

Using Convergent and Divergent Tasks through Critical Thinking in Writing Classes

*Hamid Marashi**

Islamic Azad University, Central Tehran Branch

Email: hamid.marashi@iauctb.ac.ir

Rahil Akbar-Hosseini

Islamic Azad University, Central Tehran Branch

Email: rahil.akbarhosseini@gmail.com

Abstract

This study examined the comparative impacts of convergent and divergent tasks while employing critical thinking techniques on EFL learners' writing. Accordingly, 60 male and female learners were chosen from a group of 90 learners based on their scores on a sample PET previously piloted in one of Tehran's language schools. The learners were then randomly put into two experimental groups: 30 learners undergoing convergent tasks and 30 learners receiving divergent tasks. Both groups were exposed to critical thinking techniques. After the treatment, a sample PET writing section was administered as the posttest to both groups with their mean scores being compared; the results showed that neither group outperformed the other significantly. This result probably indicates that the critical thinking instruction was more of an influential factor compared to the variability of convergent and divergent tasks, thereby consolidating further the notion that critical thinking instruction is a highly influential factor in ELT.

Keywords: Convergent tasks, Critical thinking, Divergent tasks, Writing

1. Introduction

Learning the English language has become a perhaps inevitable necessity throughout almost the entire world; as such, the ability to communicate in English has become a major goal for many people. Within this context, one of the skills which is considered as an essential part of English learning and communication is writing. Indeed, “Writing is a valuable communication skill to convey a person’s thoughts and feelings and it is a means of self-discovery and linguistic discipline” (Ismail & Maasum, 2009, p. 23). Given the paramount importance of writing, the ELT literature is simply overwhelmed by various initiatives and endeavors to optimize the learning of this skill with one such attempt being task-based language teaching (TBLT) and its numerous subcomponents.

Among the different tasks within the TBLT continuum are convergent and divergent tasks. The former are those requiring collaborative work in meaning negotiation where one single goal, i.e., only one correct answer, is sought (Astika, 2004; Skehan, 2001). On the other hand, divergent tasks “require participants to generate as many target-related responses as possible, and the target constrains the selection of possible responses rather weakly” (Akbari Chehrmahini & Hommel, 2012, p. 635). Many studies have been conducted on convergent/divergent tasks (e.g., Duff, 1986; Marashi & Tahan-Shizari, 2015; Nunan, 2005; Shoarnaghavi, Seifoori, & Ghafoori, 2014; Swan, 2005) not necessarily resembling conformity in their results.

In addition to the teaching methods and techniques used to improve EFL learners’ writing skill, the conceptualization of writing as a mental process has also been emphasized (Hedge, 2003). Accordingly, writing and thinking are very much correlated in that the former is perhaps a concrete externalization of the latter; to this end, there are those such as Bean (as cited in Damron & High, 2008) who focus more specifically on critical thinking and not thinking in general by asserting that, “Writing is both a process of doing critical thinking and a product of communicating the result of critical thinking” (p. 17). There is unsurprisingly a multitude of research studies in ELT on critical thinking and writing (e.g., Alagozlu, 2007; Khabiri, & Firooz, 2012; Marashi & Jafari, 2012; Sendag & Odabas, 2009).

Regarding the overview above, there were three major grounds envisaged by the researchers in conducting this study. Firstly, they were, of course, interested to explore the ways to enhance EFL learners’ writing – as is indeed an ongoing and indispensable trend

in the ELT literature. Secondly, inspired by a number of reported studies (discussed above) on the impact of convergent/divergent tasks, the researchers were also eager to know how the two task modalities impacted learners' writing. And last, but not least, as a study previously conducted by Marashi and Noochirwani Tehran (2011) concluded that using critical thinking techniques probably overcomes the comparative impact of TBLT and content-based instruction on reading and also writing (forthcoming), the researchers were thus keen to find out whether using critical thinking also outweighs the difference between divergent and convergent tasks. Hence, they set out to investigate whether there is a difference between the effect of teaching convergent and divergent tasks through using critical thinking techniques on EFL learners' writing. Considering the above purpose, the following research question was raised:

- Does using divergent and convergent tasks through employing critical thinking techniques have any significantly different effects on EFL learners' writing?

