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The Relationship Between Independent Study Time, Self-Directedness, and Language Gain

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Abstract

This paper examines the links between independent study time inside and outside a self-access centre, self-directedness and language gain. 71 university students taking English classes at a private university in Japan completed surveys of their typical weekly self-access centre usage, typical weekly independent language study time and the Self-Directed Learning Readiness Scale (SDLRS) survey, and these data were compared to changes in pre- and post-study Test of English for International Communication (TOEIC) reading and listening scores. The analysis showed that there were few statistically significant correlations between most of the data. The results suggest that SDLRS score predicts independent language study time and that language students with high self-directedness are less likely to require the support of a self-access centre. The authors recommend further research and that future studies use different measures of language gain that are criterion-referenced and cover more language skills, and examine the types of learning activities carried out rather than just the amount of time spent.

Keywords: self-access, self-directedness, language gain, study time

A facility to support self-access English language learning called the Self-Access Learning Centre (SALC hereafter) was established in the authors' institution in 2008 as part of the Bunkyo English Communication Centre to offer "personalized educational experiences and the opportunity for them [learners] to develop their capacities as autonomous language learners" (Bunkyo English Communication Centre, 2019). To this end, the SALC offers a wide selection of materials, a language advising service, and promotional events for learners with various learning backgrounds and needs and at different levels of language proficiency and autonomy.

Just like other similar learning facilities all over the world, we strive to foster learners' development in both language ability and autonomy; however, to date no investigation into our students' existing levels of autonomy and its link with language gains has been conducted. In order to learn more about our learners' autonomy level, study habits, and language gain and the correlation among those factors, this study uses three data sets obtained from four groups of learners at the institution. It examines the correlation between 1) self-directedness and

language gain, 2) self-directedness and independent study time, and 3) independent study time and language gain.

Literature Review

Self-access centres and autonomy

The establishment of self-access centres (hereafter SAC) is said to be the most common institutional choice in attempting to realize autonomy (Benson & Voller, 1997; Gardner & Miller, 1999). Benson (2011) defines autonomy as “the capacity to take control of one’s own learning” (p. 58), and the benefits of establishing self-access in fostering autonomy have been reported in the literature. According to Sheerin (1997), there are two reasons for establishing SACs: individualization and independent learning. She states that “although the mere existence of self-access facilities does not ensure independent learning, well-organized self-access materials (of the right *sort*) can do much to facilitate and encourage self-directed learning” (p. 63). Describing how providing choices to learners helps both teachers and learners to take new roles and contributes to learners’ proactive learning, Sheerin argues that it will consequently help them to become more independent and better at learning. Littlewood (1997) recognizes three types of autonomy: “autonomy as a learner,” “autonomy as a person,” and “autonomy as a communicator” (p. 83) and argues that SACs provide a context for developing all three types of autonomy. In their well-known book on setting up self-access learning facilities, Gardner and Miller (1999) also state that self-access helps transform dependent learners into autonomous learners.

While a number of researchers and practitioners agree on the benefits of establishing SACs, it is also agreed that the mere presence of a SAC or mode of self-access learning does not guarantee the fostering of autonomy. According to Benson and Voller (1997), there is no sufficient evidence to claim that self-instruction can lead to the development of autonomy. Benson (2011) also states that “there is no necessary relationship between self-instruction and the development of autonomy” (p. 11) and that the establishment of self-access can even inhibit the fostering of autonomy in some situations. Having argued that a SAC doesn’t necessarily lead to independent learning, Sheerin (1997) proposes that the way the SAC is used determines whether it can facilitate such modes of learning. Littlewood (1997) also suggests that a SAC should have a clear framework for it to function as intended. Gardner and Miller (1999) note that the concept of self-access is not familiar to many learners, and their attitude towards self-access may vary depending on four factors: teachers, institution, peers, and society.

