

# Language Teachers and Conceptions of Knowledge Creation in Education

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## Abstract

*This Language Education proposal calls for a study on the conception of knowledge creation of language teachers teaching in and teaching for the Knowledge Age. The paper first discusses the need to conduct such research. This is followed by a review of existing literature of key terms. Next, phenomenography, a methodology in the qualitative paradigm, is proposed as a suitable approach to study the phenomenon. Finally, the research process, including sampling, and interview questions will also be presented for discussion.*

## 1. Introduction

In the current *Knowledge Age* <sup>[1]</sup>, teachers and students alike belong to this present era characterised by the emphasis on knowledge and ideas, both of which are associated with major economic growth. Worldwide, governments are urging educational institutions to prepare learners to be future-ready so that they may contribute to the knowledge economy and become citizens of knowledge society. To answer to this call, researchers and scholars have begun to examine different approaches of how learning could take place so that learners become more active in their learning and be able to adapt their learning to new situations <sup>e.g. [1]</sup>. However, many schools are still not quite ready to teach and prepare learners for the creative and innovative work place that sought deeper understanding of knowledge <sup>[2]</sup>.

The K-12 educator fraternity appears to be slow and reluctant in adopting knowledge creation as part of their practice <sup>[3]</sup>. To begin to understand why, existing research has shown that a K-12 teacher's practice in the classroom is affected by his/her values, and attitudes. A teacher's practice is also known to be influenced by his/her beliefs <sup>[4]</sup>. Beliefs are "psychologically held understandings, premises, and propositions about the world that are felt to be true." <sup>[5, p.103]</sup>. A language teacher's beliefs about knowledge creation in the knowledge age could potentially affect his/her teaching and learning practice.

Paavola, Lipponen, and Hakkarainen <sup>[6]</sup> are the first to examine existing knowledge creation models while linking it to metaphors of learning. Three models namely, a. Nonaka and Takeuchi's theory of organisational knowledge creation <sup>[7]</sup>, b. Yrjö Engeström's expansive learning theory <sup>[8]</sup>, and c. Scardamalia and Bereiter's theory of knowledge building <sup>[9]</sup>, are discussed. All three models are explored in the context of teaching and learning in K-12 schools to different extent. However, there appears to be a lack of research that examines teachers' understanding of the knowledge creation phenomenon both within educational settings and without <sup>[10]</sup>.

Languages subjects provide literacy capabilities needed by the knowledge worker to meet the demands of the knowledge economy <sup>[11]</sup>. It is in this view of the importance of languages subjects, and my personal commitment as both a language teacher and a teacher educator, to propose specifically for language teachers' conceptions of knowledge creation be examined in future studies.

## 2. Review of existing literature on knowledge creation

Knowledge creation is a term that comes about with the advent of the Knowledge Age. The three models of knowledge creation highlighted by [6] in their discussion of knowledge creation in teaching and learning are reviewed in this section.

The Organisational Knowledge Creation Theory is derived based on Nonaka and Takeuchi's vast experience with Japanese commercial organizations. It is also one of the theories in the field of knowledge management (see [12]). According to [7], knowledge creation takes place through a "knowledge conversion" (p.61) process which involves the interaction of tacit and explicit knowledge when individuals interact. There are four different modes of knowledge conversion as seen in the popular *SECI model*, namely: socialization (S), externalization (E), combination (C), and internalization (I). As knowledge conversion is an on-going cyclical process, hence it is also termed the "knowledge spiral" (p.71-72). Intra-organisation

interactions power this spiral. Inter-organisations interactions extend the knowledge spiral beyond just a single company, making knowledge creation based on collaboration possible. While SECI model is widely researched in business and corporate settings, there exists few research in K-12 schools teaching and learning context, and particularly, only one study, Yeh, Huang and Yeh <sup>[13]</sup>, involved language teachers. Yeh and colleagues explicitly described their teacher participants as creating knowledge during online discussions. However, the difference between acts of knowledge creation and knowledge sharing is not clearly explained, neither is how the participants go about differentiating the two elaborated. Although there were English, Malay, and Chinese Language teachers among the participants, the authors did not separately report on the knowledge creation of these language teachers. It is unclear how the language teachers in this study conceptualise knowledge creation as a phenomenon.