2. Literature Review

2.1. Writing

Writing is perhaps the most complex skill for second language learners and this difficulty cannot be only attributed to creating and organizing new ideas, but extended to transfer these ideas to appropriate contexts (Richards & Renandaya, 2002). Another source of difficulty rests on the assumption that writing does not simply happen in a vacuum; rather, it is always embodied in a "rhetorical situation – a complex web of relationships among the elements of writing" (Moffet, as cited in Silva & Matsuda, 2002, p. 253). Writing is beyond merely constructing an endless array of sentences or producing a precise description of reality and in effect the negotiation of meaning with the views held by particular readers (Hyland, 2003).

Teaching writing may turn into a perhaps cumbersome and time-consuming process as there is a plethora of aspects requiring adequate attention, including content, organization, development, rhetoric, etc. (Celce Murcia & Olshtain, 2002). The task becomes even thornier when it comes to the teaching of writing for foreign language learners and integrating grammar and spelling in writing classes (Chia-Hsiu Tsao, 2015).

Due to the complexity of the writing skill and the diversity of factors playing a pivotal role in the writing process, researchers have attempted to delve into this complex,

yet essential skill from different perspectives (Hyland, 2003; Silva & Matsuda, 2002). It is argued that the teaching of writing can be influenced by many different tasks including divergent/convergent tasks (Cleland & Pickering, 2006).

2.2. Convergent/Divergent Tasks

As discussed above, the emergence of TBLT has created the arena for an extensive inquiry since the late 1980s (Ellis, 2005) with the convergent/divergent tasks typology having been formulated from the notions of knowledge formation. While convergent tasks are defined as those tasks which need “true justified knowledge, abstract conceptualization, and active experimentation” (Skehan, 2001, p. 49) with a structural emphasis on the collaboration of learners in fulfilling them, divergent tasks actually encourage “independent works which individuals can perform differently according to their cognitive styles and which might lead to different outcomes” (Swan, 2005, p. 12).

Convergent tasks encourage “only one correct answer, allow collaborative work with short answers of which are not highly cognitively demanding, and so require no reference making” (Astika, 2004, p. 30) and further motivate learners to produce a shared outcome in line with arriving at a reasonable solution. In addition to this, students collaborate and interact together which, in turn, leads to more negotiation (Cropley, 2000).

Duff (1986) acknowledges that in the process of doing convergent tasks, learners in pairs set out to solve a given problem while working cooperatively and thence form a consensus on a plausible solution. In divergent tasks, on the other hand, pairs of learners are asked to focus on a vast domain of topics while being provided with varying viewpoints on an issue and are thus asked to argue in favor of their stance and disagree with the point raised by their partner through as many reasons as possible. Throughout both processes, of course, learners can be clearly and directly motivated to resort to critical thinking.

2.3. Critical Thinking

A well-written piece reflects the different aspects of critical thinking; given this, critical thinking is an important ingredient that can influence cognitive learning skills and the way of thinking (Nunan, 2005). Ennis (2011) believes that critical thinking is synonymous with thinking clearly and reasonably; furthermore, this mode of thinking may

take into account the ability to take part in reflective and independent thinking and the ability to decide what to do or what to believe.

According to Ennis (2011), the concept of critical thinking is not a novelty but indeed a very ancient conceptualization. In fact, critical thinking has its roots in the Socratic questioning tradition proposed by Socrates himself some 2500 years ago. Through this, Socrates advocated people to ask deep questions that probe into thinking before they accept ideas (Bonk & Smith, 1998). But despite the rather old history of critical thinking, the term itself has its roots in the mid 20th century and can be defined as “the ability to analyze, criticize, and advocate ideas; to reason inductively and deductively and to reach factual or judgmental conclusions based on sound inferences drawn from unambiguous statement of knowledge of belief” (Freely & Steinberg, 2000, p. 34).

