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# Formation of Social Studies Teachers' Practical Knowledge Through Empirical Analysis of Practice Records: Beyond the Methodological Characteristics of Narrative Approaches

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## Abstract

This study aims to determine how social studies teachers form practical knowledge and what methods can be used to describe the development of social studies teachers' practical knowledge. We considered the case study of Fumio Nagaoka, an elementary school teacher attached to Nara Women's University in Japan, to analyze the records of his practices. The results revealed that social studies teachers develop practical knowledge by overcoming practical challenges through encounters with children's learning methods. In addition, the formation of practical knowledge can be described by creating a chronology of the social studies teacher's personal history from practice records, identifying the situations in which teachers solve practical problems, and capturing the changes in class tendencies before and after these situations, by comparing the lesson structure. This process demonstrates the long-term and autonomous process of curriculum adjustment as social studies teachers become more familiar with learners' understanding through their daily educational practices. This process has not been described in the traditional narrative approach.

**Keywords**: Gatekeeping, Practical knowledge, Analysis of practice records, Fumio Nagaoka

## Introduction

Recent advances in science and technology have accelerated globalization and information dissemination, increasing diversity among children. The rise of a VUCA (Volatile, Uncertain, Complex, and Ambiguous) society requires teachers and students to adapt constantly to a changing world. Teachers can no longer just pass down cultural heritage; instead, social studies teachers must engage in ongoing professional development to adapt to societal change and incorporate new knowledge into their lessons curricula.

Since the 2000s, research on teacher education in social studies pedagogy in Japan has been limited (Watanabe, 2017). In contrast, in the United States, Thornton (1991) theorized that despite facing external constraints, social studies teachers ultimately have the authority to make curricular decisions. Similarly, Parker (1987) highlighted that the differences made by teachers lie in their agency. This idea, introduced from the

United States as the concept of "teacher gatekeeping" (Thornton, 2005), marked a turning point and eventually led to the development of teacher education as a distinct subfield within Japanese social studies education. In response to rapid social change and growing diversity among children, the need for teachers to become proactive designers of their own instruction and curricula has been increasingly emphasized. Through the practice of gatekeeping, teachers are now expected to provide the most appropriate education tailored to their students. Internationally, research has focused on teachers' acceptance of the public curriculum (Agarwal-Rangnath et al., 2016), their frameworks for handling controversial issues and other difficult materials (Kim et al., 2018; Misco et al., 2018), and the design of public curriculum and assessment systems that support social studies teacher gatekeeping (Hong & Hamot, 2019; Horita, 2015). In these studies, social studies teachers are reimagined as proactive classroom coordinators who select concepts, relevant issues, and other information to be pursued in class; these selections are based on relevant educational purposes, such as social competence, personal utility, civic participation, and sharing cultural knowledge.

When considering that social studies teachers engage in diverse instructional practices through gatekeeping, it is noteworthy that certain forms of knowledge function uniquely within their practices (Connelly & Clandinin, 1985; Elbaz, 1983; Hung, 2018, 2020; Terantino & Weinland, 2023). This type of knowledge has been conceptualized as practical knowledge—a form of professional, personal, and essential knowledge that supports teaching practice. The development of practical knowledge encourages teachers to modify lessons. However, earlier research mainly viewed teachers' growth as influenced by school contexts, social events, or researcher interventions. It largely overlooked how teachers deepen their understanding of learners in daily practice. This study aims to examine the development of social studies teachers' practical knowledge as they progress as "gatekeepers." Additionally, the study intends to show the effectiveness of an analysis method based on practical teaching records, intended to describe how this knowledge forms through daily educational practices while addressing the methodological features of traditional narrative approaches. Therefore, this study poses the following research questions:

(1) How do social studies teachers form practical knowledge?

(2) What methods can be used to describe the development of social studies teachers' practical knowledge?

## Literature Review

### *Practical Knowledge and Formation*

Attention to this ambiguous and tacit knowledge held by teachers began in the 1970s, when Schwab (2013) pointed out that the "practical manner" formed by teachers in the classroom plays a significant role in curriculum practice. Later, in the 1980s, Elbaz (1983) conceptualized this as "practical knowledge." Elbaz categorized practical knowledge into three modes: "rules of practice," "principles of practice," and "images." Furthermore, Sato (1990) identified five characteristics of practical knowledge: it is deliberative, case-based, integrative, experiential, and personal. Such practical knowledge has thus been understood as context-specific knowledge, distinct from theoretical and scientific knowledge. It includes individual, tacit domains and is intricately constructed within the teacher's inner world through experience.

Research on practical knowledge in teaching mainly relies on the "knowledge base for teaching" model introduced by Shulman (1987). Shulman identified seven types of knowledge that teachers need to develop as practical knowledge: (1) content knowledge, (2) general pedagogical knowledge, (3) curriculum knowledge, (4)

pedagogical content knowledge (PCK), (5) knowledge of learners and their traits, (6) knowledge of educational settings, and (7) knowledge of educational goals, values, and their philosophical and historical foundations. Among these, Shulman especially highlighted PCK as a domain unique to teachers. This knowledge refers to what teachers use when designing lessons, instructional units, and curricula, and it has been the focus of detailed analysis and improvement (Darling-Hammond & Bransford, 2005; Yoshizaki, 1988).

PCK is essential in teacher development programs, supported by international research (e.g., Blömeke et al., 2008; Loughran et al., 2012; Schmidt et al., 2011). Large-scale empirical studies have advanced the understanding of this concept, particularly in mathematics and science (e.g., Ball & Bass, 2000; Loughran et al., 2004). However, critics argue that PCK is insufficient to explain social studies teachers' knowledge. This criticism arises from the content-centric view of teacher knowledge, the interdisciplinary nature of social studies content, and PCK theory's failure to address the disconnect between academic fields and social studies goals (Barton & Levstik, 2004; Shimura, 2012; Thornton & Barton, 2010; Watanabe, 2012). Despite criticism, research within the PCK framework on what teachers know about curriculum content and their ability to use it is limited (Tuithof et al., 2019), and the assumption that teachers adapt PCK based on content knowledge in academic fields remains taken for granted (Deng, 2018). Another issue in social studies education research is the lack of an alternative framework for teachers' learning process (Jay, 2024). When examining social studies teachers' knowledge domains, it is crucial to carefully review the content while referencing the "teacher's knowledge base." Proposing a common foundation without considering individual aspects may be premature.

Understanding social studies teachers' practical knowledge is challenging, making research on its development vital for supporting expertise. Such studies often use a "narrative approach," based on teachers' stories. Two methods are typically used: "action research" and "life history research."

The first method involves identifying problems through classroom observations, developing solutions through conferences, and verifying their effectiveness (Eliot, 1991). To investigate this process, researchers repeated it with social study teachers. This method was developed by Lewin (1946) in the 1940s, initially undertaken as research for improving industrial organizations. It focused on practical knowledge that could be integrated into society by applying basic science. In the 1960s, it gained international attention in the context of teacher education as a method to promote the professional development of teachers (Nofkke, 1997) and has been practiced in Japan since the 2000s.

A key concern in social studies teacher research using this methodological approach has been exploring how teachers implement contemporary instructional theories such as inquiry-based learning (Jang, 2024; Kawaguchi, 2014; Kohlmeier et al., 2020; McGlinn & Greiner, 2021), how they incorporate emerging technologies into social studies lessons (Leaman & Corcoran, 2018), and how they address difficult historical issues or the multicultural aspects of local communities through classroom practice (Kusahara, 2012; Sel & Akgul Cobanoglu, 2024). Another important focus is on how teachers can effectively engage in inclusive and equity-focused teaching, especially in meeting the needs of minority students in social studies education (Aniolowski, 2024; Parkhouse & Bennett, 2023). Additionally, there is increasing emphasis on the need for teacher educators to intentionally support teacher development over periods ranging from one to several years (Ponte et al., 2004), along with a reevaluation of action research methods—particularly regarding the empowering potential of mentoring approaches in teacher education (Saye et al., 2009). In this research framework involving direct researcher intervention, the development of teachers' practical knowledge in social studies is often seen as

a result of efforts to improve instruction practice.

The "life history research" method reconstructs the entire lifespan of a teacher, including their social context, based on data from the literature and teacher interviews (Goodson & Sikes, 2001). Next, social studies teachers' practical knowledge is transformed into a story. Goodson, a leading researcher on this topic, states that teachers' lived experiences of being educated and their personal experiences supporting and constituting their development had been the subject of little research until the 1980s. He proposed to view teachers as active agents who create their histories.

Key concerns in social studies teacher research using this approach include how teachers interpret subject differentiation and major historical events like war (Attwood, 2021; Murai, 2012, 2014); how they confront and overcome personal biases and prejudices related to race (Johnson, 2002; Woodson et al., 2023); how they address controversial and contentious issues in the classroom (Hung, 2018; Stutts, 2020); and how they develop into educators capable of advancing socially just educational reform (Halse, 2010; Ritchie, 2012). This research also extends to pre-service teacher education, exploring how prior learning experiences shape their educational beliefs and philosophies (Johnson, 2007), and how examining the life stories of influential teachers can reshape their perception of the teaching profession (Himeno, 2015). Life history research, in particular, highlights the development of teachers' practical knowledge through telling comprehensive life stories, providing deep insights into how their beliefs and practices change over time.

While these studies offer valuable insights into social studies teachers' practical knowledge, more focus is needed on their methodological frameworks, especially the unique features and challenges of narrative-based approaches, as summarized in Table 1 and discussed in the next subsection.

