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Reframing Task Condition: Repeating L1-L2 Writing and L2 Writing Performance

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We examined the role of L1 writing on L2 writing performance by repeating the same topic twice through L1 writing first and L2 writing later. We designed what we call a 'L1 + L2 writing task' and a 'L2-only writing task' respectively. In the L1 + L2 writing task, students wrote a text in their L1, and wrote the same topic in L2, by removing the initial L1 essay. We focused on validating which task conditions (± L1 writing) account for the variation in linguistic performance in EFL high-school students' writing. Our study was conducted with two intact classes (n = 60) assigned to the L2-only, and students from the other two classes (n = 60) assigned to the L1 + L2. The findings indicate that L1 writing may push students to direct their attentional resources toward effective text construction, thereby mitigating a large number of simultaneous demands on attention. We add to empirical knowledge on the effects of L1 writing in task repetition, by exploring how task repetition affected our students' L2 writing performance.

Key words: TBLT, task condition, task repetition, L1/L2 writing, Korean EFL high school students

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1. INTRODUCTION

Writing is a complex and multifaceted process involving "continuous problem-solving and decision-making activity on the part of the writer" (Manchón & Roca de Larios, 2007, p. 104). Not surprisingly, the ability to write accurately and coherently in a second language (L2) is a major challenge for language learners. What is more, simultaneous engagement in meaning-making and language processing creates cognitive strain, which refers to the demands placed on attention (Scott, 1996). Cognitively oriented research in L2 writing has also provided robust insights about how linguistic concerns compete for attention with other writing processes in text-production activity, thereby potentially limiting the attentional resources available to attend to other constraints in writing (Manchón, 2014).

Since some L2 students are not able to handle simultaneously both cognitive and linguistic demands on attention, they rely on their first language (L1) "like a crutch to obtain cognitive stability" (Woodall, 2002, p. 20) while writing in L2. When writers experience cognitive overload that writing in L2 often entails, then in order to reduce cognitive strain, they revert to using their L1 for the most demanding activities. If L1 use is a strategy which writers employ while writing in their L2, it stands to reason that L1 use was related to text quality. Unfortunately, research directly relating L1 use during L2 writing to text quality has been relatively sparse (see review in van Weijen, van den Bergh, Rijlaarsdam, & Sanders, 2009). Further research is needed to explore in depth how and to what extent L1 use affects L2 written product.

Then, of special relevance to such study is "a psycholinguistic perspective, which focuses on tasks as engaging students in certain types of mental processing that lead them to language use" (Ruiz-Funes, 2014, p. 166). Within this view, two fields guided the investigation: the theoretical frameworks proposed by Skehan's (1998, 2001) Limited Attentional Capacity Model and Robinson's (2007) Cognition Hypothesis; and a very comprehensive problem-solving model of the L1 writing process proposed by Flower and Hayes (1981). The central tenet in cognitive accounts of writing is the consideration of composing as a cognitively demanding, problem-solving activity, with writers differing in the range of (and control over) the strategies used to solve them.

Task-based language teaching (TBLT) research has long acknowledged that "task design variables interact with human cognitive response in creating distinct opportunities for language learning" (Bygate, Norris, & van den Branden, 2011, p. xi). Therefore, we attempt to examine the role of L1 writing on L2 writing performance by repeating the same topic twice through L1 writing first and L2 writing after a one day later. The advantage of such task repetition is to allow students to pay more attention to ideas in L1 writing and then help them identify the linguistic structures in L2 writing. Once ideas on the topic are

identifiable, the language is more likely to be focused in subsequent L2 writing. At the same time, when working memory space is freed up, writers could retrieve linguistic resources more easily to meet the demands of the assigned task.

Accordingly, we set task conditions under which students repeat the same topic twice (cf. Bygate, 2001). We designed what we call a 'L1 + L2 writing task' and a 'L2-only writing task' respectively. In the L1 + L2 writing task, students write a text in their L1, and write the same topic in L2, by removing the initial L1 essay. In this condition, L1 writing may be able to play instrumental roles (Harklau, 2002), consequently discouraging direct translation. In the L2-only writing task, students think and write as completely as possible in English. In the L1 + L2 writing task condition, different processing pressures and the possibility of more active monitoring may lead to different linguistic outcomes of L2 writing from those in the L2 writing-only condition. In the analyses, we focus on validating which, and to what extent, task conditions (± L1 writing) account for the variation in linguistic performance in EFL high school students' writing.

