

Student Creativity and Language Performance

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Reference Data

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In this paper I discuss the basis for investigating the relationship between student creativity and second language acquisition. I then present results from a study looking at the relationship between assessed student creative behaviour (using an adapted form of the Creative Behaviour Inventory) and creative self-efficacy, student performance in initial placement tests, and two speaking tasks from near the beginning and near the end of a semester. The subjects were 58 first-year students in a Japanese university, divided into a higher group and a lower group by initial assessment test. Results suggest that students who are more creative may respond relatively better to more open-ended task-based methods of teaching. They also give some support to the idea that more creative students may do relatively worse in either tests or test-based pedagogies.

本稿では、学習者のクリエイティビティと第二言語習得の関連性について行った基本的な調査の結果について述べる。調査内容は、Creative Behaviour Inventoryを本調査に合うよう修正したもので、日本の大学で学ぶ1年生58名を対象に、受講前の英語カテストを基準として上位層、下位層にわけて実施した。該当者の創作活動の評価と自己効力感との関連性、学期開始前のプレースメント結果、学期開始時ならびに終了時のスピーキング課題2件も調査対象とした。調査結果からは、創造性の高い学習者ほど、自由回答式でタスクベースの教授法に対して反応が比較的によいことが明らかになった。また、そのような学習者ほど、その創造性とは対照的に試験での得点が得られず、試験中心の教授法には向いていないことも把握できた。

IN THIS paper I first discuss the relevance of “creativity” to second language acquisition, and definitional problems that arise in the language acquisition literature. I then turn to the psychological literature and consider how the field of creativity studies can provide us not only with a clearer central definition, but also with some tools for assessing individual creative aptitude and creative behaviour. After considering the few studies that have applied some of these tools to language acquisition, I describe a study examining the relationship between self-assessed creative aptitude, self-reported creative behaviour, and student performance in an assessment test and speaking tasks.

Creativity: A Paradoxical Neglect

Is there a relationship between creativity and language learning? Swann and Maybin (2007) stated that in “one sense, creativity may be identified broadly as a property of *all* language use in that language users do not simply reproduce but recreate, refashion, and recontextualise”



(p. 491; emphasis added). Clarke (2005) reported the common belief among educators that “creativity is an integral part of Modern Foreign Languages” (p. 1). Creative use of language in “language play” has been shown as key to relationship building both in L1 (Carter, 2004) and with advanced L2 speakers (Belz & Reinhardt, 2004). Anecdotal evidence (Al Jarf, 2007; Holmes, 2001; Smith, 2011) has suggested that creative writing activities improve quantity and quality of output as well as student motivation.

Furthermore, Albert and Kormos (2004) argued that changes in language pedagogy towards communicative methods and task-based learning increase the importance of student creative behaviour. Traits such as imagination, flexibility, and risk taking become increasingly important. In general, education systems are now recognising the importance of creative thinking for learning (Dörnyei, 2005).

It is therefore disappointing that in terms of empirical research, the relationship between student creativity and L2 acquisition has been “almost entirely neglected” (Albert, 2012, p. 145). I consider a couple of the most notable pieces of research below. One reason for this neglect may be the prejudice that creativity cannot or should not be measured or assessed, and that educators view it as a “fuzzy, soft construct” (Plucker, Beghetto, & Dow, 2004, p. 86), not fit for rigorous empirical research.

A related issue is the looseness with which people in education talk about creativity. For example, Clarke’s 2005 survey of higher education teachers showed a bewildering diversity of ideas regarding creativity (“the dynamic in the process of life that enables us to find ever new ways of living together in and with the world” is one instance). Creativity more generally is often fused with other general concepts such as self-actualisation and liberation from constraints, or even madness (Cropley, 2001; Plucker et al., 2004). This does not seem a strong base upon which to conduct quantitative empirical research.