The Expansive Learning Theory, propounded by Yrjö Engeström, suggests knowledge creation can take place in an ordinary workplace context. Founded upon the cultural historical activity theory or CHAT <sup>[14]</sup>, expansive learning is a deliberate act by a group of individuals aimed at questioning existing practice to find new ways of working <sup>[15]</sup>. New knowledge is manifested in the transformed activity system. In an activity system, activity refers to an object-directed conscious process conducted by subject acting in relation to the larger community. Subject represents an individual or a group whose perspective is taken for the analysis of the system. Every activity is unique based on the motive that drives each activity and the object which the activity is oriented to <sup>[16]</sup>. For example, a group of teachers (subjects) working on a problem of redesigning the school curriculum to become more student-centered (object) to find out the solutions to the problem (motive). Although expansive learning largely concerns workplace, K-12 school teachers have been examined in numerous studies using the theory as a lens to examine existing activity systems. It is useful to note that most studies do not use the theory to guide knowledge creation in those school contexts, except Bang, Warren, Rosebery and Medin <sup>[17]</sup> who reported an application of the ideas of expansive learning. Through examining the unique cultural-historical background of the teachers' activity systems, Bang and colleagues illustrated how science lessons in two classrooms were redesigned to be more meaningful for the students. Despite the larger quantity, expansive learning studies involving language teachers appear to be in lacking.

Knowledge Building Theory is predominantly based on K-12 schools settings. Thus, knowledge creation is

taking place in schools, away from authentic work contexts. Scardamalia and Bereiter advocated for schools to develop learners at a young age to learn to become future participants of the knowledge society <sup>[18]</sup>. Learning in such a case requires students to learn social practices that allow them to actively pursue problems of understanding that interest them. This is akin to scientists creating knowledge, albeit at a different level. While scientists and scholars are expected to create knowledge that is new to the world, students will more often be creating knowledge that is new to them. However, Scardamalia and Bereiter argued that the knowledge building process that students go through are no less scientific nor authentic just because the knowledge created is not new to the world. Learning through knowledge building, a synonym of knowledge creation <sup>[19]</sup>, is guided by 12 principles that capture the sociocultural and cognitive dynamics of the pedagogy <sup>[20]</sup>. Knowledge building aims at producing conceptual artefacts that help students to understand the world around them <sup>[1]</sup> and to advance the collective state of knowledge <sup>[21]</sup>. Knowledge building is premised upon Karl Popper <sup>[22]</sup>'s three-world schema. Ideas, as products of human mind, are World 3 objects that can be worked on and improved. Idea improvement, as evident among the twelve principles above, makes up the core of knowledge building <sup>[23]</sup>. Improved ideas are regarded as new knowledge created <sup>[9]</sup>. As knowledge building theory is based in the teaching and learning context, existing studies involving K-12 teachers spread across pre-service teacher education, professional development of in-service teachers, and knowledge building implementations in schools. While language teachers appear in a few studies <sup>(e.g. [24][25])</sup>, it appears that there is a lack of research examining teacher participants' conception of knowledge creation as a phenomenon.

In summary, language teachers participating in knowledge creation research are few. There appears to be a lack of research that examines how these language teachers conceptualise the knowledge creation phenomenon.

### 3. Methodology

This section discusses phenomenography, a suitable methodology in the qualitative paradigm, the research questions, research processes, including sampling, data collection method, and the interview questions.

#### 3.1. Phenomenography

Phenomenography is a research method developed by Ference Marton, Lars Owe Dahlgren, Lennart

Svensson, Roger Säljö and colleagues at the University of Göteborg in late 1970s. Phenomenography aims at finding and systematising how people interpret reality, also called the ‘second-order’ perspective <sup>[26]</sup>, which differs from ‘first-order’ perspective. First-order perspective is made up of knowledge of phenomenon that is abstracted from human beings’ experience; it describes the world. Second-order perspective describes people’s conceptions of what a phenomenon experienced by them may be; it describes people’s experiences of the world. These conceptions are not infinite, but often exist in limited number of qualitatively dissimilar ways <sup>[27]</sup>. Phenomenographers are interested in the relations that “exist between human beings and the world around them” <sup>([26], p.144)</sup>. The hidden world of human conception is something of interest in itself and phenomenography offers the means to explore and understand this world <sup>[26]</sup>. In phenomenography, the terms experiences, conceptions, apprehensions, ways of seeing, and ways of understanding are used interchangeably as synonyms <sup>[28]</sup>.