2. TBLT RECONSIDERATION: LINK L1 AND L2 WRITING

In Hayes and Flower's (1980) original model of the cognitive processes in writing, by translation is meant the process of putting ideas into language, a process thought to be automatic in L1 writing in this early model, which, as a result, talked about problem-solving as referring only to the demands imposed by the thinking, cognitive dimension of writing. However, empirical research on the cognitive demands of writing processes points to the fact that "translation is the fundamental cognitive process of writing" (Fayol, Alamargot, & Berninger, 2012, p. 10) because translating "is the goal for planning and provides the product on which the review and revision processes operate" (p. 12) during the act of writing.

Understandably, in L2 writing, the language constraint imposed by the target language is probably the factor that makes translation process more demanding to students particularly at lower level of language proficiency. In translating process, too much attention dedicated to retrieving words may leave little working memory free to attend to generating detailed content and organized discourse (Kellogg, 1999; McCutchen, 2000). This is in line with findings by Centeno-Cortés and Jiménez Jiménez (2004), who found that L2 learners often reverted to using their L1 during problem-solving tasks when solving the problem became too difficult and resulted in "breakdowns in the thinking process" (p. 20).

Overall, a large body of research has investigated how L1 use is related to specific writing activities, such as generating ideas and planning (see Beare & Bourdages, 2007).

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However, some of these studies were rather vague about what L1 use actually means and how it was measured (e.g., Knutson, 2006; Lay, 1982; Qi, 1998). And again, several researchers have looked at the L1 use during L2 writing. Some studies that did attempt to measure L1 use have either included writers' self-reported percentage of L1 use (Cohen & Brooks-Carson, 2001; Kobayashi & Rinnert, 1992; Sasaki & Hirose, 1996) or reported the duration or length of L1 use as a proportion of the writing process as a whole (Woodall, 2002).

Others attempted to calculate to what extent L1 was used during L2 writing, by reporting the overall percentage of L1 words in L2 think-aloud protocols (Wang & Wen, 2002), the mean number of language switches per task (Wang, 2003), and the length of time that L1 use occurred during L2 writing (Woodall, 2002). It is difficult, because of the differences across these studies, to offer generalization about their findings. It should be also noted that the theoretical and methodological problems combined make it hard to establish a direct link between L1 use and text quality, which is a relevant issue for educational purposes (see van Weijen et al., 2009).

When L2 students are confronted with a writing task, they bring with them a number of attributes that they deploy while performing the task. TBLT research to date has not sufficiently examined such attributes (Macaro, 2014), especially L1 use during L2 writing. Certainly, we predicted that L1 use would be related to "linguo-cognitive problem-solving activity that characterizes task execution in (L2) writing" (Manchón, 2014, p. 28). Surprisingly, this issue was not taken up within the TBLT empirical research agenda. Of course, research has extensively investigated the benefits of TBLT and L1 use during L2 writing as separate domains. Future research is required to bring the two areas together. In this respect, we attempted to bring together the fields of task-based research and L1 use in L2 writing as we feel strongly that the two can develop a beneficial synergy.

In a Limited Attentional Capacity Model, Skehan (1998, 2001, 2003) argues that students possess a limited information processing capacity, that only one aspect may be in focus at a given time during a given task, and that the manipulation of task variables affects the fluency, accuracy, and complexity of production. According to Skehan and Foster (2001), there is tension between fluency and complexity, meaning that either an increase in complexity or in fluency occurs at a time, but not both together. In particular, as cognitive complexity increases, students will focus their attention on content over language form, a consequence of their limited attentional resources.

By contrast, Robinson (2001) hypothesized that more cognitively demanding tasks would lead to more attention to output, and, as a consequence, would facilitate the incorporation of better performance. Robinson's model, known as the Triadic Componential Framework stipulates two dimensions for task complexity: resource-directing and resource-dispersing. Task complexity along the resource-directing dimension

results in increased accuracy and complexity as students have to devote their attentional resources to the demands of the task; at the same time, fluency decreases as students have to process language. On the other hand, task complexity along the resource-dispersing dimension will result in decreased fluency, accuracy, and complexity levels in production as it will limit the attentional and working memory of learners.