I argue that central to these problems of research is a lack of engagement on the part of language educators with the large and growing body of creativity research. Researchers largely based in psychology, with substantial input from business studies, have been developing analyses and assessments of creativity and creative behaviour for several decades. Although certain popularising writers, such as Boden (1993), have received some attention, the general approaches, as well as some of the key findings, have been surprisingly underutilised by EFL and ESL studies, even as we stress the importance of introducing creativity into the classroom.

Defining Creativity

Although historically there has been wrangling over definitions, Mumford (2003) wrote that “over the course of the last decade we seem to have reached a general agreement that creativity involves the production of novel, useful products” (p. 110). This broad definition helps to organise different approaches. The word *novel* can be unpacked to create a shifting contextual scale from historical creativity (great inventors, artists, etc., as found in Csikszentmihalyi, 2007) through professional creativity, such as architects designing new but not ground-breaking buildings, to personal creativity—new to the individual creator, regardless of broader originality (Kaufman & Beghetto, 2009). In language education, student creativity is not simply the production of language and ideas that impress the teacher or others, but also the production of ideas and expressions that are new for the students themselves—the creativity that Swann and Maybin (2007) described.

Useful does not necessarily imply practical utility, but rather *value*: A catchy song, a groundbreaking piece of historical research, or a successful (tasty) improvised recipe from the contents of a near-empty fridge are all examples of creativity. As such, creativity is not simply equivalent to *divergent thinking* (the

generation of many diverse ideas), despite a widely held prejudice that it is (Dietrich, 2007). Idea evaluation is also key to creativity (Runco, 2008), as are items such as sensitivity to problems. In short, *convergent* thinking (a search for the best idea) is also important (Cropley, 2006). As language is in no small part about using conventions rather than ignoring them, we may even find that divergent or unconventional thinking styles have a negative impact on language acquisition if they are not accompanied by an appropriate evaluative ability.

In addition to the definition given by Mumford above, a second useful framework divides creativity into aspects, typically the “four Ps” of product, place, process, and person. *Product* refers to how things become labelled creative—typically the assessment by peers or judges in any particular field. *Place* refers to environments that encourage or discourage creativity, including the impact of rewards, motivation, management style, and goal setting. *Process* refers to how people produce creative work, including ideational techniques, incubation, recursiveness, and so on. *Person* refers to a person’s own creative tendencies, abilities, and background (whether some people are more creative than others), and is the focus of the present study.

Assessment of Creative Aptitude

Just as creativity in general can be broken down into different aspects, *personal creativity* is also complex. It can refer to innate creative ability measured by a test, much as intelligence is assessed through IQ tests, to someone’s tendency to attempt creative solutions or employ creative strategies, to a person’s tendency to participate in creative activities (e.g., their choice of hobbies), or to someone’s demonstrated success in real-world creative endeavours (involving assessment by judges or peers of the originality and value of their achievements). While no doubt interrelated, these different facets of creativity are not the same. For example, the assessment of personal creative ability

or creative thinking preferences will never be a perfect predictor of future creative behaviour: What leads people to produce or participate in creative work depends on a variety of factors (the four Ps mentioned above). Researchers therefore need to be clear which facets they are measuring and take care not to conflate them. The study described below, for example, looks at self-assessed generalised creative ability (creative self-efficacy) and reported creative behaviour.

One also needs to be aware of two issues that research has shown can impact on someone’s ability to be creative. The first issue is domain competence: Although the extent of the effect is disputed, it is clear that (usually formal) training in a domain (e.g., physics, music, art) significantly aids creative work (Simonton, 1997). People who are highly creative in one area are often much less so in others simply because their expertise is much less. As such, we need to be wary of the English level of students when comparing their relative creativity assessments. Less creative people with better English may outperform more creative people with worse English, even in creative tasks.

The second issue is the relationship between creativity and general intelligence. Although independent constructs, there is some evidence that creativity and intelligence assessments correlate fairly closely until above average levels (Runco, 2008). In assessing the relationship between creativity and language learning, we need to be aware that the better language competence of “more creative” students may be a reflection of their general intelligence rather than their creativity.