Critical thinking is indeed a mode of reflective thinking which may take into account interpreting, analyzing, critiquing, synthesizing, and evaluating information; according to Cottrell (2011), critical thinking is best defined as a cognitive activity endorsing a highly efficient mode of thinking which entails mental resources such as attention, selection, judgment, etc. Critical thinking promotes more precision among people in the way they think and function, more accuracy in the process of drawing distinctions among pertinent issues, and better decision making about the veracity and applicability of a statement (Lipman, 1991).

To this end, many L2 practitioners have highlighted the indispensableness of promoting critical thinking skills in ELT classrooms and empirical evidence, of course, favors the advantageousness of teaching critical thinking skills in such contexts (e.g., Chapple & Curtis, 2000). Halvorsen (2005, p. 31) considers two major such advantages: “Firstly, classes which involve elements of critical thinking tend to be generally more interesting and engaging. Secondly, using issues that encourage critical thinking helps to give the classroom a more meaningful and cohesive environment”. Halvorsen further asserts that, albeit the fact that critical thinking is not always easily generated, well-informed instructors can effect a great contribution to its development in the classroom context.

3. Methodology

3.1. Design and Context of the Study

The researchers could not be able to have a sample selected randomly in this study and thus resorted to nonrandom convenience sampling of intact groups; hence, the design was quasi-experimental. Nevertheless, the two experimental groups were assigned randomly to each method of teaching in this comparison-group posttest-only study where the method of instruction, i.e., divergent and convergent tasks in a CT setting comprised the two modalities of the independent variable while writing was the dependent variable. Moreover, the control variables of this study were the participants' language proficiency and age.

As for the context, the study was conducted in a private language school in Tehran in 2017.

3.2. Participants

In order to conduct this study, the researchers selected 60 female and male intermediate EFL learners aged 18-30 attending a private language school in Tehran; these 60 learners were selected from a larger group of 90 based on their performance on a sample Cambridge ESOL Preliminary English Test (PET). The 60 participants – whose scores fell within one standard deviation above and below the mean on the test – were subsequently assigned to two experimental groups of 30 in each randomly. Additionally, 30 other female intermediate-level participants took part in the test piloting. Furthermore, the two researchers of this study who enjoyed proven inter-rater reliability scored the writing sections of the PET during the research process ($r = 0.834, p = 0.0001 < 0.05$).

3.3. Instruments

3.3.1. Preliminary English Test (PET)

A sample PET developed by Cambridge ESOL was administered for the participant selection process (already described above). The test comprises all the four language skills of reading, writing, listening, and speaking in the three papers of reading and writing (paper 1), listening (paper 2), and speaking (paper 3). The PET contains 75 items, but 10 items of the test were removed since they proved to be faulty during the item analysis that was conducted after the piloting.

To assess the second and third parts of the writing section, the researchers used the PET general mark scheme which is the rubric for a summative score. This scheme includes the following components: language range, the complexity of message communication, variety, vocabulary, spelling, punctuation, grammatical structure, content points, target reader, and length. The maximum possible score is five.

3.3.2. Writing Posttest

In order to estimate the result of the treatment and obtain data at the end of the research, another sample PET writing paper was used as the posttest; accordingly, both groups took the test which lasted 30 minutes.

3.3.3. Course Book

The participants' main course book was *American Headway* (Soars & Soars, 2015) which covers the four language skills while attending to grammar and vocabulary as well. The goal of this topic based syllabus is the development of both fluency and accuracy in English and it further provides many opportunities for personalized discussion thus enabling the learners to enhance their linguistic and communication skills. Each unit of the book is organized around a central topic or theme and divided into eight-page lessons with each book consisting of 12 units. Three units of this book were taught in this experimentation.

3.4. Data Collection Procedure

The very first step in this research – as stated earlier – was piloting a sample PET among 30 intermediate students. After the participant selection procedure was completed, the treatment commenced in both groups. Both groups were taught by one of the researchers using the same course book over a period of six weeks which comprised 18 sessions of 90 minutes each held three times a week.

