HOKKAIDO UNIVERSITY

Title	Group-Level Self-Regulation in Self-Directed Learning [an abstract of entire text]
Author(s)	譚, 翠玲
Description	この博士論文全文の閲覧方法については、以下のサイトをご参照ください。 https://www.lib.hokudai.ac.jp/dissertations/copy-guides/
Degree Grantor	北海道大学
Degree Name	博士(国際広報メディア)
Dissertation Number	甲第15810号
Issue Date	2024-03-25
Doc URL	https://hdl.handle.net/2115/91961
Type	doctoral thesis
File Information	Tam_Chuiling_summary.pdf

Hokkaido University Collection of Scholarly and Academic Papers : HUSCAP

博士論文要約

Group-Level Self-Regulation in Self-Directed Learning

（自己主導型学習におけるグループ・レベル自己調整）

Chui Ling Tam

1. Introduction

This chapter began by describing the fact that more and more learners are now learning online in a self-directed way. Despite success stories, the majority of learners do not achieve their learning goals because they lack autonomy. The goal of language education is to increase learner autonomy. Self-directed learning can enhance learner autonomy. Collaboration with others has been suggested as the most effective method of self-directed learning. In addition, it has been shown that the ability to master good self-regulation at the group level is one of the keys to the success of collaborative activities. However, four issues remain unresolved in relation to the above. First, there is a lack of appropriate tools for measuring self-regulation at the group level. Second, there is a lack of quantitative research on self-directed learning. Third, there is a lack of understanding of how individual characteristics may affect self-regulation at the group level. Fourth, there is a lack of understanding of self-directed learning from the perspective of group-level self-regulation.

In order to gain a better understanding of group-level self-regulation of self-directed learning, this study was conducted in three sub-studies. Study 1 is a quantitative study designed to verify the validity and reliability of the modified Japanese version of the GMS and to test its usability. Study 2, also a quantitative study, aimed to determine which individual characteristics are related to group self-regulation. Study 3 is a qualitative study that aims to understand self-directed learning through group self-regulation. Below are the details of six research questions:

1) Is the Japanese version of GMS reliable and valid?
2) Do learners' mean scores on metacognitive processes differ between self-directed and teacher-directed learning?
3) Is the revised GMS valid and reliable in the context of self-directed learning?
4) Do GMS scores differ significantly based on gender, age group, Japanese proficiency, learning time, learning frequency, motivation level or motivation type?
5) How is corrective feedback provided in eTandem learning?
6) How is corrective feedback received in eTandem learning?

This study is expected to promote further research on self-directed learning in the area of learner autonomy as well as group-level self-regulation in Japan. Finally, it is expected to provide teachers with more insight into the difficulties associated with group-level self-regulation.

Finally, this chapter provided an overview of the structure of the dissertation. This chapter serves as an introduction to the dissertation. Chapter 2 is devoted to a review of the literature. Chapter 3 provides an overview of the research design of the study. Chapters 4-6 discuss the specifics of the three sub-studies. A summary of the study is presented in Chapter 7.

2. Literature Review

After an overview of the chapter as a whole, it is divided into five sections. First, it provides an overview of research on learner autonomy, including its definition and importance in language learning, approaches to developing learner autonomy, and self-directed learning and self-regulation, two important concepts related to learner autonomy. Then, the previous research related to the topic of group-level self-regulation in self-directed learning, the previous research related to the topic of individual differences in self-directed learning, and the previous research related to the topic of corrective feedback in self-directed learning in the context of eTandem learning are reviewed separately. The final section is a summary of this chapter. Below are the main points of this chapter.

2.1. Research Related to Learner Autonomy

Autonomous learners are individuals who are able to control their own learning management, learning content and cognitive processing. Developing learners with these skills is an important goal of language education. In order to promote learner autonomy, reflection, interaction and experimentation are considered effective methods, of which tandem learning is a useful method. In this era of rapid development, Morris (2019) pointed out that our understanding of self-directed learning is inadequate, and empirical research on social and personal contexts, which play an important role in self-directed learning, will enhance our understanding of self-directed learning.

2.2. Research Related to group-level self-regulation in self-directed learning

With the widespread use of collaborative activities, research interest in SRL and metacognition has shifted from the individual to the group level. Although understanding how learners engage in self-regulation at the group level can help us assess learners' performance, as mentioned earlier, appropriate measurement tools are not available.

Although it does not provide a comprehensive understanding of group-level self-regulation, examining group metacognitive skills is an effective way to gain insight into how learners regulate the group-level learning process. Group metacognition directly influences the three regulatory activities of planning, monitoring, and evaluating. The GMS is a valid instrument for measuring group metacognition.