Table 1. Methodological characteristics and challenges in narrative-based research approaches

| Focus of Transformation in Practical Knowledge | Action Research | Life History Research |
|---|---|---|
| Does the research capture teachers' autonomous transformation? | × Teachers may implement researchers' advice uncritically. | ○ Teachers autonomously make sense of their own transformation through narrative reflection. |
| Does the research capture long-term transformation? | △ Researchers' intervention periods tend to be relatively short. | ○ The research typically focuses on veteran teachers with over 15 years of experience, who discuss long-term practice. |
| Is the transformation grounded in classroom practice? | ○ The analysis targets changes in teachers' classroom instruction during the observation period, so it is based on classroom facts. | △ Researchers primarily analyze teachers' narratives; classroom facts serve only as supplementary materials, limiting detailed contextual understanding. |
| Does the research capture unconscious transformation? | ○ Because researchers observe and analyze classroom practice, unconscious changes can be identified. | × Teachers reflect retrospectively on their careers; unconscious transformations are rarely articulated. |
| Methodological challenges | Difficult to capture long-term autonomous transformation; changes are often attributed to researcher intervention. | Difficult to identify unconscious changes; transformations are often interpreted in relation to historical or societal events. |

*Note*: The gray areas are challenges.

***Evaluating Narrative Methodologies in Social Studies Education Research***

Action research, in its original conception, aims to collaboratively address challenges emerging in the classroom and to enact transformative social change based on the insights and philosophies of researchers. However, this methodology is not without its limitations. One key concern is the potential for bias when

practitioners research their own practices, particularly in relation to their proximity to the phenomena under investigation (Kagan & Burton, 2000). Furthermore, there have been reports of teachers implementing strategies suggested by researchers—even when such strategies contradict their own beliefs—especially within the context of research conferences (Akita et al., 2000). Ideally, teachers are expected to critically examine the feedback and recommendations provided by researchers, reconstruct this guidance based on their own pedagogical beliefs and classroom realities, and then implement it through practice. However, reaching this level of autonomous instructional agency often requires a significant amount of time. Most action research projects involve short-term engagements, usually limited to a teaching unit or a few years, leading to outcomes reflecting the researcher's intervention rather than long-term professional growth. This approach highlights theoretical learning from the teacher–researcher connection but struggles to capture independent development of practical knowledge.

In contrast, life history research is based on a commitment to reinterpret dominant historical or social stories from the viewpoints of individuals within specific communities. It emphasizes the interaction between personal life experiences and larger historical and social contexts (Goodson & Sikes, 2001). This method often depends on detailed interviews where teachers retrospectively reflect on their past teaching experiences from a current perspective. Because of this retrospective approach, teachers tend to highlight episodes that were especially meaningful in light of important social or historical events. The practical knowledge that comes from life history research is largely influenced by the aspects of practice that the teacher is already consciously aware of. This is shown in a study by Fujiwara et al. (2006), which looked at the life story of a Japanese language teacher, Eiko Endo. Despite Endo's active participation in the research, there was little evidence throughout the study that the life history narratives revealed previously unconscious parts of her professional practice. Changes in life history research are shaped by teachers' interpretations of sociocultural and historical phenomena. While this provides valuable insights into teachers' perceptions of their past experiences, it is limited in capturing unconscious shifts in practical knowledge. Consequently, the main forces of change are often understood through teachers' responses to external historical or social events.

To address the methodological challenges inherent in narrative approaches, researchers in this field have continued to refine their strategies by developing more nuanced methods of data collection, employing triangulation in analysis, and ensuring the validity of both the research process and outcomes through participant collaboration and peer review (Parker, 2004). These efforts demonstrate an ongoing commitment to producing intersubjective insights that go beyond individual subjectivity. However, it remains true that studies employing narrative approaches have tended to emphasize the influence of extraordinary encounters—those rare and impactful experiences—within the "stories" told by social studies teachers as the primary factors shaping their practical knowledge. However, regarding the role of the social studies teacher, Adler (2006) points out that "in today's schools, teachers are expected to know content well, be masters of a variety of teaching strategies, and be able to assess learners and adjust teaching appropriately and in a timely fashion." In other words, identifying how social studies teachers adjust their lessons and curricula through their observations of learners is an important issue yet to be elucidated. Thus, how teachers understand and form practical knowledge about learners inside the classroom, where they are the gatekeepers, has not yet been adequately studied.

## Methods

This study describes social studies teachers' practical knowledge formation using a clarification method that differs from the narrative approach. Specifically, it examines how a social studies teacher was shaped through close and ongoing observations of students in the classroom, focusing on the case of Fumio Nagaoka (1917–2010), a teacher at Nara Women's University Elementary School.

This school is known for offering a course called "*Shigoto*" (Work), which strongly reflects the core philosophy of social studies as it was first introduced in Japan during the early postwar period. Nagaoka is widely recognized as a leading figure in early Japanese social studies education. Over his 41-year career as a homeroom teacher, he consistently employed problem-solving learning at a highly advanced level—an approach still actively used in Japanese elementary schools today (Kamamoto, 2012). Some of Nagaoka's classroom practices remain exemplary models for modern social studies educators (Japanese Asscociation for the Social Studies, 2012; Munezane, 2023). During his tenure, despite occasional changes in classroom composition, Nagaoka essentially served as the homeroom teacher for the same group of students from entry to graduation. This long-term engagement with a single cohort is rare in contemporary Japanese education, making his case particularly valuable for studying ongoing, in-depth observation of learners. Focusing on a retired teacher allows us to pinpoint key moments in his career through existing lesson records, offering a comprehensive view of his development over time. This method is not applicable to current teachers, as their ongoing changes would not be captured by this analysis.

Nagaoka recorded several practices during his tenure at the elementary school attached to Nara Women's University. The school publishes a journal called "*Gakushu Kenkyu" (Research of Learning*) every two months. Teachers at the school write 2–6 page articles based on records of their classes, students' diaries, their thoughts on research themes and educational issues, and their research interests. Nagaoka wrote 173 articles in this journal. He also authored 18 single-author books, co-authored 41 books, published 83 articles in "*Kangaeru Kodomo*" (*Thinking Children*)," the research journal of Shakaika no shoshi o turanuku kai (The Association for the Preservation of the Initial Philosophy of Social Studies), and 73 other articles. As shown on the left side of Table 2, Nagaoka maintained detailed records of several lessons over a long period. In addition, many books, study group materials, children's diaries, and notes on his writings that Nagaoka personally owned are being donated to the Hyogo University of Teacher Education in 2024 for organization and preservation. This shows that the teacher regularly reflected on his teaching. Instead of only sharing a retrospective story of his entire life in his later years, he consistently documented his classroom practices and professional thoughts over short periods. As a result, it becomes possible to track and show changes across different times of his teaching career.

The characteristics of Nagaoka's class concepts and lesson plans have advanced the clarification of class theory by analyzing individual lessons (e.g., Fujii, 2008; Kimura, 1991; Moriwake, 1984). Other studies that capture the transformation of Nagaoka's class concept in the long term include Fujisawa (1998) and Urushibata (2021).

Fujisawa (1998) derives Nagaoka's theory-building process for problem-solving learning (PSL) from Nagaoka's articles, published from 1948 to 1977. This timeline was divided into six periods, as shown on the right side of Table 2. These are the Nara Plan practice period (1948–1950), the foundation period of building the theory of PSL (1951–1955), the budding period (1956–1960), the growth period (1961–1967), the mature period (1968–1972), and the development period (1973–1977). In the mature period, the teacher introduces

Table 2. Nagaoka's class records and Fujisawa's classification of the period.