The teacher started by teaching critical thinking (CT) techniques to both groups: reasoning, classifying, and analyzing. During the first two sessions, the teacher tried to familiarize the learners with CT techniques and taught them how to develop their CT by persuading someone to do something, giving reasons, and analyzing the particular situation. The teacher also told the students about reasoning which is one of the most

important components in CT. Furthermore, she encouraged the learners to learn the different aspects of CT techniques in order to be better writers.

Moreover, for teaching problem-solving techniques to the learners, the teacher asked the students to pose a problem and find a solution for it. Decision-making as another technique for CT was emphasized in the class; hence, the students made decisions and then discussed the probable consequences of every decision. All those mentioned above helped the students to evaluate their own writing, think critically about their work, and consciously watch their process of learning.

In the sessions that followed, after making the students familiar with CT techniques, the teacher/researcher began the treatment on the two different types of tasks, i.e., divergent and convergent tasks.

In the experimental group where convergent tasks were being taught, the teacher divided the class into small groups of three. The students went through the pre-task stage in order to brainstorm about a particular given topic; they were asked to write the relevant words on a sheet of paper. Then, the teacher asked the students randomly to say some of those words and the teacher wrote them on the board. Next, the teacher asked certain questions from the students in order to activate their schematic knowledge; the students subsequently discussed the questions in their groups. The last question was an open-ended one about the topic.

The CT activities used included doing small group cooperation, raising open-ended questions, interacting, evaluating, previewing, comparing and contrasting, and questioning. In the next phase, the teacher helped the students to correct their grammatical mistakes and tried to write some sentences in their group. The teacher asked the students to take their notes home and rewrite their writing and bring the final draft the following session in which the teacher corrected the students' writing and wrote their major mistakes on the board in order to correct them collaboratively.

The second experimental group was divided into small groups and taught through divergent tasks. The teacher informed the learners that they did not need to reach an agreement and found the same outcomes for doing a task. For this purpose, this group received the same instruction for pre-task that the other group did.

The students worked in groups of three during the task phase; each of these group was given the same topic to write about. For instance, they were assigned to write

questions about the topic which had more than one choice or answer such as “*Which one do you prefer: living alone or living with your family? Why?*” The students were asked one by one to provide reasons for their responses; the teacher gave the students further help and tried to correct their major mistakes. The CT activities used for this text included previewing, questioning, contextualizing, annotating, interacting, reflecting, asking open-ended questions, and challenging the students.

In the last phase, the students brought their final drafts to the class and the teacher corrected their writing mistakes. The teacher wrote some of the wrong sentences on the board and the students provided the class with the correct alternatives. At this stage, the students were provided the opportunity to reflect on their own writings and develop a useful phrase for each wrong sentence.

Once the treatment was over in both groups, the writing posttest was administered to them.

3.5. Data Analysis Procedure

Both descriptive and inferential statistics were used in this study. The mean and standard deviation were calculated for all tests with their reliabilities (through Cronbach alpha). Item analysis, including item facility and item discrimination, was conducted for the PET. The inter-rater reliability for the writing papers with two raters was also calculated.

To test the null hypothesis, an independent samples *t*-test was used with all the requirements for this parametric test in place beforehand.

4. Results

4.1. Participant Selection

As noted earlier, the researchers had to start by piloting a sample PET: the mean was 52.87 while the standard deviation stood at 6.27 in this piloting and the reliability of the test scores was 0.89 (estimated through Cronbach alpha). Next, the piloted PET was administered for participant selection. The descriptive statistics of this administration are presented in Table 1 below (the mean is 46.70 and the standard deviation is 24.50).

Table 1
Descriptive Statistics of the PET Administration

	N	Minimum	Maximum	Mean	Std. Deviation
PET Administration	90	33	62	47.86	6.866
Valid N (listwise)	90				

Among the 90 students who took the PET, the researchers selected 60 who scored between one standard deviation above and below the mean. As the students in the language school came from intact groups, the researchers had to make sure that the 30 learners in each group bore no significant difference in terms of the dependent variable (writing skill) at the outset.