However, the difference between teacher-directed and self-directed learning in online collaborative learning was also introduced above. As mentioned above, Japanese English teachers expect students to continue learning English through self-directed learning even after graduation and believe that collaborative learning is an effective way to learn. However, we do not have a sufficient understanding of the differences between teacher-directed and self-directed learning. Therefore, a validated Japanese measurement tool is urgently needed to enable us to understand group regulatory processes in self-directed learning, and a translated version of the GMS is likely to serve this purpose.

2.3. Previous Studies Related to Individual Differences in Self-Directed Learning

The trend in the research on individual differences in language learning has been to include consideration of context, such as specific learning environments and social relationships. At the same time, self-directed learning, which has been shown to contribute to learning outcomes, has lacked observation at the group level, although there is some understanding of which individual differences make a difference in self-directed learning performance at the individual level. In self-directed learning, self-regulation plays an important role. Self-regulation, in turn, has been found to be strongly related to individual differences at both the individual and group levels. Therefore, in order to fill the research gaps mentioned above, investigations related to differences in individual learner characteristics in self-directed learning at the group level are needed.

2.4. Previous Research Related to Corrective Feedback in Self-directed Learning

Research interest in corrective feedback has also recently begun to shift from the feedback itself to the individual giving and receiving it. Two recent related studies have shown that people who give corrective feedback and people who receive corrective feedback do not necessarily share the same view of corrective feedback. Previous research on tandem learning has found that learners tend to give little corrective feedback, and it is possible that they may have different views of corrective feedback among themselves. But the real reason still remains unclear. On the other hand, previous research on group-level self-regulation has emphasized the importance of the process of negotiating, deciding, monitoring, and evaluating goals, criteria, and task plans among group members

in order to maximize the benefits of collaborative activities. In other words, when learners engage in tandem learning, the above process, i.e., socially shared regulation, is necessary to ensure their learning effectiveness. Unfortunately, there are no relevant studies available at the moment.

3. Methodology

This chapter provides details of the methodology of this study. In total, six research questions were addressed in three sub-studies. In Study 1, research questions 1 and 2 address the validity and reliability of the Japanese version of a revised GMS special for self-directed learning as well as the effectiveness of the revised GMS by examining the differences between self-directed learning and teacher-directed learning. Research questions 3 and 4 relate to Study 2, which aims to determine whether certain characteristics of learners influence self-regulation at the group level. Research questions 5 and 6 relate to Study 3, an effort to understand how self-regulation occurs at the group level during self-directed learning. A mixed-methods approach was used in this study, specifically a quantitative study using a Group Metacognitive Scale (GMS) questionnaire for Study 1 and Study 2 and a qualitative study using an open-ended questionnaire about group metacognition in tandem learning for Study 3. Furthermore, the subjects of this study were Japanese adults or English experts who had used or were using the Tandem mobile application for tandem learning. A total of 60 volunteers participated in Study 1, 91 volunteers in Study 2, and 11 volunteers in Study 3. The instruments used in this study include the Group Metacognition Scale (GMS) and the open-ended questionnaire on group metacognition in tandem learning. The quantitative analyses for Studies 1 and 2 were conducted using the free software R and JASP, and the qualitative analyses for Study 3 were conducted using Microsoft Excel. In addition, the specific steps for analyzing the three studies are described in detail.

4. Adapted Japanese Version GMS for Self-Directed Learning and Its Effectiveness (Study 1)

Chapter 4 is the content of Study 1. It focuses on the study of the adaptation of the English GMS to the Japanese language and the confirmation of its effectiveness. Sixty volunteers participated in the study. They were Japanese native speakers with a minimum age of 18 years and had experience with informal eTandem language learning. All data collection was via an online questionnaire. The measurement tool was the revised GMS developed by Biasutti and Frate (2018). The scale was adapted to the eTandem context

and was translated into Japanese. EFA and one-sample t-test were the analysis methods used in this study.

The results indicated that the Japanese version of the GMS is reliable and valid. The final model has a four-factor structure with 18 items. The four factors are knowledge of cognition, planning, monitoring, and evaluation, which is consistent with the original model. The four factors explained 56.0% of variance. Furthermore, the result of Cronbach's α was 0.89, which means that the scale has high consistency. In addition, the results of the t-test showed that while the mean scores of the eTandem learners were significantly lower than the high-scoring teacher-directed learning group, there was no difference between the mean scores of the eTandem learners and the low-scoring teacher-directed learning group.

The results supported the idea that group-level self-regulation is appropriate for the Japanese setting. Future research is suggested to help continue testing the Japanese version of the GMS using a Japanese sample. Finally, research on whether there is a difference in GMS scores between learners engaged in self-directed learning and those who engaged in teacher-directed learning suggests that there is still room for improvement in the group regarding the metacognitive skills required for autonomous learning.