| Year | Grade | Period | Lessons conducted by Nagaoka | Period Classification by Fujisawa |
|---|---|---|---|---|
| 1943 | 2nd | I | *No records due to World War 2 | |
| 1944 | 4th | | | |
| 1945 | 5th | | | |
| 1946 | 6th | | | |
| 1947 | 1st | II | "Clock" | **Nara plan practice period** The teacher is working to devise learning activities with the aim of motivating children to engage in them by taking advantage of their developmental characteristics. However, the learning is limited to making the children understand the issues. |
| 1948 | 2nd | | "People working in mountains," "Our town," "Kitchen" | |
| 1949 | 3rd | | "Water and life," "Village and town," "Kimono and Houses" | |
| 1950 | 4th | | **"Sakai no machi [The development of towns and villages],"** "Development of transportation" | |
| 1951 | 5th | | "Development of transportation," **"Coal mining"** | **The foundation period of building the theory of problem-solving learning (PSL)** The teacher create lessons based on the problems and questions of each student. The goal is to create "problem-solving" situations in which children persevere in their pursuit, and to foster an attitude of pursuit toward learning. |
| 1952 | 6th | | "Learning about the capital of Nara" | |
| 1953 | 3rd | III | | |
| 1954 | 4th | | "Transportation in the past" | |
| 1955 | 1st | IV | "School tours," "School lunch," "People working at swimming pool," "Sports Day," "Parents at Home" | |
| 1956 | 2nd | | "Tourists and work of Nara," "People working at station," "Nara's ink" | **The budding period of building the theory of PSL** The teacher develops problem-solving learning in which children are encouraged to pursue the truth by asking questions in response to the children's presentations. The child's attitude toward pursuing the truth came to be viewed as "pursuing the truth through a compelling feeling. |
| 1957 | 3rd | | "Seven-kilometer scale" | |
| 1958 | 4th | | "Town of Nara," "Life in various prace," "Development of transportation" | |
| 1959 | 5th | | "Japanese agriculture," "Japanese industry," "Commercial development," "Two-season crop in Kochi" | |
| 1960 | 6th | | "Democratic politics," "Political and cultural changes," **"Countries of the world"** | |
| 1961 | 1st | V | **"Mother's Work"** | **The growth period of building the theory of PSL** The teacher have each child develop expectations and then create problems so that each child learns with a clear goal in mind. In the "problem-solving" process, we let each child have his or her own ideas by making use of the foresight. The learning methodology is designed to set up a place where multifaceted thinking can take place and be multilayered. |
| 1962 | 2nd | | "Shops," **"Post office and postman,"** "Fire station," "Doctor" | |
| 1963 | 3rd | | **"Garbage disposal"** | |
| 1964 | 4th | | "Primitive earthenware," **"Double cropping in Kochi"** | |
| 1965 | 5th | | "Industrial Areas" | |
| 1966 | 6th | | "Politics," **"Yoriai [Meeting in Muromachi Era]," "Meiji Era"** | |
| 1967 | 1st | VI | **"School lunchroom," "Mother's Work"** | **The mature period of building the theory of PSL** The teacher takes the material in the children's field of vision and has them make predictions, and then let them naturally "tweets" and ask their own questions. The teacher then categorizes the children's problems, introduces them to connects them, letting them grasp the position of their own opinions within the class and deepening collaboration. |
| 1968 | 2nd | | **"Greengrocer," "Bread factory,"** "Fireman," "Work of postman" | |
| 1969 | 3rd | | "Seven-kilometer scale," "Nara town survey," **"Olden days," "Kintetsu chika noriire koji [Station Construction]"** | |
| 1970 | 4th | | "Learning about local area," **"Two-season crop,"** "Transportation in olden days" | |
| 1971 | 5th | | **"Japanese agriculture," "Japanese industry (socks factory)"** | |
| 1972 | 6th | | **"Namban jin torai [Coming of the Europeans]"** | |
| 1973 | 1st | VII | **"Tour of the schoolyard," "Field trip," "Important things at school," "School lunchroom,"** "Autumn fields," **"Sports Day," "Mother's work"** | **The development period of building the theory of PSL** The teacher value individual pursuits while valuing collaborative pursuits, and they seek to promote independent learning. Through their learning, children are encouraged to think about the way of life of human beings. By pursuing their studies without end, learning is not limited to social studies education, but becomes daily, concrete, and communal, with the aim of enabling children to live individual lives. |
| 1974 | 2nd | | **"Stores," "Bread factory," "Bus fare box," "Work of postman"** | |
| 1975 | 3rd | | **"Town," "Garbage,"** "Nara's ink factory" | |
| 1976 | 4th | | "Life on Islands," "**Cold-damaged areas and Rice**" | |
| 1977 | 5th | | **"Kitchen and Agriculture," "Higashiguchi Electric," "Iron," "Factory tours"** | |
| 1978 | vice principal | | | |

*Note*: The parts in **bold** are those for which the details of the lesson are known. The period classification on the right side is based on Fujisawa (1998).

problems written by the children to help them grasp their position in the class and deepen their joint pursuit as a class group. During the development period, Nagaoka again emphasizes individual pursuit and says that each child has come to establish a system in which they can live individually. In other words, Nagaoka's transformation from the mature to the developmental period was an important turning point in his PSL theory. One limitation of this study is that it is only a philosophical analysis based on Nagaoka's argument; very few analyses of Nagaoka's actual class records have been conducted.

Based on this perspective, Urushibata (2021) elucidates Nagaoka's practical knowledge formation. He compared the lesson records of Nagaoka's repeated teaching of the Mother's work to first-grade students during the lesson's growth, maturity, and development period. He focused on situations where the teacher faced unexpected child actions and had to change the lesson plans. Nagaoka recalled the practical knowledge generated by this change in the lesson and modified the lesson plans when he reconceived the lesson using the same subject matter. He discovered the formation of practical knowledge through the transformation of lesson plans. This pioneering study takes an analytical approach to forming practical knowledge by analyzing Nagaoka's practical records. However, it is limited to analyzing only classes on the same subject matter.

The current study analyzes the records of practice maintained by social studies teachers to overcome the problems of the narrative approach. A record of practice is defined as "a teacher's record of his or her educational efforts with children and the process of their transformation" (Tadai, 1990). It has also been described as "a way to talk with the group, to discover and organize problems, and to shed light on things we were unaware of ourselves" (Katsuta, 1955). Writing such a record of practice is considered an opportunity for teachers to reflect on their teaching. Therefore, it is believed that the practice records of proficient teachers express their practical knowledge at the time (Fujie, 2022). The analysis of a practical teaching record overcomes the methodological limitations of the narrative approach. This record was compiled by the teacher over time, documenting classroom practices and capturing the teacher's transformation from a long-term view. Changes were not due to researcher intervention, as typically occurs in action research, allowing for the detection of self-initiated changes. The record provides detailed descriptions of teacher-student interactions, grounded in actual events rather than retrospective interviews like life history research. This approach can reveal transformations beyond the teacher's awareness. Thus, analyzing practical teaching records offers a promising way to capture teachers' practical knowledge transformation, surpassing traditional narrative methods. Previous studies have used comparative approaches to examine how different teachers teach the same content to identify unique traits in their instructional methods (Kusahara et al., 2014). Similarly, the analysis of historical practice records has long been employed to investigate the nature of teachers' practical knowledge (Miyahara, 1981). Building on this tradition, the present study examines how one teacher's knowledge evolved through repeated lessons on the same topic in different contexts. In doing so, it demonstrates that analyzing records of practice offers a promising way to overcome some of the methodological limitations of narrative approaches in research on social studies teacher development.

In this study, we describe the formation of social studies teachers' practical knowledge through their daily teaching practices in the following five steps. First, by creating a personal history chronology for social studies teachers, we identified how they solved their practical problems. Step 1: Create a personal history chronology by organizing the events described in the practice records into timelines. Step 2: Identify situations when the social studies teacher became aware of practical issues supported by class records. Step 3: Identify the situations where the social studies teacher finds a solution to practice issues. Then, by comparing the social studies teachers' lesson plans, identify changes in the tendency of their lessons before and after solving their practical issues. Step 4: Compare classes on the same subject before and after problem-solving to extract differences in characteristics. Step 5: Compare the lesson plan of the period before and after problem-solving to elucidate the tendencies of the lessons.

This is a case study, focusing on one teacher, Nagaoka. The validity of this approach lies in the fact that practical knowledge is characterized as case-based, experiential, and individualistic. If the study is continued

with a different teacher, new factors shaping the practical knowledge of social studies teachers could emerge. This study exemplifies the research process and may be critically examined in comparison with other cases. Another potential limitation of this study is that the perception of the sociocultural context thought to influence practical knowledge is described only in terms of what was captured and documented in the practice records from the teachers' perspective. The extent to which teachers are influenced by their sociocultural backgrounds has mainly been revealed through the results of life history studies. However, to address the blind spots of this methodology, this study—while acknowledging such limitations—analyzes the transformation of teachers' practical knowledge, focusing on the factors that generate it in the classroom.

Proving that these methods transformed teaching trends clarifies how social studies teachers develop long-term, autonomous practical knowledge and adapt their curriculum. This study examines Nagaoka's shift from mature to developmental stages, with the shift explained through analysis of Nagaoka's practical records.

Table 3. Personal history chronology of Nagaoka (partial).

| Year | Grade | Month | Day | Person | Incident |
|---|---|---|---|---|---|
| | | | | | *Abbreviation |
| 1972 | 6th | 4 | 15 | Nagaoka, F. | Present the manuscript of "Minna de tukuri dasu gakkyu no bunka [Classroom Culture Created by Everyone]." |
| | | 6 | 29 | Nagaoka, F. | Teach the lesson "Nanbanjin torai." |
| | | 6 | 29 | Ueno, K. | Write "Ki no Me [Sprouts of trees]" for the class daily newspaper. |
| | | 7 | 16 | Ueda, T. | Write the diary of "What has changed recently." |
| | | 7 | 16 | Ishii, M. | Write the diary of "What has changed recently." |
| | | 7 | 25 | Nagaoka, F. | Present the manuscript of "Jissennkiroku o yonde [Read the record of practice]." |
| | | After summer vacation | | Miyajima, A. et al. | Present research on stag beetles as part of summer vacation research. |
| | | 8 | 15 | Nagaoka, F. | Present the manuscript of "Jugyo o kaitaku suru kodomo [Children who pioneer classes]." |
| | | 9 | 4 | Ishii, M. | Write "Ki no Me" for the class daily newspaper. |
| | | 10 | 17 | Tsumura, Y. | Write the diary of "Friend's changes." |
| | | 10 | | Ishida, E. | Write the diary of "Progress in the Classroom." |
| | | 11 | 5 | Nagaoka, F. | Present the manuscript of "Amasa to tsuyosa [Softness and Strength]." |
| | | 12 | 15 | Nagaoka, F. | Present the manuscript of "Ningen rashiku ikiau shakai [Society where people live together as human beings]." |
| 1973 | | 1 | 25 | Nagaoka, F. | Present the manuscript of "Kodomo no kangae ni motoduku jugyo [A class based on children's ideas]." |
| | 1st | 4 | | Nagaoka, F. | Teaching a class on "Important things at school." |
| | | | | | *Abbreviation |
| | | 6 | | Nagaoka, F. | Begin the lesson on "School lunchroom." |
| | | 6 | 1 | Nagaoka, F. | Present the manuscript of "Kangae au jugyo no jissenn [Practice in a class for thinking together]." |
| | | 6 | 1 | Nagaoka, F. | Present the manuscript of "Sho1 okasan no shigoto ni okeru mondai bamen no settei [Setting up problematic situations of Mother's work on 1st grade]." |
| | | 6 | 5 | Takenaka, Y. | Write the diary of "School lunchroom predictions." |
| | | 6 | 20 | Takenaka, Y. | Write the diary of "Nakayoshi Assembly." |
| | | 6 | | Nagaoka, F. | Extend the time for "Friend's Talk" in the morning assembly. |
| | | 6 | 25 | Takenaka, Y. | Write "Boku mo hon o tsukkutta [I made a book, too]." |
| | | 7 | 10 | Takenaka, Y. | Write the diary of "Errand runner." |
| | | 8 | 15 | Nagaoka, F. | Present the manuscript of "Kenmai ni manabi au [Learning hard together]." |
| | | 9 | | Nagaoka, F. | Begin the lesson "Autumn in the Field." |
| | | 9 | 23 | Chikasawa, G. | Write the draly of "Kumazemi no TV." |
| | | 9 | 23 | Okada, H. | Questions about Chikazawa's presentation of "Kumazemi no TV." |
| | | 9 | 25 | Nagaoka, F. | Present the manuscript of "Tsunagari no ugoki o toraeru me [Eyes to catch the movement of connections]." |
| | | | | | *Abbreviation |

*Note*: The gray areas are key events.