Flower and Hayes' (1981) problem-solving model of the L1 writing process includes *planning*, *translating*, and *reviewing*. In this view of writing, *translating* is essentially the process of transforming ideas into language. Research tells us that lexical access and retrieval are important factors in the transformation of mental ideas into linguistic form (Kellogg, 1996; Manchón, Murphy, & Roca de Larios, 2007; van Gelderen & Oostdam, 2004). Indeed, it is not sufficient to have a large vocabulary stored in the mental lexicon. This vocabulary has to be accessed efficiently along with its grammatical features and morphological processing of the words. In addition, researchers have found that when engaged in the problem-solving behavior, L2 writers make use of various L1-based lexical search strategies (see Manchón et al., 2007).

As noted earlier, when students perform a demanding task they are forced by task demands to selectively allocate their limited attentional resources to some but not all aspects of the task. At this point, Lameta-Tufuga (1994) examined the effects of having learners discuss a task in their first language before they had to carry it out in writing in the second language. The first language discussion of the task had some interesting features. The learners were all very actively involved in coming to grips with the ideas. In addition, the first language discussion included quite a lot of the second language vocabulary which would be used in the later task. Thus the first language discussion helped them gain control of relevant L2 vocabulary in a very supportive L1 context.

Like Lameta-Tufuga (1994), Knight (1996) made a similar finding. The learners who did the preparatory L1 discussion in groups did much better on the L2 writing task than other learners who did preparatory discussion in L2. In a similar vein, the significance of task repetition has been implied in L2 writing research. Bygate (2001) explained how task repetition can help learners use the L2 on subsequent occasions. And further, these studies add weight to the argument we are proposing: Manipulating task condition is one way to help learners allocate attentional resources more fully to various aspects of language in a task performance.

Here, we assume that if EFL high-school students carry out L1 writing task on the first occasion, and they repeat the same topic in subsequent L2 writing task, they are able to free up some of their capacity to pay attention to other aspects of the task (i.e., syntactic complexity, accuracy, or fluency) while performing subsequent L2 writing. In this way, L1 writing may influence the nature of written production. Accordingly, the following research question guided our study:

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How does Korean EFL high school students' performance differ between the two conditions (± L1 writing) in terms of fluency, and syntactic and lexical complexity as well as writing quality?

3. THE STUDY

3.1. Participants

The study took place at a Korean secondary school in Seoul. One hundred-twenty (*n* = 120) female students participated in the study, 16–17 years of age. At the time of data collection for our study, students had just begun their first year of 3-year academic study. The study was conducted during regular class-time, with two intact class (*n* = 60) assigned to A group (L2-only writing task condition), and students from the other two classes (*n* = 60) assigned to B group (L1 + L2 writing task condition). These students' literacy experience included writing practice, but they had little experience of writing in English before entering high school.

In order to make sure that the two condition groups (± L1 writing) are similar in terms of language proficiency, the final scores for English at the end of their first year were compared. Table 1 demonstrates the descriptive statistics of the two group's scores. No statistical differences in language proficiency were found between the groups. Since the 95% confidence intervals for the two groups overlap, the two groups appear to be similar in terms of English proficiency.

TABLE 1

Mean Scores of Final Grade by Groups

Group	Group A (*n* = 60)		Group B (*n* = 60)	
	M (*SD*)	95% CI	*M* (*SD*)	95% CI
Scores	78.59 (11.43)	75.50, 81.61	77.84 (14.90)	74.14, 81.34

3.2. Task and Task Conditions

The writing task asked the students how to deal with problems with their friends. Students were to refer to information from their own personal experience. No reference material was available. For the English-only condition (Group A), they had 45 minutes to write in English, though most of them finished earlier. For the Korean + English condition (Group B), they also had 45 minutes to write a text in Korean. This was done simply by asking students to write an essay in L1, Korean. The teacher explained that they would be

writing an essay in English next class. After a one-day interval, they were given the same topic and were asked to write a text in English. They were given 45 minutes to finish their writing. Exactly repeating the same topic does not mean that students simply copy their previous production (Nitta & Baba, 2014).

