

## Advocating for Nexus Analysis

### Integrating Micro and Macro Perspectives in Problem-Based Learning Research

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#### Abstract

This paper advocates for the adoption of Nexus Analysis as a robust analytical framework in Problem-Based Learning (PBL) research. Developed by Scollon and Scollon, Nexus Analysis offers a unique lens for examining the intricate dynamics of PBL by seamlessly integrating micro-level interactions with macro-level societal discourses. The approach enables researchers to capture the rich, nuanced interplay between individual behaviors and broader educational contexts. Despite its potential, Nexus Analysis remains underutilized in the study of PBL, where research often polarizes towards either micro or macro perspectives without bridging the two. This paper discusses the foundational concepts of Nexus Analysis, illustrating its relevance and applicability in capturing the complex reality of educational environments. By highlighting its methodological strengths, the paper aims to encourage scholars to adopt Nexus Analysis, to further strengthen the research around PBL.

**Keywords:** Nexus Analysis; PBL; Mediated Discourse Analysis; Social Interaction

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## Introduction

The essential work related to Problem-Based Learning (PBL) that I aim to unfold in this paper is Scollon and Scollon's book titled *Nexus Analysis—Discourse and the Emerging Internet* from 2004. This is not a book usually associated with PBL, as the main aim of the book is to introduce a theory and methodology to study human interaction from both a micro and macro perspective. As I will unfold later in the article, I highlight this book in relation to PBL because I believe there is a lack of studies in PBL that combine a micro and macro perspective to truly understand the affordances and constraints of PBL. As the Nexus Analysis book can be seen as the culmination of Scollon and Scollon's academic careers, I will include more of their scholarship to provide additional context to the thinking of the book. From a personal perspective, Nexus Analysis is, for me, one of the best approaches to study human behavior as it provides a concrete methodology to bridge the three central aspects of social actions: how we interact (interaction order), why we interact as we do (historical body), and how society affects the way we interact (discourses in places).

In the next section, I will address some of the shortcomings as I see it in the current PBL literature. I will then link Nexus Analysis to the field of PBL and explain why I think Nexus Analysis is an essential read for scholars within PBL. Subsequently, I will elaborate on the theory and methodology of Nexus Analysis and how it understands and encourages to analyze social actions, I will finish by returning to why I think this is relevant for PBL. My overall aim with this paper is to encourage scholars to use Nexus Analysis as a methodological framework to conduct research in PBL.

## What I miss in the current research on PBL

PBL is an evolving field, and more than 500 educational institutions have been identified globally as having implemented some version of PBL (Servant-Miklos, 2019). This has also led to a great deal of research within PBL. Hung et al., (2019) identify three megatrends within PBL research. The first trend from 1990 to mid-2000 focuses on whether PBL works compared to more traditional ways of educating, they call this trend polarization. According to Hung et al. (2019), this research was meant to justify the PBL approach and prove that it was an effective way of teaching. Often, you would test different cohorts, one taught with a PBL approach and one in a more traditional way, and then measure different outcomes (motivation, retention of knowledge, problem-solving, etc.) The next trend, outcomes to process, took place from mid-2000-2010 and focused on how PBL works. This trend specialized in different parts of PBL (assessment methods, supervision methods, etc.) and concentrated on

how these were performed to make PBL work. The last trend specialization focused on specific disciplines, online platforms, and how PBL was implemented across cultures. Thus, instead of talking about PBL in general, the focus changed to different PBL models.

What I personally feel is lacking in the research on PBL is studies that combine a micro and macro perspective. It seems like in most of the literature, you either do micro studies (Bridges & Imafuku, 2020; Hendry et al., 2016; McQuade et al., 2019; Velmurugan et al., 2021; Velmurugan & Davidsen, 2024) or macro studies (Moallem et al., 2019; Servant, 2016; Sørensen, 2023). To this date, I have only found one study that combines micro and macro perspectives by Thorndahl (2023), but she does this to think about PBL with agential realism. A Nexus Analysis can provide a more accessible framework to analyze PBL. I will unfold this in the following, starting with how I first came to know Scollon and Scollon.