## Results

How does an analytical approach to practical records reveal the formation of Nagaoka's knowledge? The results of the analysis based on the five steps presented earlier are as follows:

***Step 1: Create a Personal History Chronology by Organizing the Events Described in the Practice Records into Timelines***

Creating a personal history chronology for Nagaoka helps identify how teachers solve their practice issues. The records of Nagaoka's practice included conversations with students in class, children's writings, teacher experiences, and essays containing the teacher's thoughts and ideas. The events that appear here are organized into a personal history chronology, with items indicating whose actions took place and the types of actions. Table 3 presents a portion of the personal history timeline that was created. This method identifies how teachers solve issues in their everyday educational practices.

***Step 2: Identify Situations When the Social Studies Teacher Became Aware of Practical Issues, Supported by Class Records***

What events in Nagaoka's daily educational activities led to the formation of his practical knowledge as a social studies teacher? This section uses a chronological table to identify the occasions when Nagaoka became aware of the practical issues he faced during the transition from the mature period to the development period and corroborates them with his class records. Nagaoka's 1973 article, "*Kenmei ni Manabiau*" (Learning Hard Together), describes how he became aware of issues in children's attitudes toward social studies classes when he was in charge of sixth graders in 1972 (Nagaoka, 1973a). Nagaoka's description of this time is as follows:

> As I was in charge of the sixth graders, I felt that while they were becoming more thoughtful, they seemed to be losing their "*Gamushara sa*" (enthusiasm) for learning as they worked hard together. Is this a natural growth of sixth graders? Is it a characteristic of today's children? What is the flaw in my teaching? I don't wish for children to be slammed. I want children to struggle vigorously and not be afraid of getting hurt. (p.8)

Nagaoka realized that the children did not seem to argue with their opinions in classroom discussions. He felt that the children "seemed to be hesitant to bring themselves into a place where they would get hurt" (p. 10) and that they lacked "*Gamushara sa*" in discussions.

What may have caused the children's lack of "*Gamushara sa*" in the discussions that Nagaoka became aware of? To examine this, we analyzed the class practice "*Namban jin torai*" (Coming of the Europeans), which took place in June 1972 (Nagaoka, 1972). In this lesson, Nagaoka refers to Europeans who came to Japan during the Azuchi-Momoyama period as subjects. He first had the children write down their questions, introduce them, and ask them to predict their answers. Each child then moderated discussions on Europeans' regions of origin, the purpose of their arrival in Japan, their relationship with China, and their means of travel. At the time, Nagaoka considered this a "children's pioneering class."

The verbatim records of this class show that children easily changed their opinions (Table 4). For example, a child named Ueno stated that the purpose of Europeans coming to Japan was as follows: "In Japan, the country was in disorder, and they were fighting, so they came to see what was going on." However, after

being criticized by other children, he immediately changed his mind, saying, “They probably had no intention of coming to Japan,” or “They probably did not intend to come.” A child known only as “S” and a child named Takahashi also changed their opinions quickly. Children need to discover errors in their opinions and transform them through classroom discussion. However, it is thought that the change in the children’s opinions in this situation was not the result of being exposed to sufficient criticism but because they did not have sufficient grounds for their opinions.

Table 4. Changes in children’s ideas in the lesson “Nanban jin torai.”

| |
|---|
| [Theme : Where do you think Namban jin are from?] |
| (Mod.) Let’s present our predictions to each other. First, let’s talk about “Where do you think Namban jin are from?” |
| (Y) I think they are Europeans. |
| (Child) Why do you think so? |
| (Kawai) Because it was written in a book. |
| (Katsura) Fess up and say you’ve seen it in a textbook. |
| (Mod.) Let’s hear it in order. |
| (Ueno) Europe is different from a country. |
| (Child) In Europe, there are many different countries. ... |
| **[Improvised changes in the child’s thinking.]** |
| [Theme : What is the purpose of coming to Japan?] |
| **(Ueno) In Japan, the country was in disorder and they were fighting, so they came to see what was going on.** |
| (Mod.) Do you have any questions? |
| (Child) I wonder if we will arrive in Japan so smoothly. |
| (Ueno) They probably came to sell weapons, because there was a war, and they were sure they could sell them. |
| (Mod.) What do you think of this possibility? |
| **(S) I don’t think it is weapons. Even if there were weapons, they would have brought something unique from their country, such as watches, textiles, clothes, etc.** |
| (Child) I don’t think there were any clocks. |
| (Asai) There was already a watch. ..... |
| (Kawai) Westerners found Japan and wanted to dominate it. First, they came to see what kind of people were there. At that time, they happened to have guns because they were afraid of being attacked. However, the foreigners thought they could get along with the Japanese, so they sold guns to the Japanese. |
| (Takesada) I think they came here to dominate Japan. At that time, Europeans were expanding their territories and seeking colonies. |
| **(S) Then, they came to Japan to check out how Japan was doing, with one or two ships, to reconnoiter the country. They looked at various places, wrote down the information in some books, made materials, brought them back to the country, held a meeting, and then tried to barge in.** |
| (Yamanaka) If they came to scout, they would not have brought guns. |
| **(Takahashi) They probably intended to pick a fight with each other in order to dominate the country.** |
| (Child) What? You exaggerate too much. We are here to scout. |
| (T) This is getting a little complicated. They say many things: they came to find out what kind of people the Japanese are, they came to dominate us, they came to make friends with us and sell us weapons, they came to make money by selling us guns because we are at war, or they just came to see what we are like. |
| **(Ueno) They probably had no intention of coming to Japan.** |
| (Child) Why do you think so? |
| **(Ueno) They probably did not intend to come.** |
| (Matsuda) They came here with the wind in their sails. They came here to see the sights, not to spy on them. |
| (Miyajima) They probably came to spread the word about their country in Japan. I think they wanted to boast about the progress of their country’s industry. |
| (Takesada) There may have been some coincidence, but the rest was probably to sell weapons. |
| **(Takahashi) They probably found out about the weapons later….** |
| **(Takahashi) Yes, I was just along for the ride. You heard from the Chinese and stopped in Japan on your way back.** |
| [Theme : Did you come by land through China or by sea?] |
| (N) If you were going to China, you would have come by land, because the sea would have been more dangerous. |
| (Ishida) Even if they were coming to Japan, they should have come through China…. |

*Note*: “T” stands for teacher’s statement. “Mod.” is moderator student. Created by the author with reference to Nagaoka (1972).

The record of this lesson, "*Namban jin torai*," shows the lack of "*Gamushara sa*" that Nagaoka feels. "*Gamushara sa*" means to insist on one's own opinion based on evidence in discussions of social studies classes. However, it is difficult to determine whether children express their opinions based on evidence and persistence.

***Step 3: Identify the Situations Where the Social Studies Teacher Finds a Solution to Practice Issues***

How did Nagaoka find a solution to the practical issues children no longer discussed in social studies classes, with evidence and commitment to their opinions? This section clarifies solving practical problems by creating chronological personal histories.

When sixth-grade students graduated in 1972 and new first-grade students entered in 1973, Nagaoka sought a fundamental solution. He started recognizing the subject matter in which many children were interested and considered organizing class-wide discussions to solve this (Nagaoka, 1973a). Nagaoka focused on what he called "Friends' Talk" time. This is an activity during the morning assembly in which some students present their free research, and the other children ask questions in response. This child-to-child questioning is known as "*Otazune*." Nagaoka eventually extended the "Friends' Talk" time to the first period in response to children's requests (Nagaoka, 1983, p. 53), looking for a common subject many children pursue.

Through this "Friends' talk" activity, Nagaoka became aware of a situation where he had to review his social studies class. The "Friends' Talk" that we focused on took place on September 23, after the summer vacation. A child named Chikazawa reported seeing a spider eating a cicada on TV. In response, a child named Okada asked how spiders ate cicadas. When the presenter could not answer the question, Okada turned to other classmates and asked,' Have anyone seen this cicada on TV? If so, please let us know. Can you tell me?" Okada asked. Because Okada had been pursuing the ecology of spiders himself, so he realized his lack of knowledge after receiving Chikazawa's presentation. He demanded a forum for class-wide discussions by asking his classmates for solutions. Nagaoka views Okada's statement as follows (Nagaoka, 1974a).