Research on autonomy

Although the importance of fostering learner autonomy is widely recognized in the field of language learning, Benson (2011) notes that there has been less research to show the effectiveness of practices in developing autonomy when compared to research that validates the concept of autonomy. He argues that a lot of research on autonomy is “based on reflection and reasoning” (p. 201) while fewer studies have been done based on data analysis. One of the major obstacles to researching autonomy, as Benson states, is the difficulty of measuring autonomy. He attributes this issue to, among other things, the fact that autonomy is complex, as it is constituted of many elements and takes different forms depending on the learner. Another reason he notes is the presence of uncontrollable variables when investigating how effective a teaching method or practice is. Difficulties in conducting research on autonomy makes it challenging to demonstrate how to foster autonomy and whether autonomy leads to greater language gain (Benson, 2011). However, Benson recognizes two reasons why it is important to conduct research on the relationship between autonomy and language development: awareness and accountability. He notes:

- Researchers are increasingly beginning to understand that there is an intimate relationship between autonomy and effective learning.
- Worldwide concern with accountability in education is making programmes that prioritise the quality of the learning process over measurable proficiency gains increasingly difficult to justify.

For both of these reasons, the argument for autonomy will be strengthened if researchers can show that their practices also lead to greater proficiency, however it may be measured (p. 210).

Having stated that empirical data demonstrating the relationship between autonomy and effective language learning is yet to be seen, Benson (2011) argues that data-driven research on everyday practice will contribute to a better understanding of how autonomous learning will lead to language gain.

Self-Directed Learning Readiness Scale (SDLRS)

Benson (2011) notes that Guglielmino’s Self-Directed Learning Readiness Scale (hereafter SDLRS) is the best-known scale that measures one’s autonomousness. The questionnaire was developed by Dr. Lucy M. Guglielmino in 1977 to assess “the complex of

attitudes, skills, and characteristics that comprise an individual's current level of readiness to manage his or her own learning" (Guglielmino & Associates, LLC). When conducting studies, the questionnaire is presented to participants as a 'Learning Preference Assessment' to avoid possible bias. Participants read 58 items and decide how true each statement is for their own learning on a five-point Likert scale, from 'Almost never true of me' to 'Almost always true of me'.

According to Benson (2011), the SDLRS is used 1) "to investigate relationships between readiness for self-directed learning and other variables" and 2) "as a diagnostic tool for measuring learners' perceptions of their readiness for self-directed learning" (p. 95). Noting that the scale is the most frequently used measurement for data-driven studies in the field of self-directed learning, Merriam, Caffarella, and Baumgartner (2007) report that the tool is used in various settings, such as workplaces and schools, and many of the studies found positive correlations between SDLRS scores and other factors. For instance, Shokar, Shokar, Romero, and Bulik (2002) studied 182 third-year medical students who enrolled in a problem-based learning course and found that SDLRS scores were correlated with the students' performance. Chou (2012) conducted the SDLRS survey among 48 engineering students studying at a Taiwanese university. He found a significant correlation between their SDLRS scores and test results after taking an online learning activity, suggesting that there was a positive relationship between the students' self-directedness and learning performance. Having conducted the SDRLS survey among 283 civil servants and compared their scores against a network literacy scale and a learning effectiveness scale, Lai (2011) found a positive correlation between their self-directedness and network literacy, concluding that SDLRS scores were the most predictive factor of the participants' learning outcomes.

The questionnaire has been translated into 22 languages, including Japanese, and the validity and reliability of the Japanese version of the questionnaire has been assessed by Matsuura et al. (2003). Having conducted the questionnaire among over 2,000 university and college students aged 18-25 years old and compared the results against earlier research, the researchers confirmed the validity and reliability of the Japanese version of the questionnaire. They also found that the average score of the Japanese students they studied was 30 points lower than students in the United States of America.