Given that there are different facets to personal creativity, there are several different ways that it is assessed. A common approach is the use of innate ability tests that focus largely on divergent thinking, such as the Torrance Tests of Creative Thinking (Kaufman, Plucker, & Baer, 2008, pp. 25-31), in which, for example, subjects are asked to develop pictures from abstract shapes. These tests, judged by trained assessors, consider the

fluency (volume of ideas), elaboration (development of ideas), flexibility (ability to change frames of reference), and originality (how unlike other test-takers). These tests have good inter-rater reliability and allow us to examine different aspects of a person's thinking style. However, they rely on models of which particular thinking styles lead to successful creativity rather than direct measures of real-world creative ability or behaviour.

Another method is assessment of subjects by others, typically people who know the subject well (such as acquaintances or teachers). The advantage of this approach is that it is a global measure, rather than one based on theorised components of creative behaviour such as the Torrance Tests. However, such an approach has been found to have serious bias problems (Kaufman et al., 2008). A third general approach is to use self-assessment through standardised questionnaires. People may be asked to reveal their thinking styles or rate their creative achievements in life. The current study employs two such approaches: the Creative Behaviour Inventory (CBI) and creative self-efficacy.

The CBI lists a number of activities and asks the respondents how often they have done them. Activities include performing music in public, designing clothes, inventing recipes, and so on. The version used here was adapted and shortened from Hocevar (1980) to fit with activities that I felt applied to 1st-year university students in Japan. The relationship of the CBI to assessed creative ability is not strong (Kaufman et al., 2008). However, it is a widely used measure that allows us to consider easily observable creative behaviour in our students, of both more open-ended divergent (painting, writing poetry, etc.) and more goal-oriented convergent (inventing recipes, writing computer programs) types, as well as performance activities such as dancing and acting. As such it allows us to examine the relationship between student performance and the popular conception of creative individuals.

The creative self-efficacy questionnaire asks respondents directly how creative they are and is based directly on the form used by Beghetto (2006). It is comprised of three statements with which respondents are asked to rate their level of agreement: "I have a lot of new ideas," "I have a lot of good ideas," and "I have a good imagination." The scores for each are added up to give an overall creative self-efficacy score. Despite its simplicity, self-efficacy has been related to creative ability and creative behaviour (Beghetto, 2006). Using this test in conjunction with the CBI allows us to assess how well they fit together: One would expect there to be a significant correlation between the two surveys (people who engage in creative activities are not likely to be hopeless at them), although the strength of that relationship, given the caution of Kaufman et al. (2008), may or may not be strong.

It should therefore be made clear that in this study there are two different operationalisations of creativity. One measures the *behaviour* of students: how much they participate in creative activities where, one presumes, they are called upon to employ creative thinking strategies. This is one sense in which we commonly talk of a creative person. The other operationalisation measures self-assessed creative *ability*. Here participants are not asked how often they engage in creative acts, but how good they are when they do.

Previous Research Into Creative Aptitude and Language Learning

As noted above, there have been very few studies that directly examine the creative tendencies of students and their foreign language proficiency. The most notable ones come from Hungary, of which I discuss two here. In the first, Ottó (1998) looked at 34 secondary students in two different classes (aged 14-15 and 15-16) taught by the same teacher using communicative meth-

ods in a Hungarian secondary school. He used an adapted form of the Torrance Tests of Creative Thinking to assess originality, sensitivity to problems, ideational fluency, and associational fluency, and compared these individually and collectively to the grades that students achieved. He found a reasonably strong and significant correlation between grades and all creativity measures, particularly sensitivity to problems and ideational fluency. In his conclusion he suggested that in language education there was a bias towards creative students that needed to be addressed for the sake of fairness.