3.3. Data Analysis

All the writings were holistically scored using a six-point scale, with 1 = weak and 6 = strong. The holistic scoring scale is a modified form of Independent Writing Rubrics for *TOEFL* iBT Test (Alderson, 2009). In holistic scoring, the written text was evaluated as a whole, and scored on "the overall tone, structure, and comprehensibility of the writing" (Terry, 1989, p. 49). The holistic ratings were performed by two experienced, trained raters; they achieved an interrater reliability coefficient of .87, showing a high degree of agreement on the scores.

At the lower-intermediate level of the students in our study, it appears to be lexical knowledge and grammatical knowledge that are the most important components of the linguistic knowledge that is activated in their L2 writing. So together, we examine fluency, and syntactic and lexical dimensions of text quality. "Although fluency is the construct with the most varied definitions and measures in writing research" (Abdel Latif, 2013, p. 99), following Nitta and Baba (2014), we used text length as a measure of writing fluency. Text length refers to how much language was produced overall to complete the task as measured by the number of words.

Lexical measures include lexical sophistication and lexical diversity in text. We used word frequency values from the CELEX corpus (Baayen, Piepenbrock, & Bulikers, 1996; Crossley, Salsbury, & McNamara, 2010), and the Measure of Textual Lexical Diversity (MTLD) (McCarthy & Jarvis, 2010). MTLD was chosen among other lexical diversity measures such as type-token ratio and vocd (Malvern, Richards, Chipere, & Durn, 2004) because it has been found to be least affected by text length (Jarvis, 2012; McCarthy, 2005). Along with lexical sophistication and diversity, we used a Latent Semantic Analysis (LSA) index provided by Coh-Metrix 3.0 as a method to examine the development of lexical networks in L2 texts (Crossley, Salsbury, & McNamara, 2012).

LSA evaluates the similarity of meaning between words, sentences, and passages by analyzing large corpora. What LSA measures may be debatable, but Crossley and his colleagues (2008) used it as a measure of lexical proficiency. To measure syntactic aspects, values for average sentence length (ASL) and sentence syntax similarity (STRUT, all sentences across paragraphs) (McCarthy, Cai, & McNamara, 2009) were computed. If a variety of sentence structure is used in text, its STRUT value will decrease. A lower STRUT value possibly indicates greater syntactic variety. Table 2 summarizes the

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performance measures used in our study.

TABLE 2

Task Performance Measures Used in the Study

Tool	Measures	Content
Coh-Metrix	Fluency - Text Length	Total number of words in a text
	Lexical Aspects - Lexical Sophistication - MTLD - LSA	 Word frequency values from the CELEX corpus Measure of Textual Lexical Diversity Latent Semantic Analysis (i.e., similarity of meaning between word, sentences, and passages)
	Syntactic Aspects - ASL - STRUT	 Average sentence length Sentence syntax similarity, all sentences across paragraphs

For the statistical analysis, SPSS 24.0 was used. The statistical analyses performed were paired sample *t*-tests. Cohen's *d*-value was used to measured effect sizes. *D*-values below .5 indicate small, between .5 and .8 medium, and above .8 large effect size (Cohen, 1988).

4. RESULTS

When the inclusion of L1 writing task inserted, students scored a little less than one point higher on the holistic quality rating (3.55 vs. 2.72 on the six-point scale). The writings in the Korean + English condition group were of superior quality than those produced in the English only condition group. Significant differences between two groups were noted in the quality of the writings (t = -7.936, p = .001, d = 1.44; see Table 3), with a large effect size.

TABLE 3

***T*-test Result for the Writing Quality**

Measure	**Group**	*M*	*SD*	*t*	*p*	Cohen's *d*
Writing Quality	A (n = 60)	2.72	.640	-.936	.001	1.44
	B (n = 60)	3.55	.502			

As Table 4 indicates, significant differences were found between the two groups in terms of measure of writing fluency. The students in the English only group wrote longer essays,

resulting text length were significantly longer by 34 words (116.78 in the English only group, 82.53 in the Korean + English group). Once again, an independent samples t-test demonstrates that the difference between the two groups is statistically significant ($t(118) = 4.073$, $p = .001$, $d = .74$; see Table 4). It also needs to be noted that the effect size for difference in text length is in the medium.