Although its validity as a measurement of a complex construct has been questioned by some researchers (See Benson, 2011, Chapter 5, for details), the fact that the validity of the questionnaire has been confirmed by a number of studies (Guglielmino & Associates, LLC) and its widespread usage in the literature made it the first choice to assess the self-

directedness of English learners at the authors' institution. As explained in the following section, the individual learners' SDLRS scores were collected to examine the correlation between the development of language proficiency, usage of the self-access learning centre, and studies outside the self-access learning centre.

Research Questions

This study attempts to contribute to the closing of the gap in the literature, identified by Benson (2011), regarding autonomy and learning outcomes. Although it is imprecise, we chose to use independent study time as a measure of autonomous learning activity; although it is likely to overlap with other constructs such as motivation (Benson, 2011) independent study does appear to require autonomy, and time spent is an easily-understood concept for participants to accurately record.

The specific research questions are:

1. What is the relationship between self-directedness and language gain?
2. What is the relationship between self-directedness and independent study time?
3. What is the relationship between independent study time and language gain?

Methods

Participants

The data used for this study was collected over two academic years from January 2017 to January 2019. Four groups of students (Groups A-D, listed in Table 1) majoring in global communication and taking at least four English classes per week (except in their fourth year) at a Japanese university were involved as participants. All the students received a formal orientation in the SALC in their first year and had free access to the SALC.

Table 1

Timing of Data Collection

Group	TOEIC 1	TOEIC 2	SDLRS and independent study time data	Academic year of students	Number of students (n=87)
A	January 2017	January 2018	June 2017	Fourth year	2
B	January 2017	January 2018	June 2017	Second year	17
C	April 2017	January 2018	June 2017	First year	32
D	April 2018	January 2019	June 2018	First year	36

Four kinds of data were collected from the students: their weekly SALC usage, weekly independent study time outside the SALC, SDLRS scores, and TOEIC results.

Weekly SALC usage and independent English study time

This data was collected through the administration of a questionnaire developed by one of the authors for this study, and asked among other things how many times students came to the SALC, how long they spent in the SALC in total in the week of the study, how long they spent in the SALC in a typical week, how long they studied English outside the SALC in the week, and how long they studied English outside the SALC in a typical week (see appendix). As the SALC does not have a system for monitoring students' usage of the SALC, such as an entry gate or a learning management system, this was considered to be the most practical method available to collect this data.

SDLRS scores

The SDLRS questionnaire was administered to all students in the year they participated in the study. The students answered the questions in Japanese, and the responses were sent to the instrument providers for scoring.

TOEIC results

Students in the study were required to take the TOEIC at regular intervals. TOEIC results from the start of the academic year in which the study was conducted were compared to those at the end to measure language gain in reading and listening comprehension. The first TOEIC was taken in April for most students, and in the following January for all students. For

groups A and B, TOEIC data were only available from the end of the previous academic year. As the average gain for these students (49 points) was similar to that of other participants in the study (44 points) and they did not receive any additional class time in the February-March spring vacation period it was decided to include the data in the analysis.

These three sets of data were used to run a regression analysis to assess the strength and significance of the correlation between the variables.

Results

12 students with incomplete data were removed. Scatterplots of the conditions to be analysed were created and four outliers removed. Descriptive statistics for the remaining participants are given in Table 2.

Table 2

Descriptive Statistics for Data Analysed (n=71)

Variable	Mean	Median	Minimum	Maximum	Standard deviation
1. Typical weekly time spent studying in SALC (minutes)	165	155	0	485	129
2. Typical weekly time spent studying outside SALC (minutes)	128	90	0	630	127
3. Typical total independent study time (minutes)	292	275	5	910	190
4. SDLRS	192	193	124	247	23
4. TOEIC gain	45	45	-60	155	52

Participants were first separated into groups based on whether their SDLRS score was below average (58-201), average (202-226) or above average (227-290) (Guglielmino & Associates, LLC). The results are shown in Figure 1 and Table 3.