The second study, by Albert and Kormos (2004), looked at 67 secondary school students with intermediate-level English in two different schools, with full data for 35 of them. The authors used a standardised creativity test widely administered in Hungary and similar to the Torrance Tests and compared it to the students' performances in narrative task results. They found few correlations between creativity scores and student performance on a variety of measures, such as lexical diversity, word count, and accuracy. Assessed originality significantly correlated with narrative complexity with a coefficient of 0.34 and, of more interest to the current study, measured creative fluency significantly correlated with the number of words produced in a task with a coefficient of 0.33. However, assessed originality had a significant *negative* correlation with word count of more or less the same strength (-0.34). They concluded that creativity is a multi-faceted trait with ambiguous impacts on student language production.

What the current study can add to these studies is fourfold. First of all, it looked at students fresh from high school who generally have come from a much less communicative teaching environment. Japanese English education in high schools is highly test-oriented, with an emphasis on rote learning and a certain degree of grammar-translation. Secondly, it used different measures of creativity—creative self-efficacy and the CBI.

Thirdly, it looked at the impact of communicative teaching over the course of a semester by measuring spoken output at the beginning and end. That is, it was longitudinal. Fourthly, it considered two groups of students differentiated by their test-assessed English ability. As creativity may be closely correlated with IQ until higher levels of IQ, the influence of general intellectual ability may be mitigated somewhat. In addition, competence in English will mediate the effects of creativity. On the other hand, the current study was more limited in scope, considering only two kinds of measure of student ability: placement and word length of speech (fluency).

Research Questions

1. What is the relationship between students' placement tests and their creativity scores?

Dörnyei (2005) noted findings that test-like conditions inhibit creativity. On the other hand, students' overall English ability, which may be aided by a more creative approach, might counter this, unless test-based learning has disadvantaged creative students or nullified the advantages creative behaviour might otherwise bring to language learning. A secondary question is whether students in the higher group display greater creativity as a group because of the relationship with intelligence.

2. What is the relationship between students' creativity scores and their L2 fluency?

As a longitudinal study, there are two different effects we are looking for here. The first is the relationship between creativity and fluency after only a short period of communicative teaching. We might expect a positive relationship given that the task is open-ended, although one must also consider the possible legacy of a less communicative learning experience in secondary education. The second effect is the impact of a communicative

class on improved student fluency. If the proposition that communicative teaching advantages creative students is correct, the difference should emerge over time.

The Study

The participants consisted of two groups of 1st-year university students majoring in international relations and international culture. These groups were streamed using a standardised test into the top and second-top groups in a four-group course (to be called upper group and lower group). They received three 90-minute English lessons a week, one of which was a listening and speaking class, the others being grammar and reading. The general placement test consisted of multiple-choice questions looking at vocabulary, grammar, and reading. These standardised scores provide one of the data points for this study. There were 24 students completing the questionnaires in the upper group, and 34 in the lower group.

In their speaking course, the students were taught the same course by the same teacher (the author) using the textbook *World Link Book 2* (Stempelski, 2006). Each unit consists of vocabulary study, video comprehension exercises, conversation practice, focus on form, and a task of a pre-practised, open-ended speech, similar to short speeches students had watched on the course DVD, performed with no notes. In Albert and Kormos' 2004 study, students had 5 minutes to prepare the speeches and they expressed concern that even a short preparation time might limit the importance of creativity, but I think this confuses creativity in general with spontaneity in particular.

In the first unit students were asked to talk about a favourite memory or keepsake, in the third, a mystery or ghost story from their hometown or, alternatively, the country in general. As the results show, the third speaking task generally produced shorter speeches. However, it is the relative length of each speech

among students that is of interest.

I recorded and transcribed the speeches myself. Word counts for each speech were done using Microsoft Word, as a measure of fluency, following guidelines from Albert and Kormos (2004). In addition, a third measure was created by subtracting the first word count from the third to produce a measure of relative change. This number could be positive or negative, depending on whether the student spoke more in the third speech, and it allowed comparisons between students. Due to absences for either or both of the recordings, for the word count analysis the upper group sample was 17 students, and the lower group sample was 25 students.