> I was stunned. This is because Mr. O's (author's note: Okada) method of learning was something that had not been seen in any of the first-year students I had taught. I was amazed not only at the questions he asked in September of his first year, but also at the connections he made with other children. It is fair to say that Mr. O's pursuit of "I won't move until I'm satisfied" really expected the help of his classmates. What makes this method of pursuit so wonderful is the fact that "everyone" is firmly positioned within "my pursuit." The attitude of thinking about classmates in one's own mind is naturally established. While pursuing his own research, he also listened to Mr. A (author's note: Chikazawa). Mr. O asked Mr. A to teach him, and he also earnestly asked other classmates to teach him. He considered all his classmates to be fellow students in the same pursuit as himself. He seemed to think naturally that his class was a group of people who thought with each other, and he wanted his class to be a group of people who had a lot of fun. (pp. 11–12)

Nagaoka was surprised at Okada's learning method. Surprisingly, the student inevitably sought the class's opinions as they deeply pursued the issues that were most pressing to them; as a result, they spontaneously formed a forum for discussion through mutual relationships with their classmates. In other words, Nagaoka realized that "as children deepen their own earnest pursuit, they stick to their own opinions and inevitably engage in class-wide discussions." This realization helped him solve a practical issue he had felt when he was in charge

of sixth graders in 1972: the lack of "*Gamushara sa*" in discussion situations in social studies classes.

***Step 4: Compare Classes on the Same Subject Before and After Problem-solving to Extract Differences in Characteristics***

How did Nagaoka's social studies classes change because of these practical problem-solving efforts? This section compares Nagaoka's classes before and after 1973 when it became clear that he had solved practical issues.

First, we identify the characteristics of Nagaoka's classes before and after 1973. For this purpose, we compared two "Bread factory" lessons implemented in second grade using the same subject matter in 1968 and 1974. A summary of each lesson is presented in Table 5. Nagaoka (1969) details the 1968 lesson, and Nagaoka (1974b) details the 1974 lesson.

Table 5. Overview of the 1968 and 1974 lesson "Bread factory".

| | 1968 | 1974 |
|---|---|---|
| Goal | Through the process of children's investigation of the bread factory, they will develop an inquiring mind and deepen their views and perspectives on factory production and work. | Through conducting research on the bread factory, each child will be encouraged to pursue the specific facts of the case. By discussing with other children, they will be able to think from multiple perspectives, and will come to understand the position of the weak and the solemnity of those who work there. |
| Plans | (1) The teacher began the lesson by capturing the children's interest in school lunch bread during the "Lunchroom" lesson that the children studied in 1st gread.<br>(2) The children write "Prediction of a bread factory for school lunch" and "The problem I want to investigate."<br>(3) The children visit the bread factory and write an essay after the visit.<br>(4) The children will create a panorama of the contents of the bread factory they visited and summarize it for the whole class.<br>(5) The children will be divided into groups and will construct models of machines and people to be placed in the panorama of the bread factory.<br>(6) When the children have completed their work, they will present it to the class and discuss issues such as sanitation management to deepen their mutual learning. | (1) The teacher began the lesson by capturing the children's focus on the fact that some of the bread in the school lunch contained grapes, and started the lesson with the topic "Where and how did they get into the bread?<br>(2) The children will ask "How is the bread for school lunch made?", and make predictions about the bread making process and bread factory, and express them in sentences and drawings.<br>(3) Children decide to make a model and visit the actual bread factory.<br>(4) Children will work in groups or individually to make machines and tools for the bread factory, talking about "important things in the bread factory."<br>(5) When the children have finished making their models, they will present them to the class and deepen their mutual learning based on the children's arguments about the meaning of the individual machines and tools and the way the people work in a factory. |

*Note*: The 1968 lesson is based on Nagaoka (1969, 1986), and the 1974 lesson is based on Nagaoka (1974b, 1975a, 1977a).

Comparing the two "Bread factory" lessons already shows a clear difference in the lesson goals: in the 1968 lesson, the goal was to sharpen the children's perspective through their pursuit of the bread factory, but in the 1974 lesson, the goal was higher, as the children's pursuit and the solemnity of the workers are approached through it.

The comparison of the lesson plans also revealed the characteristics of Nagaoka's classes. First, in the "Bread factory" lesson in 1968, Nagaoka had all the children write and submit "the problem I want to investigate" at the beginning of the lesson, and he used this list as a distribution chart of children's ideas. Nagaoka used this list as a distribution map of children's ideas (Table 6) and planned class development, such as group activities and presentations, based on the spread and concentration of children's interests1 ([Characteristic 1] Lesson

Table 6. An example of the distribution map of children's ideas created by Nagaoka.

| The issues related to the bread factory (June 10) | |
|---|---|
| **<How Bread Is Made and the Techniques Used>**<br>Shimomura: How do you make it?<br>Uehira: Do you have to do it in a certain order?<br>Oura: How do you shape the bread?<br>Saito: How do you give the bread its taste?<br>Momota: Does the taste change over time?<br>Nakaoka: How do you put in the cream and stuff?<br>Horii & Hirooka: How do you make it taste like melon?<br>Endo: Why does bread get that hard part at the end?<br>Yoshikawa & Komatsu: Why do you bake it?<br>Nozaki: How many minutes does it take to bake?<br>Nishibayashi: Why do you make bread in the first place?<br>Sunano: How many loaves of bread can you make in a day?<br>Saito: When do you start making the school lunch bread?<br>Sato: Why are the shapes of the bread different?<br><br>**<Ingredients>**<br>Shichibu: What are the ingredients?<br>Miyoshi: How many kinds of ingredients are there?<br>Hirooka & Saito: How do you turn wheat into flour?<br><br>**<Machines>**<br>Okazaki & Kitora: What kind of machines do you use?<br>Ueda: Are the machines bigger than one meter?<br>Inooka: What's inside the machines?<br>Saito & Horii: How many types of machines are there?<br>Shioi, Yamagami & Endo: How do the machines move and how do you control them?<br>Nagai: Do the machines work one after another?<br>Matsuda: How are the machines set up or arranged?<br>Saito & Baba: I think the machines are lined up, right?<br>Matsubara & Momota: What do the machines do?<br>Miyoshi: Does one person control the switch?<br>Takeda: How many kinds of things can the machines do?<br>Sunano: Do you use different machines for anpan and white bread?<br>Baba: I think you have lots of the same machines so you can make lots of bread at once. Is that right?<br>Hirooka: Even with machines, are there parts that are still hard to do? | **<People Who Work There>**<br>Oura: How many people work there?<br>Uehira: Is there a specific person who delivers bread to schools?<br>Takashima: How many people do the deliveries?<br>Hirooka: What parts are hard to do with machines?<br>Hirooka: What's the difference between what machines do and what people do?<br>Matsuda: What are the jobs that take a lot of work?<br>Uehira: How many people are needed for one job?<br>Nagai: Are the people who make cream bread separated from others?<br>Baba & Takashima: Do they wear white uniforms?<br>Kimura: Do they wear masks?<br>Kakinoki: How many hours do they work?<br>Higashi: What time does the work end?<br>Uchiyama: When is the busiest time?<br>Washida: What kinds of things do they think up to make it better?<br>Washida: What's the hardest part of the job?<br>Oura: When do they get days off?<br>Uehira: I think the workers take turns staying overnight. Is that true?<br>Takeda: Do they wear gloves or not?<br><br>**<Other Questions>**<br>Matsuda, Oya & Fukuoka: How do they put the bread into plastic bags?<br>Yoshimoto: When and where do they put the bread into plastic bags?<br>Saito: Is bread made by people the same as bread made by machines?<br>Kimura: What's the most important thing in the bread factory?<br>Fujine & Saito: How big is the bread factory?<br>Ogida: What do they do when a machine breaks?<br>Saito: What kind of place makes the machines? |

*Note*: Refer to Nagaoka (1969, 1986) for further details.

development based on the distribution map). In addition, Nagaoka considered sanitation management important for children studying bread factories. In this lesson, while the children were making a panorama of the factory interior, a child named Nishibayashi made a dog model, which was not directly related to the lesson's content and was requested to be included in the panorama. Nagaoka recorded that he took a dialogue written by a child who questioned sanitation management, which he knew in advance, and asked the child to think about why the dogs were not allowed to enter the factory. According to the teacher's viewpoint, Nagaoka prepared the materials in advance while developing the lesson ([Characteristic 2] Preparation of materials in line with the teacher's viewpoint).

In the "Bread factory" lesson in 1974, when the students finished making a model of the bread factory and began to present it, Nagaoka recorded that a child named Shimogishi made a definite assertion that "the reel oven is the king of the bread factory." Meanwhile, Nagaoka identified a child with a conflicting opinion about "the king of the bread factory" before the class. He deepened the discussion by intentionally nominating them during class ([Characteristic 3] Preparing for conflicting children's opinions). In addition, the central theme of the children's discussion in this lesson went beyond the teacher's assumption of "the meaning of the individual machines and tools and the way people work in a factory" to "what work should be done by machines and what work should be done by humans." Furthermore, the children's pursuit of this theme was not limited to the "Bread factory" lesson. In the "Bus fare box" lesson, a child named Ueda raised the question of the rationality of mechanizing the bus fare box. In the "Work of postman" lesson, a child named Mizumoto discussed the changes in the work of postmen with the advent of postmarking machines. In this way, even though the social phenomena under study have changed, the children continue to pursue the common theme of "What jobs should be done by machines and what jobs should be done by humans?" Nagaoka seems to have structured and developed the lesson around the common theme children felt the need to pursue across multiple lessons ([Characteristic 4] Development of a lesson based on a common theme).