## The first time I encountered Scollon and Scollon

The first time I stumbled upon Scollon and Scollon's works was not in relation to the book *Nexus Analysis*, but rather their book: "Intercultural Communication: A Discourse Approach" third edition published in 2012 (first edition published in 1995), a book that really resonated with me. The work focuses on understanding intercultural communication within the notion of Discourses. A notion they later (after 1995) used to develop the theory of Mediated Discourse Analysis (Scollon, 2001) and the ethnographic methodological strategy of Nexus Analysis (Scollon & Scollon, 2004).

Although I had previously become familiar with the field of Discourse Analysis mainly through Fairclough's *Critical Discourse Analysis* (Fairclough, 2011) and Foucault's notion of discursive power (Foucault et al., 2000) what I found interesting about Nexus Analysis was its quest to understand social interactions with a lens that focused both on the ongoing interaction, the sociological and psychological background of the actors who perform the social action(s) (what they call Historical Body) and how the context of the surrounding society affects the social interactions of the here and now (what they call Discourses in Places). In other words, what intrigued me was their bridge between understanding everyday interactions and how broader Discourses affected these interactions or put in other words, their bridge between macro- and microanalysis. In their own words, they state:

"Discourse analysis as a field of study might either be the micro-analysis of unfolding moments of social interaction or a much broader socio-political-cultural analysis of the relationships among social groups and

power interests in the society. A nexus analysis is a way to strategize unifying these two different levels of analysis.” (Scollon & Scollon, 2004, p. 8)

They further elaborate that: “a nexus analysis undertakes a close analysis of not only *what* is said (ethnographic content) but *how* (discourse analysis) and *why* (motive analysis).” They do that by examining social actions, which I will elaborate on in the following after unfolding nexus analysis a bit further.

## Unfolding Nexus Analysis

In their book: “Nexus Analysis – Discourse and the Emerging Internet” (2004) Scollon and Scollon are looking back at the first time they tried to conduct e-learning in Alaska in the late 1970’s. This was before the emergence of the internet. A toned-down version of the internet was installed in Alaska due to the vast distance between the cities and the booming economy related to the oil in the area. The “internet” was different terminals connected through Alaska that could be used for “advanced communication” (mail and messages). Scollon and Scollon lectured at a university with campuses in different locations in Alaska and traditionally, they would fly to these locations to teach. Until they got the idea to try and use this early version of the internet to conduct their teaching.

Perhaps because these were some of the first attempts in the world to create distance learning programs they were a great source to understand the rituals surrounding learning in higher education, how learning traditionally is facilitated, and what changes when changing what, at that time, were fundamentally and taken-for-granted actions about learning in higher education. Thus, their analysis of how to conduct learning processes through technology leads to their development of a methodological approach to: “study the semiotic cycles of people, objects, and discourses in and through moments of socio-cultural importance.” (Scollon & Scollon, 2004, p. x). The main focus of analysis in Nexus Analysis is to: “try to understand how people take actions of various kinds and what are the constraints and affordances of the mediational means (language, technologies, etc.) by which they act.” (Scollon & Scollon, 2004, p. 21) Thus, they define a nexus analysis as “the mapping of semiotic cycles of people, discourses, places and mediational means involved in the social actions we are studying.” (Scollon & Scollon, 2004, p. viii).

Nexus analysis thus becomes an ethnographic methodological strategy to study social action(s). These actions are then used to understand broader dynamics in society:

“A nexus analysis entails not only a close, empirical examination of the moment under analysis but also a historical analysis of these trajectories or discourse cycles that intersect at that moment as well as an analysis of the anticipations that are opened up by the social actions taken at that moment.” (Scollon and Scollon, 2004 p. 8)

We see how Nexus Analysis not only focuses on the interaction at the moment but tries to analyze why that interaction unfolds as it does. Its main analytical focus is to examine this through social actions, which I will elaborate on in the following.

## Defining Social Action(s)

“A social action takes place as an intersection or nexus of some aggregate of discourses [...] – the *discourses in place*, some social arrangement by which people come together in social groups [...] – *the interaction order*, and the life experiences of the individual social actors – *the historical body* (Scollon & Scollon, 2004, p. 19). Thus, Scollon and Scollon define a social action as a nexus of three entities: interaction order, historical body, and discourses in place. This is visualized in the figure below and will be elaborated afterward.