At the beginning of the following semester, the students were asked to fill out two surveys: the creative self-efficacy questionnaire (three questions) and the adapted CBI (18 questions). Both surveys were translated into Japanese by a native Japanese speaker highly proficient in English, and then checked for naturalness and comprehensibility by a second native Japanese speaker who had not seen the English versions, with a couple of negotiated adjustments in phrasing (Japanese and English versions are in Appendices A and B respectively). For the CBI, as well as using a global score, certain behaviours were put into three groups: *divergent* ones that clearly required more open-ended creativity (such as painting or writing a poem), *convergent* ones that required more convergent thinking (a specific result had to be achieved, such as writing a computer program to do something or designing a good recipe), and ones that were *performance-related* (playing music in public, acting, etc.). Details are in Appendix C.

Results and Discussion

Correlations presented are bivariate Pearson correlations with two-tailed significance. Coefficients marked with * indicate a $p < 0.05$, ** indicate $p < 0.01$. Calculations were done using PSPP

software. Following Urdan's (2010, p. 80) view of social science data, I shall treat significant $-.20$ and $.20$ as representing a weak relationship, correlations between $.20$ and $.50$ (positive or negative) as representing a moderate relationship, and above $.50$ (positive or negative) as representing a strong relationship.

Creativity Measures in the Two Groups

There was no significant difference between the two sets of creativity scores (self-efficacy and reported behaviour) between the groups (Table 1), although the upper group displayed marginally higher scores on all measures except performance behaviour and how many good ideas they reported having. This result is mildly surprising, given the probable relationship between creativity and intelligence. It offers weak support to the idea that creative tendencies act as a drag on test-based language learning. For both groups, the self-efficacy total score correlated significantly ($p < 0.01$) with the total CBI score, with correlation coefficients just under 0.5 (result not shown), indicating a moderate to strong relationship. Unlike the evenly balanced self-efficacy scores, the CBI appears to be skewed towards more female tasks in the divergent category of items (Table 2). However, the word counts and differences between them showed no relationship to gender, so this may not adversely affect the overall results. However, future CBI item lists need to be altered to reduce this imbalance.

Table 1. Measures of Creativity by Group

Variable	Mean	SD
Self-efficacy: New ideas		
Upper group:	2.96	1.27
Lower group:	2.74	1.05
Self-efficacy: Good ideas		
Upper group:	2.71	1.23
Lower group:	2.74	0.96
Self-efficacy: Imagination		
Upper group:	3.50	1.25
Lower group:	3.24	1.16
Self-Efficacy: Total		
Upper group:	9.17	3.50
Lower group:	8.71	2.62
Divergent		
Upper group:	14.08	5.05
Lower group:	13.50	4.60
Convergent		
Upper group:	6.71	2.37
Lower group:	6.41	2.24
Performance		
Upper group:	8.75	2.72
Lower group:	8.97	3.05
CBI total		
Upper group:	39.29	11.58
Lower group:	38.21	10.99

Note. Upper group $n = 24$; Lower group $n = 34$

Table 2. Average Creativity Scores by Sex

Measure	Sex	Mean	SD
New ideas	Female	2.79	1.27
	Male	2.88	.97
Good ideas	Female	2.70	1.16
	Male	2.76	.97
Imagination	Female	3.36	1.25
	Male	3.32	1.14
Self-efficacy total	Female	8.85	3.21
	Male	8.96	2.75
Divergent	Female	15.45	4.96
	Male	11.48	3.40
Convergent	Female	6.64	2.63
	Male	6.40	1.76
Performance	Female	9.45	2.54
	Male	8.12	3.21
CBI total	Female	41.55	12.18
	Male	34.84	8.41

Note. Female $n = 33$, Male $n = 25$

Placement Tests and Creativity Measures

The placement tests overall showed no correlation with creativity (Table 3). However, the lower level group's placement scores showed a significant and strong negative correlation with the CBI ($p < .05$), particularly in relation to more divergent and to a slightly lesser extent more convergent creative behaviours. This suggests there may be different effects of creativity between students of higher and lower ability, and that for students not at the top end of the ability range, certain creative styles may hinder either test taking or language learning in a more test-based pedagogy.