People’s experiences of the world come from individual’s awareness of the phenomena occurring around him/her <sup>[29]</sup>. Phenomenographers assert that no individual has a complete awareness of everything and no two individuals may experience a phenomenon the same way at the same time <sup>[29]</sup>. As phenomenography reports on a collective experience and not focusing on individual’s experience, the variation offers a more complete understanding of the phenomenon in question <sup>[30]</sup>. The qualitatively different ways of experiencing are described in terms of categories of description which forms a complex outcome space <sup>[31]</sup>. Each category is meaningful in two ways. First, it represents a unique way of experiencing the phenomenon. Second, it is logically linked to other categories, which is frequently in hierarchical form <sup>[29]</sup>.

As the Gothenburg phenomenographers have first developed phenomenography to research teaching and learning, phenomenography has been widely used in educational settings. Through the eyes of the teachers, insights into the variations in which teachers conceptualise knowledge creation, knowledge, and knowing may be gleaned.

Recent developments in the phenomenographic approach see the proposal of ‘*new phenomenography*’ with a focus on Variation Theory aimed at strengthening phenomenography’s theoretical foundations <sup>[32]</sup>. Variation Theory has ‘two faces’, the first refers to the outcome space containing the categories of descriptions that capture people’s different conceptions as described in the previous paragraphs; the second refers to the nature of the qualitatively different ways in which people experience

a phenomenon <sup>[33]</sup>. In other words, the second face serves to clarify the definition of ‘experience’ based on the structure of awareness <sup>[29]</sup>.

### 3.2. Research questions

The primary purpose of the proposed study is to examine language teachers’ conceptions of knowledge creation and their experiences of knowledge creation in education. The following research questions will guide the data collection process to meet the purposes:

1. What are the qualitatively different ways in which language teachers conceptualise knowledge creation?
2. What are the qualitatively different ways in which they experience knowledge creation in the context of education?

### 3.3. Sampling

Given the goal of phenomenography is to investigate variation in the meaning of a phenomenon, selection of participants with diverse characteristics representing the desired population would increase the chance of obtaining this variation in meaning <sup>[34]</sup>. Maximum variation sampling suits phenomenography’s aim to examine variations in people’s experience. It is common for phenomenographic studies to involve a relatively small number of participants (typically 20-30) in hope to achieve depth in meaning <sup>[35]</sup>.

### 3.4. Data collection method

Face-to-face interview is a dominant data collection method of phenomenography <sup>[27]</sup>. Some may choose to conduct focus group discussion, open-ended survey that allows written or drawing response <sup>[28]</sup>. Individual face-to-face interview is preferred as it offers participants the freedom of expression, the opportunity for researchers to constantly clarify meanings, and phenomenographers found more people to be comfortable with talking than if they were writing <sup>[36]</sup>.

### 3.5. Interview questions

Based on the literature review, there appears to be a lack of studies that explore people’s conceptions of knowledge creation beyond existing academia’s theories. As such, a set of interview questions is created based on advices provided by phenomenographers such as [34][36]. The interview questions are as follows:

1. Experience of knowledge creation
  - Name someone who you think creates knowledge. What makes you think that this person creates knowledge?
  - Can anyone create knowledge?
  - Have you created any knowledge? Why do you think that is new knowledge created?
  - What are some experiences that contribute to your view of knowledge creation?
  - Could you tell me what you think knowledge creation is to you?
2. Experience of knowledge creation in education
  - Is knowledge creation important to you as a teacher?
  - How does knowledge creation relate to your teaching?
  - How does knowledge creation relate to you as a teacher?
  - Do you think you create knowledge as a teacher?
  - Do you think your students create knowledge as part of language lessons?
  - Do you think your students create knowledge beyond language lessons?
  - Does your professional environment (institutional, cultural, social) contribute to knowledge creation (by you and your students)?
  - Could you tell me what you think knowledge creation in education is to you?

#### 4. Conclusion

In this paper, a phenomenographic study of language teachers' conception of knowledge creation is proposed. This study can potentially lead on to discussion of how language teachers conduct language lessons to prepare our students for lives in the knowledge society.

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