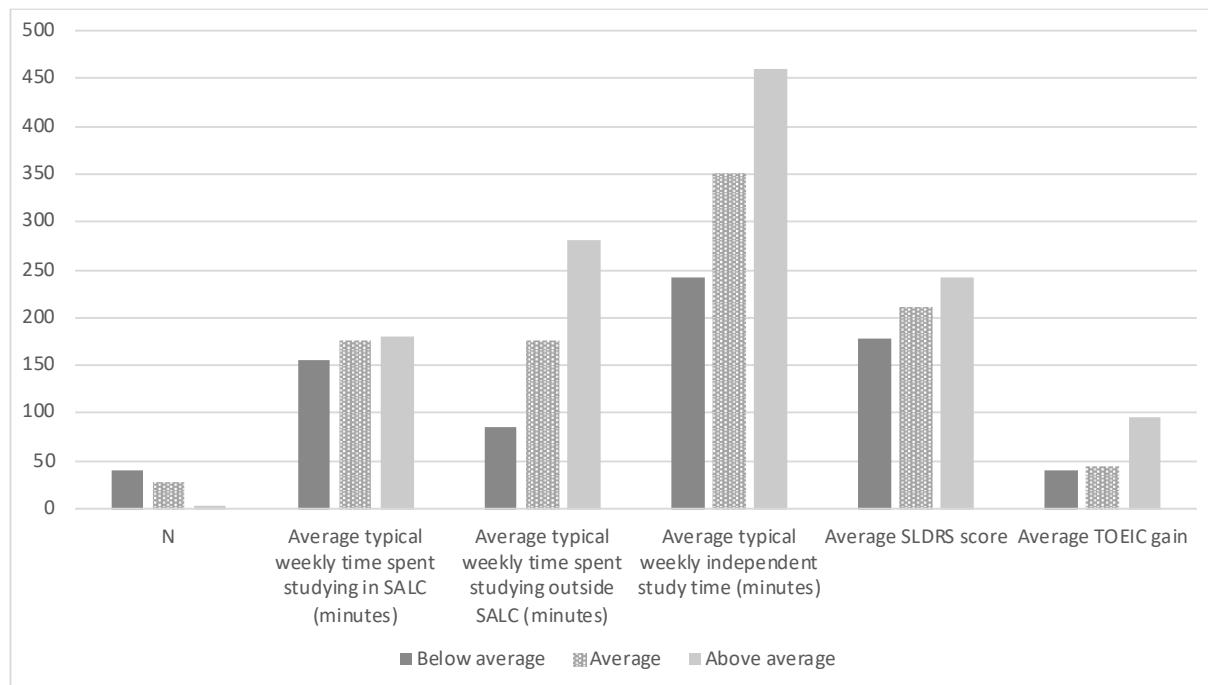


Figure 1. Variables divided by SDLRS group

Table 3

Averages for Variable by SDLRS Group

SDLRS group	N	Average typical weekly time spent studying in SALC (minutes)	Average typical weekly time spent studying outside SALC (minutes)	Average typical weekly independent study time (minutes)	Average SLDERS score	Average TOEIC gain
Below average	41	156	86	241	177	41
Average	27	176	175	351	210	45
Above average	3	180	280	460	241	97

There are differences to be observed between the groups in all categories, except average TOEIC gain, in which there was very little difference between the below average and average groups, and typical weekly SALC usage, in which there was very little difference between the average and above average groups. However, given the large discrepancy between the number of participants in each group it was decided to run a regression analysis on all participants rather than compare groups. The results are given in Table 4.