Creativity Measures and Word Counts

For the upper group, no significant relationship overall was found for either the first or third speech word counts (Table 4). However, within this, higher self-efficacy ratings correlated significantly and with a moderate to strong relationship with a higher score on the difference between the word counts. For the lower group, the third speech word count showed a moderate significant relationship with self-efficacy, particularly with people who considered themselves as having good ideas. There was also a moderate positive correlation between the CBI, particularly with divergent behaviours, and the difference in

Table 3. Correlations Between Placement Test and Creativity Scores by Group

	New ideas	Good ideas	Imagination	SE Total	Divergent	Convergent	Performance	CBI
Placement	.20	.14	-.01	.13	-.17	-.04	-.02	-.14
Upper group	.35	.38	.01	.26	.05	.27	.27	.16
Lower group	-.05	-.22	-.09	-.14	-.54**	-.51**	-.33	-.59**

Note. $N = 58$; Upper group $n = 24$; Lower group $n = 34$

** $p < 0.01$

word counts. This suggests that for both levels, more creatively inclined students may respond better relative to others to more communicative teaching and open-ended tasks. However, we should note the two different operationalisations of personal creativity here. For the upper group, students who rated themselves as creative showed significant improvement, while for the lower group, this was true for students who reported greater creative behaviour. A unifying interpretation of these results could be that students who rate themselves better at employing creative thinking strategies (upper group) and students more accustomed to employing creative thinking strategies (lower group) benefited more from the mode of instruction.

Issues in the Study

There are some words of caution in considering these results. Firstly, the second task may in itself have required more creativity than the first, meaning that the relatively better scores of

those more creative students may be a function of the task and not general ability. Secondly, it is possible that my teaching style may itself be biased towards more creative personalities. Thirdly, while word counts are a measure of the quantity of language output, there are more sophisticated measures of fluency that could be used, such as *t*-counts. Fourthly, fluency is, in any case, only one measure of language ability, and it is more clearly related to measures of creativity than are diversity of vocabulary, accuracy, or complexity of structure. Lastly, the timing of the self-efficacy questionnaire may have influenced students' self-assessment, as they had experienced success (or failure) with one semester's university teaching.

Conclusion

This was an exploratory study using simple-to-administer creativity measures and only two measures of student performance. However, significant moderate relationships were found be-

Table 4. Correlations Between Word Counts and Creativity Scores by Group

Word count	Placement	New ideas	Good ideas	Imagination	SE Total	Divergent	Convergent	Performance	CBI
WC 1									
Upper group	.11	-.25	-.17	-.16	-.20	.31	.02	.25	.17
Lower group	-.25	.01	.05	-.14	-.03	-.17	.09	-.13	-.13
WC 3									
Upper group	.06	.32	.41	.43	.40	.40	-.01	.41	.29
Lower group	-.07	.34	.42*	.24	.41*	.35	.40*	.17	.40*
Difference									
Upper group	-.09	.51*	.48*	.48*	.50*	-.09	-.04	.00	.00
Lower group	.21	.24	.26	.31	.33	.43**	.21	.25	.42*

Note. Upper group $n = 17$; Lower group $n = 25$

* $p < 0.05$; ** $p < 0.01$

tween student self-assessed creativity and relative fluency performance over time, suggesting that creative students particularly benefit from open-ended task-based learning. There was also a clear negative relationship between lower level students' reported creative behaviour and their initial test scores. This raises questions both about the impact of testing and test-based education on creative students, and on the methods we use to place them in the more communicative style courses taught at university. We might also question, as did Ottó (1998), whether, in the move to communicative teaching, we are unfairly disadvantaging students who are generally less creative.