However, the Japanese version has only 18 items compared to the original version with a total of 20 items. Items 8 and 18 related to learning tools were deleted. The possible reason why their responses did not reflect the basic structure expected for items 8 and 18 is that all subjects in this study used the same learning tool, which made them feel no need to select a learning tool. Deleting items 8 and 18 was considered appropriate because the total variance explained by the four-factor model increased and the overall reliability was high after deleting items 8 and 18.

In addition, it was tested whether there was a difference in the mean scores of the learners on the group metacognitive process between the self-directed learning group and the teacher-directed learning group by using a one-sample t-test. The results showed that the mean scores of group metacognitive processes under self-directed learning were lower than those of the high-scoring teacher-directed learning group. However, it was not significantly different from that of the teacher-directed learning group with a low score. The difference between self-directed and teacher-directed learning is empirically demonstrated by these results. It means that there is room for improvement in the group metacognitive skills of the learners who are involved in self-directed learning. One way of improvement is that learners must be made more aware of the importance of

metacognition at the group level and be provided with appropriate metacognitive skills training applicable to self-directed learning.

On the other hand, the reason why eTandem learners scored lower on planning, monitoring and evaluating than the high-scoring teacher-directed learning groups may be that planning and evaluation are always done by teachers. This means that the learners did not have many opportunities to practice and receive adequate feedback from teachers in school. Since the three aspects of the metacognitive process interact, poor planning or evaluation is likely to result in poor monitoring performance.

5. The Factors Influencing Group-Level Self-Regulation in Self-Direct Learning. (Study 2)

Chapter 5 is the content of Study 2, which aims to determine whether individual characteristics affect the learners' GMS scores after confirming the validity and reliability of the revised GMS in the context of eTandem learning. The subjects of this study were 91 eTandem learners. All the participants were Japanese learners of English at the native level and over 18 years old. EFA, t-test and ANOVA were the analysis methods used in this study. There were two main findings in this study. The first finding was that the revised GMS for self-directed learning is valid and reliable. The final model after conducting EFA was a four-factor structure with 14 items, consistent with the original model. The final four-factor model explained 46.7% of the total variance. Also, the overall scale has a Cronbach-Alpha value of 0.8, which means it has a high internal consistency. The second finding was that although there are significant differences in GMS scores based on gender and learning time, there were no significant differences in GMS scores based on differences in age group, employment status, Japanese proficiency, learning frequency, motivation level, and motivation type.

As for the fact that six items were deleted, it may be due to the fact that the intention of the original GMS scale was to be developed focusing on teacher-directed learning, but self-directed learning and teacher-directed learning are different in nature. There may be some steps that are considered necessary in the learning process that are not included in self-directed learning because learners are not well aware of their importance, which indirectly led to the deletion of six items. In fact, the results of the data in this study also showed that the three highest rated items in the GMS items by the learners were from the monitoring factor, while the three lowest rated items were from the planning and evaluating factor. In other words, in terms of planning, monitoring, and evaluation, eTandem learners differ in their performance.

Furthermore, t-tests and ANOVA were used to confirm whether there were differences in GMS scores by gender, age group, target language level, learning time, learning frequency, motivation level, and motivation type. The results showed that there were no significant differences in GMS scores in any of the categories, except for differences based on gender and learning time. The results of the present study were compared with the findings of previous research conducted at the individual level, and it was found that differences in individual characteristics may have an impact on self-directed learning ability at both the individual and group levels, but they may also have an impact on only one of these levels.

In addition, differences in motivation, which has long been recognized as one of the most important factors in successful language learning, were not found to make a significant difference in GMS scores in the results obtained in this study. More specifically, a significant difference was found in the initial ANOVA test, but not in the post hoc test. To further confirm this, one of the methods could be to repeat the experiment.

6. The Process of Group-Level Self-Regulation in Self-Directed Learning (Study 3)

Chapter 6 is the content of Study 3, which investigated how corrective feedback is given and received in e-tandem learning to understand how e-tandem learners learn collaboratively with their learning partners. The population of this study was 11 eTandem learners. The participants included six Japanese learners who were native English speakers (including those who rated themselves as equivalent to native English speakers) and five English learners who were native Japanese speakers. The data collected was analyzed by a thematic analysis. The study found that as providers of corrective feedback, learners favored providing corrective feedback to their learning partners how they felt it should be provided. Whereas, as recipients of corrective feedback, they passively accepted the feedback provided by their learning partners without making their own requests. Nevertheless, the study found that almost none were dissatisfied with the corrective feedback. These results show that eTandem learners prefer co-regulation, and few would use socially shared regulation. For those eTandem learners who favor the use of co-regulation, there is a lack of prior agreement and consensus process with their learning partners, both as givers and as receivers. Their lack of prior acknowledgment, agreement, and consensus may be because the learners are unaware of their importance in collaborative activities or do not clearly understand their roles and responsibilities in tandem learning.

