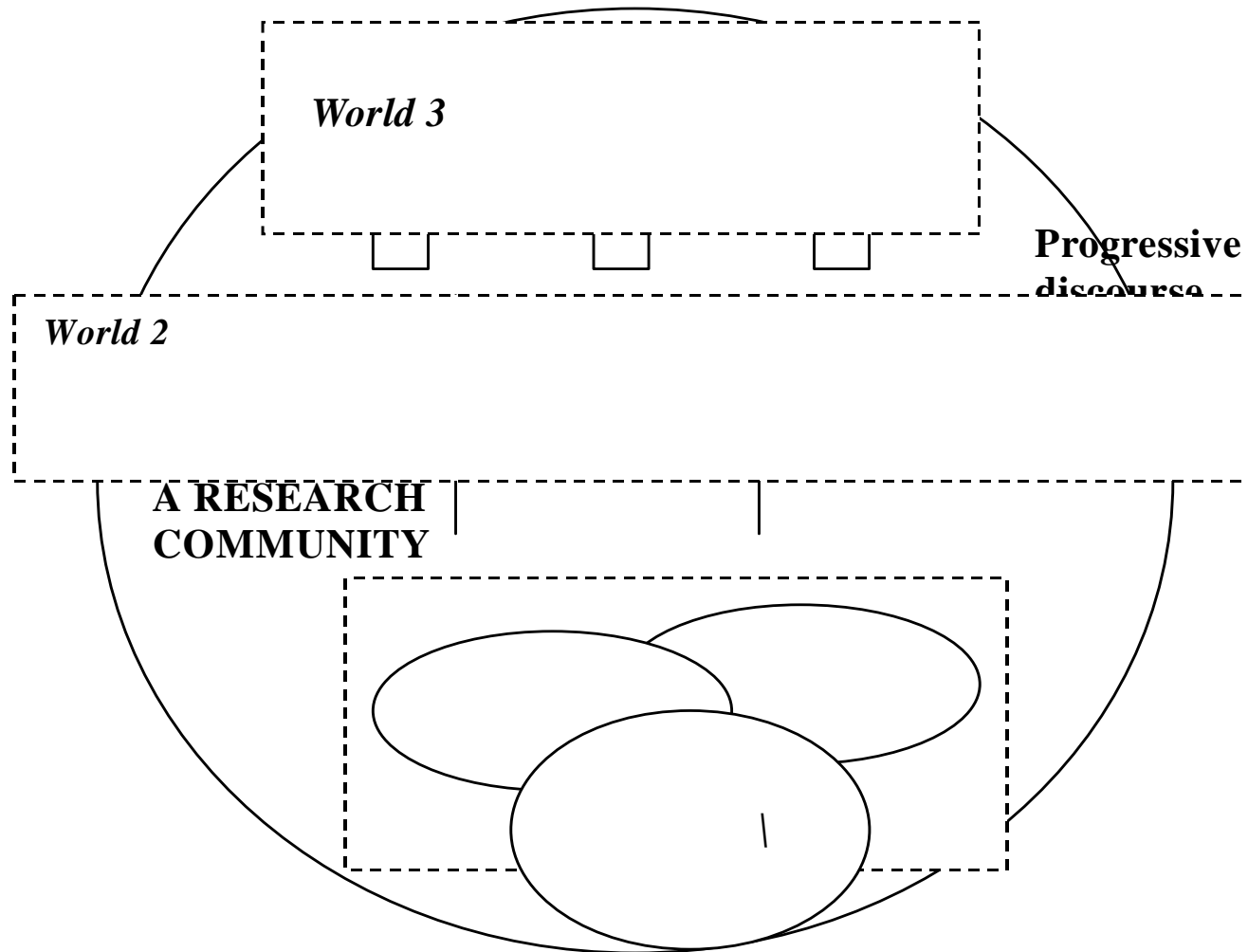
Figure 1: Three domains for a collaborative knowledge building research community

Implications:

- *Further researches in other researching communities;*

- *Investigations of what socio-cultural factors in power-cohesive domains are decisive for knowledge-building;*

- *Big conceptual and pragmatic questions of gaining understanding of HOW to involve more 'progressive discourse' from individual mental levels to public-shared knowledge in World 3;*

- *Theoretical problems of how synchronicity and negotiability of human interactions constrained by power relations can be enhanced on cyber-discourse;*

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1. Bereiter, C. (1999). *Education and mind in the knowledge age.* on-line available at http://csile.oise.utoronto.ca/edmind/main.html

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The End of presentation.

Thanks for your attention !