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Bio Data

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References

- Albert, A. (2012). Creativity. In Robinson, P. (Ed.), *Routledge encyclopedia of second language acquisition* (pp. 144-146). London: Routledge.
- Albert, A., & Kormos, J. (2004). Creativity and narrative task performance: An exploratory study. *Language Learning*, 54, 277-310.
- Al Jarf, R. S. (2007). Online instruction and creative writing by Saudi EFL freshman students. *Asian EFL Journal*, 22. Retrieved from asian-efl-journal.com/teaching-articles/2007/08/05/online-instruction-and-creative-writing-by-saudi-efl-freshman-students/
- Beghetto, R. A. (2006). Creative self-efficacy: Correlates in middle and secondary students. *Creativity Research Journal*, 18, 447-457.
- Belz, J. A., & Reinhardt, J. (2004). Aspects of advanced foreign language proficiency: Internet-mediated German language play. *International Journal of Applied Linguistics*, 14, 324-362.
- Boden, M. (1993). *The creative mind: Myths and mechanisms*. London: Abacus.
- Carter, R. (2004). *Language and creativity*. London: Routledge.
- Clarke, M. A. (2005). *Creativity in modern foreign languages teaching and learning* (Working paper). Higher Education Academy. Retrieved from http://port.academia.edu/MargaretAnneClarke/Papers/381366/Creativity_in_Modern_Foreign_Languages_Teaching_and_Learning
- Cropley, A. (2001). *Creativity in education and learning: a guide for teachers and educators*. London: Kogan Page.
- Cropley, A. (2006). In praise of convergent thinking. *Creativity Research Journal*, 18, 391-404.
- Csikszentmihalyi, M. (2007). *Creativity: Flow and the psychology of discovery and invention*. London: Harper Collins.
- Dietrich, A. (2007). Who's afraid of a cognitive neuroscience of creativity? *Methods*, 42, 22-27.
- Dörnyei, Z. (2005). *The psychology of the individual language learner: Individual differences in second language acquisition*. London: Erlbaum.
- Hocevar, D. (1980). Intelligence, divergent thinking, and creativity. *Intelligence*, 4, 25-40.
- Holmes, V. L., & Moulton, M. R. (2001). *Writing simple poems: Pattern poetry for language acquisition*. Cambridge: Cambridge University Press.
- Kaufman, J. C., & Beghetto, R. A. (2009). Beyond big and little: The four C model of creativity. *Review of General Psychology*, 13, 1-12.
- Kaufman, J. C., Plucker, J. A., & Baer, J. (2008). *Essentials of creativity assessment*. Hoboken, NJ: John Wiley and Sons.

- Mumford, M. D. (2003). Where have we been, where are we going? Taking stock in creativity research. *Creativity Research Journal*, 15, 107-120.
- Ottó, I. (1998). The relationship between individual differences in learner creativity and language learning success. *TESOL Quarterly*, 32, 763-773.
- Plucker, J. A., Beghetto, R. A., & Dow, G. A. (2004). Why isn't creativity more important to educational psychologists? Potentials, pitfalls and future directions in creativity research. *Educational Psychologist*, 39, 83-96.
- Runco, M. (2008). Commentary: Divergent thinking is not synonymous with creativity. *Psychology of Aesthetics, Creativity and the Arts*, 2, 93-96.
- Simonton, D. K. (1997). Creative productivity: A predictive and explanatory model of career trajectories and landmarks. *Psychological Review*, 104, 66-89.
- Smith, C. A. (2011). Creative writing portfolios. *OnCUE Journal*, 5, 19-33.
- Stempelski, S. (2006). *World link* (Book 2). Boston, MA: Heinle.
- Swann, J., & Maybin, J. (2007). Introduction: Language creativity in everyday contexts. *Applied Linguistics*, 28, 491-496.
- Urduan, T. C. (2010). *Statistics in plain English* (3rd ed.). New York: Routledge.