Table 4

Conditions Analysed and Regression Analysis Results

Condition	Independent variable	Dependent variable	R-squared	P-value
Research question 1				
A	4. SDLRS score	5. TOEIC gain	0.05	0.07
Research question 2				
B	4. SDLRS score	1. Typical SALC time	0.03	0.15
C	4. SDLRS score	2. Typical outside SALC	0.14	<0.01
D	4. SDLRS score	3. Total typical study time	0.13	<0.01
Research question 3				
E	1. Typical SALC time	5. TOEIC gain	0.02	0.21
F	2. Typical outside SALC	5. TOEIC gain	0.04	0.11
G	3. Total typical study time	5. TOEIC gain	0.05	0.05

R-squared is “a statistical measure of how close the data are to the fitted regression line” (Minitab Blog Editor, 2013) that is always between 0 and 1. The higher the value, the more of the variation in the data is explained by the model. For example, in condition C, 14% of the variation in time spent studying outside the SALC is explained by SDLRS score. Conditions C, D and G are the only conditions with a statistically significant p-value; p-values of 0.05 or less are commonly regarded as statistically significant (Minitab Blog Editor, 2015).

The answers to the research questions are:

1. There is no statistically-significant direct positive relationship between self-directedness and language gain.
2. There is a small, statistically-significant positive relationship overall between self-directedness and independent study time, but not for SALC usage time.
3. There is a very small, statistically-significant positive relationship between independent study time and language gain.

Discussion

The results suggest that there is some positive correlation among the measured items, but the effect size, even when statistically significant, is small. There is no direct correlation between self-directedness and language gain, but self-directedness does correlate with total study time, which in turn correlates with language gain, albeit rather weakly. The results overall reinforce previous findings that autonomy is a complex construct that is not easily measured or related to behaviours and outcomes.

While SDLRS scores, which predict learners' self-directedness, did not correlate with SALC usage, they were somewhat related to their outside-SALC study time. Although one may assume that more autonomous students utilize self-access services more often, it could be the case that learners with a high level of autonomy can carry out their independent studies outside the SALC without a lot of external support. SDLRS scores predict learners' readiness to engage in self-directed studies, but not the extent to which they do so. We believe there is value in knowing students' readiness, but stakeholders in self-access centres may find it more beneficial to prioritise measuring users' activities and linking them to the learning outcomes they are aiming to achieve. A more detailed self-reporting questionnaire or gathering data from more than one week could provide useful data.

A possible reason as to why there was little correlation between TOEIC results, and the other items was that only one pre- and post-language proficiency test was not sufficient. Although the test is commonly used in Japan to determine language proficiency across a wide range of language levels, it could be argued that it was unable to accurately measure students' language gain in this study's rather short timeframe of less than one academic year. It has also been argued that the TOEIC is not an effective tool for measuring individual learners' language gain (Childs, 1995), but unfortunately this was the only data available in this study. It is worth noting that despite these issues Figure 1 hints that learners with above average SDLRS scores do make greater learning gains, but with only three students in the group it is not possible to state this with any confidence.

Another reason as to why SALC usage time was not correlated with TOEIC score gain could be that the current study did not account for the kinds of activities each participant had done in the time spent in the SALC; that is, whether the participants did activities that could directly or largely contribute to TOEIC score gain was not considered in the study. For instance, there could be cases where students who spent a lot of time in the SALC talking to teachers improved their communication skills but this was not reflected in their TOEIC results. The fact that total study time was slightly more predictive of TOEIC gain seems to

reinforce this. Lastly, the SDLRS scores of the participants in this study could have been lower than students in other countries, as Matsuura et al. (2003) observed in their study, and this might have had some influence on the accurate correlation of the measured factors.

Conclusions

While the results do not suggest that SALC usage is associated with high levels of self-directedness and language gain, which is one of the ultimate objectives of establishing self-access, there are a few limitations in this study that qualify the results. Firstly, the study was conducted for a limited period of time and did not follow participants' language gain long-term. Secondly, the participants' language gain was measured by a single language test. Possible future research may entail a longitudinal study that traces students' language gain over a few years and either a different language proficiency test or multiple tests. Thirdly, this study did not account for the types of activities the participants carried out independently. More qualitative data analysis may be necessary to investigate this factor as part of a mixed-methods approach. A possible change to future research may be to focus on the study methods or activities participants do in and out of the SALC and examine the correlations with their language gain. If feasible, this data could be verified externally rather than just self-reported, such as activities completed on a learning management system. This would also allow for the use of more advanced approaches, such as learning analytics, to investigate the data. Lastly, whether or not SALC usage leads to greater autonomous capacity was not examined in this study. It is worth considering that SALC usage and language gain may not be directly linked over one academic year; SALC usage may first increase self-directedness, which in turn both increases language proficiency and decreases SALC usage. Following up on participants' SDLRS scores and language gains over a few years may shed light on the accountability and validity of establishing self-access.