***Step 5: Compare the Lesson Plan of the Period Before and After Problem-solving to Elucidate the Tendencies of the Lessons***

A comparison of classes in the same subject matter revealed several characteristics. How were these expressed in lessons before and after 1973 when solving Nagaoka's practical issues? The subjects of this study were 28 lesson plans conducted and recorded from the mature to developmental period (1967-1978). The aim was to elucidate the changes in the tendency of the classes by clarifying the extent to which [Characteristic 1] to [Characteristic 4], which were revealed through comparison of the same subject matter, are expressed in these lessons.

First, to clarify the tendency expressed in [Characteristic 1], it is necessary to clarify the lessons in which the distribution map of all children's ideas was created. In Nagaoka's record of practice, distribution maps were created only in the following five lessons: "Bread factory" in June to July 1968, and the "*Kintetsu chika noriire koji*" (Station Construction) in November to December 1969 (Nagaoka, 2002), "Two-season crop" in June 1970 (Nagaoka, 1970), "Japanese Industry" in October 1971 to March 1972 (Nagaoka, 1971a), and "Field Trip" in May 1973 (Nagaoka,1973b).

Next, we identify the changes in the trends in the expressions of [Characteristic 2] and [Characteristic 3]. For this purpose, we analyzed 18 lessons conducted between 1967 and 1978, for which speech protocols

were maintained. When these speech protocols were separated according to the content of the discussions, 78 content items were identified, as shown in Table 7. Each piece of content was analyzed to determine whether the teacher's actions exhibited [Characteristic 2] or [Characteristic 3]. Overall, [Characteristic 2] was identified 21 times and [Characteristic 3] 17 times. In addition, a cumulative relative frequency graph was created for each characteristic to determine the transition, as shown in Figure 1.

Table 7. Analysis of the content and characterristics of discussions based on analysis of speech protocols of Nagaoka's classroom practice from 1967-1978.

| Lessons | No. | Contents of discussions | Range of speech protocols | | Characterristics of discussions |
|---|---|---|---|---|---|
| "School lunchroom" | 1 | What We Know About School Lunchrooms | Nagaoka (1986) | p.4,l.3-p.51,l.12 | |
| | 2 | Questions about the lunchroom | | p.51,l.13-p.55,l.17 | |
| "Green-grocer" | 3 | Innovations in the production process | Nagaoka (1968)* | p.12,l.4-p.14,l.19 | |
| | 4 | Lines of flow in the store | | p.14,l.20-p.14,l.43 | |
| | 5 | The role of weights and clocks in the store | | p.14,l.45-p.15,l.44 | [Characteristic 2] Nominate Washita's statement. |
| | 6 | Contents of the change purse | | p.15,l.45-p.16,l.22 | [Characteristic 2] Nominate Saito's statement. |
| | 7 | Distribution channels for products | | p.16,l.24-p.18,l.41 | [Characteristic 2] Teachers present "Distribution channels." |
| | 8 | Reasons for selling at a discount | | p.18,l.43-p.19,l.55 | [Characteristic 2] Nominate Ueda's statement. |
| "Olden days" | 9 | Reasons that can be judged as past composition | Nagaoka (1976a) | p.93,l.20-p.97,l.14 | |
| | 10 | Ways of expressing past ages | | p.97,l.15-p.98,l.2 | |
| | 11 | Culture and ideas of past ages | | p.98,l.3-p.98,l.12 | |
| "Kintetsu chika noriire kouji" | 12 | Identification of the location by aerial photographs | Nagaoka (1986) | p.109,l.1-p.109,l.5 | [Characteristic 2] Teachers present "Aerial photo." |
| | 13 | Relationships between things that changed due to construction | | p.109,l.6-p.112,l.15 | |
| | 14 | Changes in stores due to subway construction | | p.112,l.16-p.116,l.12 | [Characteristic 2] Nominate Baba, Ogida, and Momota's statement. |
| | 15 | Intentions of the construction of the stores | | p.116,l.13-p.117,l.10 | [Characteristic 3] Nominate Saito and Momota's statement. |
| | 16 | Impact of the subway construction on daily life | | p.117,l.11-p.120,l.13 | [Characteristic 2] Nominate Momota and Nagaoka's statement. |
| "Two-season crop" | 17 | Projected changes in rice production | Nagaoka (1971b) | p.42,upper,l.2-p.42,lower,l.6 | |
| | 18 | Factors contributing to the decrease in rice production | | p.42,lower,l.7-p.45,upper,l.8 | [Characteristic 3] Nominate Matsuyama and Takesada's statement. |
| | 19 | Changes in the area of arable land for rice | | p.45,upper,l.9-p.46,upper,l.15 | [Characteristic 2] Teachers present "Graph of arable land area." |
| | 20 | Agricultural calendar of vegetable cultivation in Nara and Kochi | | p.46,upper,l.16-p.47,lower,l.23 | [Characteristic 2] Teachers present "Agricultural calendar." |
| "Japanese agriculture" | 21 | Reasons why young people dislike agriculture | Nagaoka (1986) | p.152,l.10-p.156,l.11 | [Characteristic 2] Teachers present "Statistics data." |
| | 22 | Is agriculture more or less profitable? | | p.156,l.12-p.158,l.9 | [Characteristic 2] Nominate Kui and Matsuda's statement. |
| | 23 | Is agriculture in decline? | | p.158,l.10-p.159,l.10 | |
| | 24 | Progress and decline of agriculture | | p.159,l.11-p.161,l.15 | [Characteristic 2] Nominate Kawai and Ishii's statement. |
| | 25 | Can mechanization be called progress in agriculture? | | p.161,l.16-p.163,l.6 | |
| | 26 | Lack of profit due to overproduction | | p.111,lower,l.14-p.112,upper,l.22 | |
| "Japanese industry" | 27 | When orders come in? | Hibi (1977) | p.112,upper,l.23-p.112,lower,l.17 | |
| | 28 | Failure in cottage industry and production | | p.112,lower,l.18-p.113,upper,l.14 | |
| | 29 | The state of factory machinery and post-industrial treatment | | p.113,upper,l.15-p.113,lower,l.11 | |
| | 30 | Working environment of workers and their families | | p.113, lower,l.12-p.114,upper,l.22 | |
| | 31 | Understanding of fashions and types of products and machines | | p.114,upper,l.23-p.115,upper,l.17 | |
| "Nanban jin torai" | 32 | Areas of origin of the Nanban jin | Nagaoka (1972) | p.22,lower,l.6-p.23,lower,l.16 | |
| | 33 | Purpose of coming to Japan | | p.23,lower,l.17-p.24,upper,l.16 | |