Regarding the first point, previous research has emphasized that successful collaborative learning requires group members to negotiate and reach consensus about learning at the group level. In addition, it has been pointed out that it is possible for each individual to receive different types of corrective feedback that are appropriate for him or her. Therefore, in order to better facilitate their learning, it is important for eTandem learners to be more aware of the importance of socially shared regulation.

Regarding the second point, we can see from the participants' responses that they did not pay enough attention to the corrective feedback and they did not realize the difference between eTandem learning and ordinary conversation. However, not fully recognizing their roles and responsibilities in tandem learning will hinder their progress in language learning.

7. Conclusions

Chapter 7 concludes the study by summarizing the findings and discussion sections of the three sub-studies after briefly introducing the study's background, purpose, and research questions. Finally, the significance, limitations, and future research directions of the study are summarized. The significance of the study includes confirming that the modified GMS can be applied to self-directed learning and that there is indeed a difference between self-directed learning and teacher-directed learning. This study fills a gap in relevant research and provides a practical measurement tool for assessing self-directed learning skills. In addition, the present study provides insights into the complex process of self-regulation at the group level. It gives a realistic indication of the struggles of learners who engage in self-directed learning. Limitations of this study include the generalizability of the scale, the limitations of the influencing factors, and the limitations of the sample. Future research could further extend the applicability of the modified GMS, better understand the individual characteristics of self-regulation at the group level, and attempt to deepen the understanding of the complex process of group-level self-regulation in self-directed learning using richer data and research methods.

7.1. Implication

There are two important implications to this study. First, it confirms that a modified GMS can be applied to self-directed learning, while also emphasizing the fundamental differences between teacher-directed and self-directed learning through empirical evidence. Theoretically, it contributes to empirical research, particularly quantitative research, on self-directed learning, which is still lacking in the area of learner autonomy. Practically, with a validated instrument for measuring group metacognitive

skills in self-directed learning, this study attempts to break the boundaries of learning and learning-related support that can only be limited to the classroom. It is expected to provide practical support for self-directed learners outside the classroom. Specifically, the modified GMS allows teachers to assess students' self-directed learning abilities through learners' scores on the dimensions of group metacognitive skills, thereby providing specific learning recommendations. In addition, it provides more in-depth real-world data on self-directed learners from their self-directed learning activities. Theoretically, these studies not only contribute to the understanding of complex processes of group-level self-regulation, but also draw on group-level self-regulation findings to provide insights from perspectives not previously available in self-directed learning. In Practice, self-directed learning occurs outside of the classroom, making it difficult for teachers to capture the precise realities of the situation and thus unable to modify instructional content in time to provide more appropriate and urgent instruction to students. Further, this study not only empirically demonstrates that some individual characteristics have an impact on group-level self-regulation, but also shows the current situation in which learners prefer to use co-regulation in self-directed collaborative activities and lack adequate communication with their group members. In the future, teachers can use these as inspiration when they design learning in classrooms for their students.

7.2. Limitations

The study has three major limitations. First, the scale is limited in terms of its generalizability. While this modified GMS has been validated as applicable to self-directed learning, the scale was modified in the context of eTandem learning, which limits its own generalizability. The second limitation is the limitations of the influencing factors. Although irrelevant factors were avoided as much as possible in the design of the study, it cannot be denied that all of them cannot be excluded completely. The majors of the three groups of self-directed and teacher-directed learners used as a comparison object in Study 2 were different, and it cannot be completely denied that these differences will not be significant. As a third point, the sample was limited. Due to the challenges associated with collecting data samples from self-directed learners outside of the classroom, the data samples in this study cannot be considered ideal. Study 3, for example, was designed to observe self-regulation at the group level of self-directed learning, and despite the fact that collecting opinions from two eTandem learners within the same pair would have been more aligned with this study's objectives, only one of the parties was able to be collected in the end.

7.3. Future Research

The following three directions could be explored in future research. In order to ensure that the revised GMS can be generalized to other forms of self-directed learning, different samples should be collected to retest its usability. In addition, further research was conducted to understand individual characteristics that influence self-regulation within groups. As an example, whether or not there is an interaction between the influences of the individual factors and, if so, how these influences jointly influence self-regulation at the group level in self-directed learning. Additionally, richer forms of data and research methods may be used to improve our understanding of the complex process of self-regulation at the group level in self-directed learning.

8. Reference

Biasutti, M., & Frate, S. (2018). Group metacognition in online collaborative learning: Validity and reliability of the Group Metacognition Scale (GMS). *Educational Technology Research and Development*, *66*, 1321–1338. https://doi.org/10.1007/s11423-018-9583-0