Notes on the Contributors

Yukari Rutson-Griffiths is a learning advisor at the Bunkyo English Communication Centre at Hiroshima Bunkyo University and is the coordinator of the Self-Access Learning Centre. Her research interests include advising in language learning, self-access learning, and learner autonomy.

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Appendix

English translation of the study habit and SALC usage instrument

Questionnaire about SALC Usage

Name _____

Student Number _____

Date _____

*The results of this questionnaire will be used to make the SALC a better learning environment. Your answers will not influence your class grades, so please answer the questions candidly.

Part A

Questions regarding how often you come to the SALC, time spent in the SALC, activities in the SALC, study outside the SALC

1) For Questions ၂ to ၅, please fill in what you did in the last week on the next page.

၂) How many times did you come to the SALC last week? Please fill in day by day.

၃) How long did you spend in the SALC each time?

၄) What did you do each time? (Please choose all that apply.)

A. SALC Activities

B. Talk to teachers in the lounge

C. Have an advising session with a learning advisor

D. Study for tests

E. Homework or assignments for classes

F. Self-study with friends (apart from homework or assignments)

G. Self-study alone (apart from homework or assignments)

H. Work as a SALCer (student staff)

I. Other

*Please specify in the parenthesis.

၅) Study outside the SALC

*Please write letters of the alphabet ↵

Day	Times ↗	Length of time spent in the SALC ↫		Activities ↪
Ex) Monday	3.times	1st time	5 minutes	<u>A</u> (I talked to a teacher as a part of my SALC Activity.)
		2nd time	60 minutes	<u>E,D</u> (I studied for my class and TOEIC.)
		3rd time	5 minutes	<u>I</u> (I came to return and borrow books.)
English study outside the SALC ✎			45 minutes	Study content / place (I studied vocabulary and read an English book on the train.)
Monday	—times	1st time	—minutes	— ()
		2nd time	—minutes	— ()
		3rd time	—minutes	— ()
English study outside the SALC ✎			—minutes	Study content / place ()
Tuesday	—times	1st time	—minutes	— ()
		2nd time	—minutes	— ()
		3rd time	—minutes	— ()
English study outside the SALC ✎			—minutes	Study content / place ()
Wednesday	—times	1st time	—minutes	— ()
		2nd time	—minutes	— ()
		3rd time	—minutes	— ()
English study outside the SALC ✎			—minutes	Study content / place ()
Thursday	—times	1st time	—minutes	— ()
		2nd time	—minutes	— ()
		3rd time	—minutes	— ()
English study outside the SALC ✎			—minutes	Study content / place ()
Friday	—times	1st time	—minutes	— ()
		2nd time	—minutes	— ()
		3rd time	—minutes	— ()
English study outside the SALC ✎			—minutes	Study content / place ()
Total time spent in the SALC _____ minutes				Total study time outside the SALC _____ minutes

2) Please look at the table on the previous page again. How does your SALC usage and studies outside the SALC in a typical week compare to the last week? Please circle the most appropriate choice.

- Compared to the last week, the time I spend in the SALC in my typical week is
 - a) (____ minutes) longer
 - b) (____ minutes) shorter
 - c) About the same

- Compared to the last week, the time I spend on English studies outside the SALC in my typical week is
 - a) (____ minutes) longer
 - b) (____ minutes) shorter
 - c) About the same