Appendix A

Survey on Creativity

このアンケートは、XX大学指導のもと、外国語を学ぶ方法と創造性との関係を研究するための一環として行われるものです。

このアンケートに関するあなたの回答内容は、厳密に保護されます。個々のアンケート内容を研究するために各個人に番号がふられていますが、これらの個人を特定できる情報はアンケートとは別で厳重に保管されます。個人が特定されるような名前などはアンケート用紙に一切書かないようお願いいたします。

このアンケートに回答しても、回答しなくてもXX大学からの成績評価には一切影響しません。

このアンケートに対する疑問や質問についてはスミス・キャメロン (casmith@

lc.chubu.ac.jp) まで直接ご質問ください。

このアンケートは10分以内に回答できる程度のもので、どうかできるだけ正直に回答してください。

番号: _____

Part 1

以下の文章を読んであなた自身にどのくらいあてはまりますか。該当すると思われる番号に○をつけてください。

	あてはまらない		あてはまる		
例:	1	2	3	4	5
私は新しいアイデアを思いつくのが得意だ。	1	2	3	4	5
私はいいアイデアをよく思いつく。	1	2	3	4	5
私は想像力が豊かなほうだ。	1	2	3	4	5

Part 2

あなたがしたことのある頻度を答えてください

	全くない	1回	2~3回	4~5回	6回以上
絵を描いたことがある	1	2	3	4	5
歌詞や曲を書いたことがある	1	2	3	4	5
お祭りなどの飾り付けを自作したことがある	1	2	3	4	5
ダンスの振り付けをしたことがある	1	2	3	4	5
漫画やアニメを描いた事がある	1	2	3	4	5
オリジナルレシピの料理を作ったことがある	1	2	3	4	5
コンピュータプログラムを自分で作成したことがある	1	2	3	4	5
短編小説を書いた事がある	1	2	3	4	5
詩を書いたことがある	1	2	3	4	5

	全くない	1回	2~3回	4~5回	6回以上
ジョーク、コメディ、お笑いのネタを書いたことがある	1	2	3	4	5
科学分野の活動で賞もらったことがある	1	2	3	4	5
舞台上で演劇を演じたことがある	1	2	3	4	5
アクセサリーを自作したことがある	1	2	3	4	5
演劇、ダンス、祭りなどの衣装の製作に関わったことがある	1	2	3	4	5
自分で衣類をデザインまたは縫ったりしたことがある	1	2	3	4	5
人前で音楽を演奏したことがある	1	2	3	4	5
自分のため、また人のためにおもちゃを造ったことがある	1	2	3	4	5
人前でダンスを踊ったことがある	1	2	3	4	5

Many thanks for your cooperation!

ご協力ありがとうございました。

Appendix B

Translations of the Survey Questions

Creative Self-Efficacy:

How much are the following statements true for you personally:

	Not at all		Very true		
I am good at coming up with new ideas.					
I have a lot of good ideas					
I have a good imagination					

Creative Behaviour Inventory:

How often have you:

	Never	Once	2 or 3 times	4 or 5 times	6 or more times
Painted a picture					
Written a song (words or music)					
Made your own festival decorations					
Choreographed a dance					
Drawn cartoons or manga					
Cooked an original dish					
Written an original computer program					
Written a short story					

	Never	Once	2 or 3 times	4 or 5 times	6 or more times
Written a poem					
Written something funny, such as jokes or a comedy sketch					
Won a prize for a science project					
Acted on stage					
Made your own accessories					
Helped to design costumes (for a play, dance, festival etc.)					
Designed or made your own clothing					
Performed music in public					
Made toys for yourself or for others.					
Performed a dance in public.					

Appendix C

Divergent, Convergent, and Performance Thinking Measure Components from the Creative Behaviour Inventory

Divergent (open-ended)	Convergent (specific end)	Performance
1. Painted a picture	3. Made your own festival decorations	12. Acted on stage
2. Written a song (words or music)	6. Cooked an original dish	16. Performed music in public
5. Drawn cartoons or manga	7. Written an original computer program	18. Performed a dance in public
8. Written a short story	11. Won a prize for a science project	
9. Written a poem		
13. Made your own accessories		