TABLE 4

***T*-test Result for the Measure of Fluency**

Measure	Group	*M*	*SD*	*t*	*p*	Cohen's *d*
Text Length	A (*n* = 60)	116.78	51.35	4.073	.001	.74
	B (*n* = 60)	82.53	40.07			

For lexical aspects, as can be seen in Table 5, the English only group elicited less frequent words (CELEX word frequency: $t = -2.273$, $p = .025$, $d = .45$) and used more varied vocabulary (MTLD: $t = 3.225$, $p = .002$, $d = .65$), with the effect sizes from small to medium. Large standard deviations for MTLD scores showed a correspondingly large degree of variation within the group, which resulted in the differences failing the test of significance (Muncie, 2002, p. 230). It is noteworthy, however, that repeating the same topic twice through L1 writing + L2 writing did affect the students' lexical proficiency (LSA: $t = -2.106$, $p = .037$, $d = .41$), with a medium effect size.

TABLE 5

***T*-test Result for Various Lexical Measures**

Measure	Group	*M*	*SD*	*t*	*p*	Cohen's *d*
CELEX Word Frequency	A	3.10	.10	-2.273	.025	.45
	B	3.15	.12			
Measure of Textual Lexical Diversity (MTLD)	A	47.87	18.07	3.225	.002	.65
	B	38.23	14.44			
Latent Semantic Analysis (LSA)	A	.17	.13	-2.106	.037	.41
	B	.23	.16			

As indicated in Table 6, the students in the L1 + L2 writing condition group produced writing longer and more varied sentences (ASL and STRUT). However, there were no significant statistical differences between the two groups in the syntactic complexity of their production as measured by average sentence length (ASL) and sentence syntax similarity (STRUT). To sum up, the students in the English only condition wrote longer with a wider variety of words (MTLD), although there were no differences in terms of

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syntactic complexity (see Table 6).

TABLE 6

***T*-test Result for the Measures of Grammatical Complexity**

Measure	Group	*M*	*SD*	*t*	*p*	Cohen's *d*
Average Sentence Length (ASL)	A	9.87	3.25	-1.100	.274	.20
	B	10.50	2.99			
Sentence Syntax Similarity (STRUT)	A	.17	.05	1.379	.171	.20
	B	.16	.05			

5. DISCUSSION

The results indicate that, in the L1 + L2 writing condition, the students produced overall shorter writings than those in the L2-only condition. However, length itself is not necessarily an indicator of quality. The result for the quality rating does indicate that the L1 + L2 writing condition group performed better than the L2-only condition group dramatically. This means that the inclusion of L1 writing in task repetition is related to "immediate and short-term changes in writing capacities" (Norris & Manchón, 2012, p. 223). In addition, students in the Korean + English condition have greater control over LSA, which "accurately estimates passage coherence" (Landauer, McNamara, Dennis, & Kintsch, 2007, p. X). That is, they produced writing with overall text coherence and ease of understanding. This may be the result of the L1 + L2 writing condition group focusing more on the overall semantic unit of a text, thereby avoiding an exclusive focus on text length during L2 writing. These results are also in line with the effects of task repetition, a task factor of considerable interest in TBLT empirical studies (Bygate, 2001; Nitta & Baba, 2014).

Importantly, the consecutive order of L1 writing and L2 writing within task repetition helps students first make meaning in L1 writing and then work on form in L2 writing. The L1 writing freed students from overall concerns of linguistic difficulties and allows them to work on meaning, which seems to suggest that, when writing in L2, students pay more attention to how to communicate their ideas because L1 writing provides them with a record of their ideas on the topic that they can monitor. The students made the necessary connections between form and meaning in authentic contexts of L1 and L2 writing (cf. VanPatten, 2004). These findings, in turn, may suggest the possibility of raising students' awareness of formal aspects through repetitive practice of the writing task. That is, the students might start challenging themselves to use more varied structures (i.e., as reflected in STRUT scores) with a greater lexical proficiency (i.e., increasing LSA scores) through

repetitive engagement of the task.