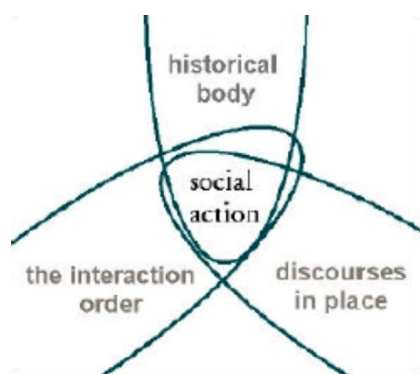


Figure 1. Social Action (Scollon & Scollon, 2004, p. 20).

### Discourses in place

“In the simplest and most common sense, we take discourse to mean the use of language in social interaction.” They further refer to Gee’s notion of discourse with a small d and with a big D. The difference is that Discourse with a big D refers to:

“different ways in which we humans integrate language with non-language “stuff,” such as different ways of thinking, acting, interacting, valuing, feeling, believing, and using symbols, tools, and objects in the

right places at the right times so as to enact and recognize different identities and activities.” (Gee 1999, p. 13 as cited in Scollon and Scollon, 2004 p. 4)

Their use of discourse is focused on how meaning is created and negotiated in social actions, attentive to which discourses the participants of the actions draw upon to accomplish their actions. A central part of their analysis of the discourses, and one of the central aspects in Mediated Discourse Analysis, is the focus on mediation and how discourses are mediated through different technologies, the oldest being language itself. As they state: “Discourse and technology are inseparable [...] any change in the technologies of the discourse is inherently and necessarily a change in the discourse itself” (Scollon and Scollon p.7). Take, for example, a group meeting among the students, according to this author’s experience, it has become quite normal for groups to have hybrid meetings where some meet up physically at campus, and others participate online. This technology will change the small discourse of the meeting, as other social conventions will become available when one member participates online. Another discourse used by politicians, faculty, and students is the employability discourse, which has a profound way of regulating the number of seats at Higher Education institutions in Denmark and might affect the way students choose their prospective study and how they prioritize during their studies. Where in the 70’ies, the focus could be argued to be centered on how to enhance the motivation of the students to teach them relevant content knowledge and solve societal problems not problems defined by private companies.

### The interaction order

Refers to the interaction the participants engage in to accomplish their social action. Thus, by looking at how people interact with each other and which discourses they draw upon in their interaction, we gain an understanding of how social norms and general societal discourses affect micro-interactions and vice versa. In a PBL context, you would look at how the students do PBL, from internal meetings to how they write different parts of their assignments to their interaction with their supervisor. You would also look at how the different discourses emerge and what types of discourses the students use and try to track the trajectory of these discourses.

### Historical Body

The best way to understand this term is to relate it to Bourdieu’s concept of habitus. The roles and personal habits of the actors who engage in the social actions under study. Scollon and Scollon use the concept of the historical body taken from Nishida because it is understood from a more dynamic perspective

thus the historical body is constantly changing as the participants develop and evolve through their lives. Thus, in a PBL context, you would look at who the students are, who the faculty are, and how their personal preferences affect the way they interact with each other, why they do as they do, what sort of meaning they prescribe to the discourses, and their interaction.

By studying the nexus of discourses, interaction order, and historical body, we thus get an informed understanding of human interaction. In other words, it provides a framework to analyze and understand human behavior focused on social actions.

## Some concluding remarks

To this author's knowledge, there have not been any studies using Nexus Analysis to analyze PBL. Velmurugan, (2022) briefly addresses the notion of a historical body in his discussion of Decision-Making processes in students' PBL group work. However, he does not do a nexus analysis. My main message here is that to truly understand PBL and how students enact PBL, focusing on general learning theories is not enough, interaction studies of how students do PBL are not enough, studies that examine how and what kind of digital tools the students use is not enough, discourse analysis of different educational discourses is not enough, a holistic understanding of the field should combine all these perspectives to understand how PBL functions in 2024, what sort of broader Discourses influence PBL and how this is manifested in both students and staff in relation to PBL. Nexus Analysis developed by Scollon and Scollon provides an accessible way to do this.

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