| | | | | | |
|---|---|---|---|---|---|
| "Mother's Work" | 34 | Differences in mothers' work depending on the day of the week | Nagaoka (1975a) | p.145,upper,l.11-p.148,lower,l.14 | [Characteristic 3] Nominate Chikasawa and Takenaka's statement. |
| | 35 | Mothers' daily depositions | | p.148,lower,l.15-p.153,lower,l.10 | |
| | 36 | Difficulties of mothers doing domestic labor | | p.155,upper,l.15-p.157,lower,l.15 | |
| | 37 | The mother's domestic work | | p.159,upper,l.4-p.161,lower,l.9 | |
| "Stores" | 38 | The ingenuity of the florist's model making process | Sakaki (1974) | p.66,l.12-p.70,l.4 | |
| | 39 | What the florist takes care of | | p.70,l.5-p.74,l.12 | [Characteristic 2] Teachers present "Ingenuity of florists." |
| | 40 | Flower suppliers | | p.74,l.13-p.p.74,l.35 | [Characteristic 3] Nominate Takenaka's statement. |
| | 41 | Devices that only florists do | | p.74,l.36-p.75,l.25 | [Characteristic 2] Teachers present "Ingenuity of florists." |
| "Bread factory" | 42 | The forecast of bread factory | Nagaoka (1977a) | p.115,l.8-p.118,l.18 | |
| | 43 | The relationship between workers' work and machines | | p.119,l.1-p.122,l,3 | |
| | 44 | The role of individual machines | | p.122,l.4-p.123,l.8 | |
| | 45 | Ingredients and how they are stored | | p.123,l.8-p.125,l.16 | [Characteristic 3] Presentation of Watanabe's model. |
| | 46 | What is the king of the bakery | Nagaoka (1974b) | p.34,lower,l.7-p.38,l.15 | [Characteristic 3] Nominate Shimogishi, Ueda, Ishihara, Umemoto's statement. |
| "Bus fare box" | 47 | Whether work is simplified by mechanization or not | Nagaoka (1975b) | p.21,l.12-p.23,l.19 | [Characteristic 3] Nominate Ueda, Fukuzawa, Hayashida, Tate's statement. |
| | 48 | What is a driver's job and what is its purpose | | p.23,l.20-p.24,l.7 | |
| "Work of postage" | 49 | What we know about the post office | Nagaoka (1975c) | p.21,lower,l.8-p.22,middle,l.8 | |
| | 50 | The function of the post box in relation to the ingenuity of the post box | | p.27,middle,l.8-p.29,middle,l.3 | [Characteristic 2] Nominate Yamanaka's statement. |
| | 51 | Location of post boxes | | p.29,lower,l.3-p.30,lower,l.14 | [Characteristic 3]Nominate Tanabe, Okada's statement. |
| | 52 | Relationship between the location of post boxes and the population | | p.30,lower,l.15-p.32,upper,l.22 | [Characteristic 3] Nominate Hayashida, Tanaka, Yamada's statement. |
| | 53 | The pros and cons of changing human work by machines | | p.33,middle,l.1-p.36,upper,l.11 | [Characteristic 3] Nominate Mizumoto, Ishihara, Inoue, Takenaka's statement. |
| "Town" | 54 | Who should maintain the river | Nagaoka (1976a) | p.100,l.18-p.102,l.12 | [Characteristic 2] Teachers present "City management." |
| | 55 | Who should own parks and billboards | | p.102,l.13-p.103,l.16 | |
| | 56 | Whether private work should be done by the public | | p.103,l.17-p.104,l.21 | [Characteristic 2] Teachers present "Request to the City." |
| | 57 | Why cleanup work is on the way | | p.105,l.1-p.108,l.2 | |
| "Garbage" | 58 | Why it gets dirty outside the windows | Nagaoka (1976b) | p.38,upper,l.21-p.38,lower,l.22 | |
| | 59 | Where there is a lot of garbage | | p.38,lower,l.23-p.39,lower,l.18 | [Characteristic 3] Nominate Koumoto, Nakayama, Murata, Tate's statement. |
| | 60 | What garbage is made of | Nagaoka (1978b) | p.209,l.7-p.p.211,l.3 | |
| | 61 | What paper is made of | | p.211,l.4-p.213,l.12 | |
| "Cold-damaged areas and Rice" | 62 | Children's suffering due to the decrease in family size | Nagaoka (1977a) | p.141,l.4-p.144,l.14 | |
| | 63 | Economic hardship of farmers | | p.144,l.15-p.146,l.9 | |
| | 64 | Worries about illness | | p.146,l.10-p.148,l.3 | [Characteristic 2] Nominate Yamanaka's statement. |
| | 65 | Children's thoughts when making a living | | p.148,l.4-p.155,l.6 | [Characteristic 3] Nominate Uranishi, Torisu, Nishimura's statement. |
| "Kitchen and Agriculture" | 66 | How rice production compares by region | Nagaoka (1977b)* | p.21,l.6-p.22,l.40 | |
| | 67 | Environmental conditions favorable for rice cultivation | | p.22,l.41-p.25,l.51 | [Characteristic 3] Nominate Onishi, Kitanaka, Yamada's statement. |
| | 68 | Reasons for rice cultivation in Tohoku region | | p.25,l.52-p.27,l.39 | [Characteristic 2] Teachers present "Unit area." |
| "Iron" | 69 | How to prevent pollution and work safely | Nagaoka (1990) | p.267,upper,l.4-p.276,lower,l.10 | [Characteristic 3] Nominate Otoda, Kobayashi, Yamaguchi's statement. |
| | 70 | Factory size and head office/branches | | p.276,lower,l.11-p.281,upper,l.2 | |
| | 71 | Location of steel mills and their efforts to deal with heat | | p.281,upper,l.3-p.286,lower,l.5 | |
| | 72 | Rationalization of facilities and functions of blast furnaces | | p.286,lower,l.6-p.291,lower,l.10 | |
| | 73 | Cooling process of ironmaking | Tanigawa (1973)* | p.28,l.3-p.30,l.2 | [Characteristic 3] Nominate Kubo, Nishimura's statement. |
| | 74 | Location of the plant | | p.30,l.4-p.31,l.12 | [Characteristic 3] Nominate Iwai, Onishi's statement. |
| | 75 | Layout of plant facilities | | p.31,l.13-p.32,l.42 | [Characteristic 3] Nominate Tanigawa, Yamada, Nakao's statement. |
| | 76 | People working in a factory | | p.32,l.43-p.33,l.12 | |
| | 77 | Locations of iron ore | | p.33,l.13-p.34,l.34 | [Characteristic 2] Teachers present "Producing area." |
| | 78 | Products of the plant | | p.34,l.35-p.35,l.16 | [Characteristic 2] Teachers present "Products." |

*Note*: The parts in bold indicate "Characteristic 3." Asterisks indicate unpublished materials2.

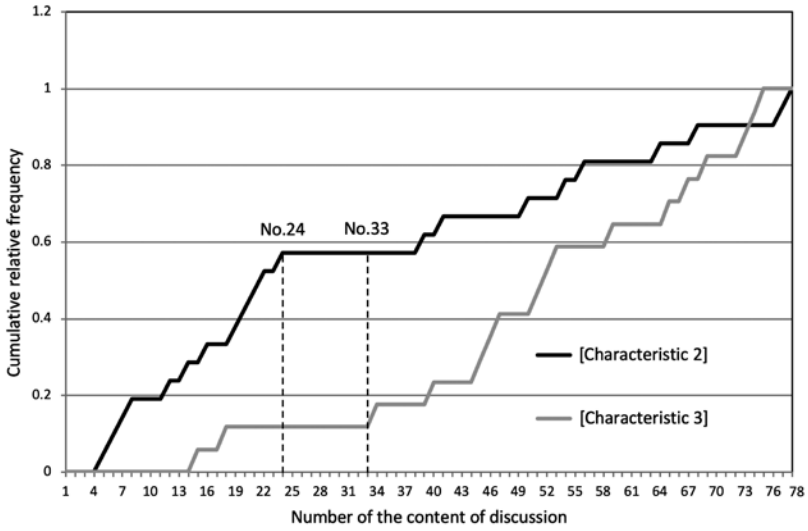


Figure 1. Cumulative relative frequency graph of [Characteristic 2] and [Characteristic 3] to the contents of discussion.

From this graph, the period when the cumulative relative frequencies of the contents showing [Characteristic 2] and [Characteristic 3] are farthest apart is from No. 24 "Progress and decline of agriculture" in the lesson "Japanese agriculture " in June 1971, to No. 33 "Purpose of coming to Japan" in the lesson "Nanban jin torai" in June 1972. The difference between the two decreased after No. 34 "Differences in mothers' work depending on the day of the week" in the lesson "Mother's work" of November 1973. This indicates that the period between Nos.33 and 34, from June 1972 to November 1973, was marked by a transformation in the trend from classes showing more of [Characteristic 2] to classes showing more of [Characteristic 3].

Finally, to clarify the tendency expressed in [Characteristic 4], the connections between lessons in which children have been engaged in long pursuits on a common theme had to be identified. Nagaoka conducted the following four lessons between 1976 and 1977: "Cold-damaged areas and Rice" (Nagaoka, 1977a), which investigates the suffering of people and their families living in cold- damaged areas; "Kitchen and Agriculture" (Nagaoka, 1977b), which examines the overcoming of natural conditions by farmers in cold-damaged areas; "Higashiguchi Electric" (Nagaoka, 1978a, 1979), which examines farmers' struggles with agricultural machinery and industrial producers' difficulties in production and sales, and their attempts to overcome these difficulties; and "Iron" (Nagaoka, 1990), which investigates the working conditions of industrial workers and their attempts to overcome pollution. Children consistently pursued the common learning theme of "the hardships and struggles faced by people engaged in production and their overcoming." Thus, [Characteristic 4] was presented during 1976–1977. Based on the above results, it can be said that the tendencies of Nagaoka's classes transformed from [Characteristic 1] and [Characteristic 2] to [Characteristic 3] and [Characteristic 4] after the first half of 1973, as shown in Table 8.

Table 8. Transformation of the tendency of teaching from 1967 to 1977 in Nagaoka.

| Year | Grade | Manth | Lessonss | Characteristic 1 | Characteristic 2 / Characteristic 3 | Characteristic 4 |
|---|---|---|---|---|---|---|
| 1967 | 1st | 6 | "School lunchroom" | | | |
| | | 11 | "Mother's Work" | | | |
| 1968 | 2nd | 5 | "Greengrocer" | | | |
| | | 6-7 | "Bread factory" | ○ | | |
| 1969 | | | "Fireman" | | | |
| | | | "Work of postman" | | | |
| | 3rd | | "Seven-kilometer scale" | | | |
| | | 6 | "Nara town survey" | | | |
| | | | "Olden days" | | | |
| | | 11-12 | "Kintetsu chika noriire kouji (Station Construction)" | ○ | | |
| 1970 | 4th | | "Learning about local area" | | | |
| | | 6 | "Two-season crop" | ○ | | |
| 1971 | | | "Transportation in olden days" | | | |
| | 5th | 6 | "Japanese agriculture" | | | |
| | | 10-3 | "Japanese industry (socks factory)" | ○ | | |
| 1972 | 6th | 6 | "Nanban jin torai (Coming of the Europeans)" | | | |
| 1973 | 1st | 4 | "Tour of the schoolyard" | | | |
| | | 5 | "Field trip" | ○ | | |
| | | 5 | "Important things at school" | | | |
| | | 6 | "School lunchroom" | | | |
| | | | "Autumn fields" | | | |
| | | 10 | "Sports Day" | | | |
| | | 11 | "Mother's work" | | | |
| 1974 | 2nd | 5 | "Stores" | | | |
| | | 6 | "Bread factory" | | | ○ |
| | | | "Bus fare box" | | | |
| 1975 | | 1-2 | "Work of postman" | | | |
| | 3rd | | "Town" | | | |
| | | 10 | "Garbage" | | | |
| 1976 | | | "Nara's ink factory" | | | |
| | 4th | | "Life on Islands" | | | |
| | | 10-11 | "Cold-damaged areas and Rice" | | | |
| 1977 | 5th | 5 | "Kitchen and Agriculture" | | | ○ |
| | | 9-10 | "Higashiguchi Electric" | | | |
| | | 11 | "Iron" | | | |
| | | 1-2 | "Factory tours" | | | |

In the beginning of November 1973, the class was transformed from one that displayed more of [Characteristic 2] to one that displayed more of [Characteristic 3].

*Note*: Gray areas are lessons with unclear details.

## Discussion

How do social studies teachers form practical knowledge? The transformation of practical knowledge elucidated in this study using Nagaoka as a case study is shown in Figure 2.