The L2-only condition group wrote longer with a greater variety and range of lexical items. A more detailed inspection reveals a supportive relation among text length, MTLD, and CELEX word frequency in the English only group; that is, when the students are able to produce longer texts, they used more varied and lower frequency words. To our surprise, in the L2-only condition, vocabulary knowledge (lexical sophistication and diversity) makes little contribution to students' writing quality. Hence, it might be argued that, in the L2-only condition, the students may be so much involved in word retrieval that they may require too much conscious attention, leaving little working memory capacity free to attend to developing the essay content. This hints at an attentional trade-off (Skehan, 1998, 2003), whereby students may have focused attention on certain aspects of L2 writing at the expense of others.

The students in the L1 + L2 writing condition are in a better position to decide how to allocate their attentional resources to various cognitive operations during the writing process. It is evident that, in this condition, the students can "keep information in working memory while manipulating the content of text far better" (Schoonen, Gelderen, Glopper, Hulstijn, Simis, Snellings, & Stevenson, 2003, p. 170). Taken together, we might argue that the inclusion of L1 writing in task repetition may have induced the students to focus their attention differently. Not only that, it also turns out that a mediating effect of L1 writing on the text coherence was present. These findings highlight the performance condition under which the task is performed (i.e., the communicative stress, see Skehan, 1998) and the differential impact it might have on processing information associated with L2 written production.

6. CONCLUSION

We feel that although abundant TBLT-oriented empirical efforts have gone into elucidating the effects of learner-related factors (Manchón, 2014), L2 students, who have recourse to L1 in L2 writing, are too often marginalized and ignored in the TBLT literature. If we consider this argument, then task conditions in L2 writing ought to strategically encompass L1 use, crucially one of the most characteristic features of L2 writing. So, by explicitly linking L1 writing and L2 writing through task repetition, we attempted to configure the special place for L1 in L2 writing task. As well, we offered empirical evidence of "serving as a control mechanism for the writing process (during task repetition) to which the L1 writing is put" (Manchón, Roca de Larios, & Murphy, 2009, p. 114).

Perhaps the most outstanding conclusion to be drawn from our study is that L1 writing

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may push students to direct their attentional resources toward effective text construction, thereby mitigating the effects of attentional capacity limitations. Since the amount of information we can retain in working memory is quite limited and decay of information is quite rapid (Friedlander, 1990), during L1 + L2 writing condition, the students successively engaged in the solution of different sets of problems, "with carryover benefit to subsequent writing" (Conner & Farmer, 1990, p. 134). The second conclusion to draw is that by manipulating task condition, it is possible to help students develop their control over textual output in certain directions. Such conclusion is important because the task repetition allows students to deal with multiple aspects of effective text construction.

In this respect, our study has found that the L1 writing task has "the potential to elicit the targeted features of (L2) writing competence" (Kormos, 2011, p. 149). Whether classified as a cognitive processing factor in Skehan's (1998) Limited Attentional Capacity model or "ability factors" (± prior knowledge) in Robinson's (2011) Triadic Componential Framework, L1 writing seems to have had effects on L2 students' writing performance. What is more, we add to empirical knowledge on the effects of L1 writing, by addressing the perspective of learning-to-writing (i.e., exploring how engagement with L1 writing tasks helps to advance writing skills in L2) highlighted by Manchón (2011). At the level of pedagogy, TBLT and L1 writing, together, are especially well positioned in providing students with an excellent opportunity for watershed changes in L2 students' textual abilities.

To some extent, our study is burdened by methodological limitations. Because we did not collect post-study debriefing questionnaires, we could not provide valuable insights about how students in the L1 + L2 condition actually used L1 writing during L2 writing. Also, previous L2 writing research has used three measures for capturing L2 writing performance: fluency, accuracy, complexity (Nitta & Baba, 2014). Instead, in our study, accuracy measures were excluded because an accuracy focus might have kept EFL high-school students from producing as much meaningful writing as possible. Nevertheless, we consider our findings to be sufficiently relevant to resituate future TBLT research agenda, particularly with regard to understanding interaction of L1 and L2 literacy.

Applicable levels: Secondary, tertiary

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