Nagaoka became aware that children did not discuss—with evidence and commitment—their own opinions in the sixth-grade class in 1972. The following year, in September 1973, during the "Friends' Talk" time, a child named Okada showed a learning method that Nagaoka had not expected, in that he inevitably asked for class discussion due to deepening his pursuit of knowledge. Nagaoka realized that "as children deepen their own earnest pursuit, they stick to their own opinions and inevitably engage in class-wide discussions." It is believed that he discovered a way to solve the practical issues he faced. Nagaoka's classes changed after the first half of 1973 when this practical issue was resolved. It was used to show [Characteristic 1] lesson development based on the distribution maps and [Characteristic 2] the preparation of materials in line with the teacher's viewpoint. However, it now shows [Characteristic 3] the preparation of children's opinions and [Characteristic 4] the development of a lesson based on a common theme. Thus, Nagaoka developed his practical knowledge by solving practical issues.

Regarding the formation of practical knowledge, social studies teachers develop practical knowledge

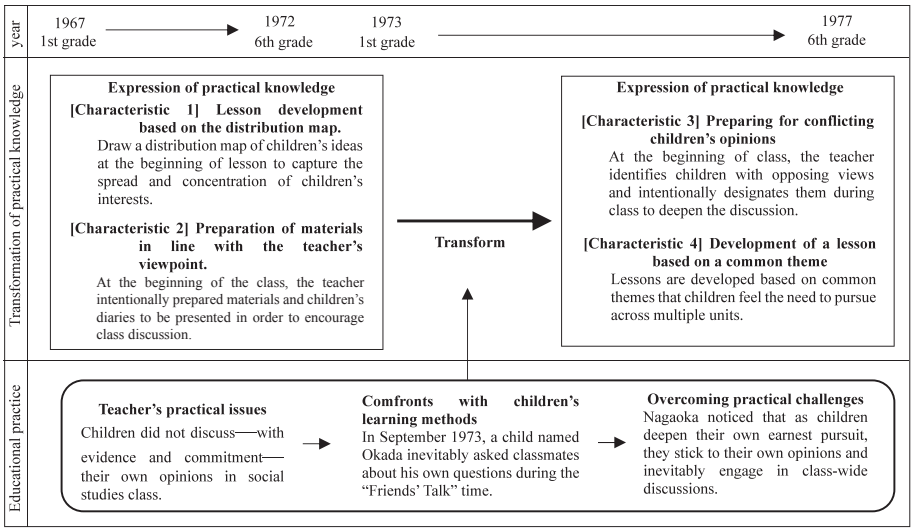


Figure 2. The process of formation of the social studies teachers' practical knowledge through awareness of children's learning methods.

by overcoming practical issues through learning from children's learning methods and transforming their teaching trends.

What methods can be used to describe the development of social studies teachers' practical knowledge? This study applied a personal history chronology of social studies teachers, created from their practice records, to identify situations in which they solved practical issues. This method captures the change in the class trends, before and after the change, by comparing the lesson structure. This approach to analyzing practice records enabled us to empirically depict the formation process of social studies teachers' practical knowledge.

This method—the analysis of practice records—has several advantages over the traditional narrative approach. First, compared to action research that covers at most several years (e.g., Kohlmeier et al., 2020; Ponte, et al., 2004), this method allows us to conduct a study that considers long-term, autonomous transformation throughout the entire teaching history of social studies teachers. This study's direct object of analysis was Nagaoka's 11-year record—from the maturity to the development period (1967–1978). This period was a turning point for Nagaoka, as confirmed in Fujisawa's (1998) research. By utilizing this method, a detailed analysis can be carried out by examining the entire history of a particular social studies researcher to identify the period in which a major transformation occurred. Furthermore, traditional action research has captured temporary changes due to large-scale interventions by researchers through the development and implementation of programs and other practices (e.g., Jang, 2024; Kawaguchi, 2014). However, we demonstrated that this method shows how the propensity of lessons and different ways of structuring lessons over a long period can be viewed as an autonomous transformation of social studies teachers.

Second, compared to life history research methods that have captured the transformation of teachers due to social situations and historical events (e.g., Attwood, 2021; Johnson, 2002; Murai, 2012, 2014), this method can capture the formation of practical knowledge based on the situations that social studies teachers experience through their daily teaching practices. This can be facilitated by the use of life-history research. Moreover, life history studies have not adequately revealed the classroom activities conducted by teachers (e.g., Halse, 2010;

Himeno, 2015; Hung, 2018; Johnson, 2007). It is also possible to include transformations that teachers may not be aware of while analyzing their teaching methods. In this study, the class facts were determined and analyzed from the class conception in the lesson "Bread factory" and the records of 28 lessons conducted from the mature period to the development period. As these practice records were written close to the time the practice took place, it was possible to analyze the details of the classes based on precise facts. This allowed us to clarify the transformation of the class trends, which Nagaoka himself seemed unaware of and which he did not mention. This method identified that the factor in the transformation of the class was the relationship with the children in daily educational practice.

The analysis of practice records reveals how social studies teachers develop practical knowledge through long-term, subtle transformations, often unnoticed even by the teachers themselves. It reveals that their understanding improves via extraordinary events and daily activities. Thus, this approach can address methodological issues of the traditional narrative method (Akita, et al., 2000; Fujiwara, et al., 2006; Goodson & Sikes, 2001; Kagan & Burton, 2000), in which the "story" told by the teacher is the object of analysis.

## Conclusion

This study used practice records to examine the case of Fumio Nagaoka, an elementary school educator. The findings indicated that social studies teachers cultivate practical knowledge by addressing real-world challenges through interactions with students' learning approaches. Furthermore, the development of practical knowledge can be illustrated by constructing a timeline of the teacher's personal history derived from practice documentation, recognizing situations where teachers tackle practical issues, and observing shifts in class dynamics before and after these events by comparing lesson structures. This illustrates the ongoing, self-directed process of curriculum modification as social studies teachers gain deeper insights into students' understanding through their everyday educational experiences. This method has not been explored in the traditional narrative approach.

The development of teachers' practical knowledge highlighted here calls for a reevaluation of the teacher's role as a gatekeeper in social studies education. Traditionally, aspects of children's realities that social studies teachers should consider as gatekeepers have included children's race, gender, religion, and minority status (Buchanan et al., 2020; Ender, 2019; Kim et al., 2018; Tannebaum, 2018). When addressing how to manage controversial issues involving these social identities (Kim et al., 2018), teachers are expected to adjust their teaching practices accordingly. However, these are not the only factors teachers must consider when adapting educational goals, content, and methods. Effective gatekeeping requires teachers to understand the constantly shifting thoughts and daily transformations of children and to design lessons accordingly. As Thornton (2005) states, "No two children have the same needs," and teachers must develop gatekeeping approaches that acknowledge children's evolving needs.

To achieve such detailed gatekeeping in every classroom, teacher education that respects teacher autonomy will be essential. Recently, worldwide, merit-based, competitive teacher evaluations using uniform standards through student learning and staff assessments have advanced (Ogawa, 2015). Conversely, this study's findings reveal that curricula developed through teacher gatekeeping are unique and context-dependent. To ensure each child's learning, it is important not to impose uniform standards on teachers but to respect their autonomy, allowing them to express creativity in their classrooms. Moreover, the study suggests that the process of teachers working to understand children's learning is a critical factor in their professional growth. Traditional

narrative approaches have credited teacher development to changes within schools, historical and social events, and researchers' theoretical interventions, which likely enhanced teachers' knowledge of educational content. However, this may have placed pressure on the time teachers dedicate to understanding children in classrooms over the long term. Moving forward, allocating time for meaningful dialogue between teachers and children within classrooms will become increasingly vital for teacher growth.

This study also demonstrated the effectiveness of the teaching records analysis approach in examining the development of teachers' practical knowledge. In the future, applying this approach to describe the practical knowledge formation of other social studies teachers may lead to the discovery of new processes through which such knowledge is developed. Records of proficient teachers' lessons form an important part of each country's educational history. By using this approach, it is possible to collect, organize, and analyze the teaching records accumulated by outstanding teachers in various countries. Through this process, we can clarify the processes and factors through which outstanding teachers in various countries develop their practical knowledge, researchers will be able to support the professional growth of modern educators based on past practices teachers. Such insights can inform the design of professional development programs and help contemporary educators adopt contextually grounded and reflective teaching practices. Furthermore, in recent years, Japanese lesson studies have gained recognition abroad, and their value has been reaffirmed within Japan. Teachers have accumulated unique records of their practices over the years, reflecting Japanese teaching culture. In the future, it will be possible to further utilize these practice records to clarify the practical knowledge of Japan's proficient teachers and share it internationally. Additionally, it will be crucial to explore what kind of social studies teacher education is feasible based on the findings of such historical research.

Being a case study focused solely on one teacher, it is possible that future research involving other teachers will uncover new factors that influence the development of practical knowledge among social studies educators. Furthermore, this study was unable to identify change factors related to socio-cultural backgrounds that were not documented in the teacher's practice records. To improve this research, it will be necessary to explore how historical events and life experiences intersect with teachers' transformations and to verify their influence.

## Notes

1. According to Nagaoka (1975a), six children's ideas were listed during the 1974 lesson "Bread factory." However, this was only an understanding of some of the children and was not distributed to the children. Therefore, the distribution map is clearly different from those prepared for other lessons.
2. Nagaoka (1968, 1977b) and Tanigawa (1973) are unpublished materials. Therefore, it refers to the number of pages in "Materials section" of Urushibata (2015).

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