To this end, they checked whether the mean scores of the two groups in the writing section of the PET administered earlier bore any significant difference. First, the descriptive statistics of the scores obtained by these 60 learners on the PET writing section were presented (Table 2).

Table 2
Descriptive Statistics of the Writing Scores of the Two Groups on the PET Administration

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Convergent Group Prewriting	30	12	20	15.00	2.623	.534	.427
Divergent Group Prewriting	30	12	20	15.42	2.389	.100	.427
Valid N (listwise)	30						

As shown in the table above, the skewness ratios of both groups (1.25 and 0.23) fall within the acceptable range of ± 1.96 thus signifying that the score distributions in both groups represented normality. Therefore, running an independent samples *t*-test was legitimized.

The results were shown in Table 3 below ($t = -0.643, p = 0.523 > 0.05$) indicated that there was no significant difference between the mean scores of the two groups at the outset; consequently, any probable differences at the end of the treatment could be attributed to the effect of the treatment.

Table 3

Independent Samples t-Test on the Experimental Groups' Mean Scores at the Outset

Levene's Test for		<i>t</i> -test for Equality of Means							
Equality of								95% Confidence	
Variances								Interval of the	
								Difference	
	<i>F</i>	Sig.	<i>t</i>	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.101	.751	-.643	58	.523	-.417	.648	-1.71	.880
Equal variances not assumed			-.643	57.5	.523	-.417	.648	-1.71	.880

4.2. Posttest

The researchers administered the writing posttest (described in detail in the instruments section above) among both experimental groups once the treatment was completed. Table 4 displayed the descriptive statistics for the posttest administration. As can be seen, the mean and the standard deviation of the convergent group were 3.60 and 0.81 while those of the divergent group stood at 3.43 and 0.68, respectively.

Table 4

Descriptive Statistics for the Posttest in Both Groups

Posttest	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Convergent	30	2	5	3.60	.814	-.195		.427
Divergent	30	2	5	3.43	.679	-.001		.427
Valid N (listwise)	60							

4.3. Testing the Hypothesis

To verify the null hypothesis of the study formulated based on the research question, i.e., *there is no significant difference between convergent and divergent tasks in a CT setting of EFL learners' writing*, the researchers conducted another independent samples *t*-test. Prior to this, the normality of the distribution of these scores within each group had to be checked. Going back to Table 4, the skewness ratios of both groups fell within the acceptable range of ± 1.96 (-0.23 and -0.002) thus signifying that the score distributions in both groups represented normality. Therefore, running a *t*-test was legitimized.

Table 5

Independent Samples t-Test on the Mean Scores of Both Experimental Groups

	Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means						
	<i>F</i>	Sig.	<i>t</i>	Df	Sig. (2- tailed)	Mean Differenc e	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.000	1.000	.000	58	1.00	.000	.643	-1.28	1.28
Equal variances not assumed			.000	58.0	1.00	.000	.643	- 1.28	1.28

As Table 5 indicates, with the F value of 0.0001 at the significance level of 1.00 being larger than 0.05, the variances between the two groups were not significantly different. Therefore, the results of the t -test with the assumption of homogeneity of the variances were reported here. The results ($t = 0.0001, p = 1.000 > 0.05$) indicated that there was no significant difference between the mean scores of the two groups at the posttest. It can thus be concluded that the presupposed null hypothesis was not rejected, meaning that convergent and divergent task instruction in a CT setting bore no significantly different impact on the writing of the participants in this study.

5. Discussion

As noted above, there was no significant difference between convergent and divergent tasks on the participants' writing. This result was in contrast with those of quite a number of studies reported in the literature. Ironically, different studies revealed conflicting outcomes. For instance, Marashi and Tahan-Shizari (2015) demonstrated the advantageousness of convergent tasks over divergent tasks in improving learners' writing and also Duff (1986) showed that convergent tasks caused more comprehensible input while divergent tasks led to more output. On the other hand, Nosratinia and Kounani (2016) concluded that divergent tasks proved more effective than convergent tasks in improving the participants' writing regardless of their personality variability (extroverts and introverts).

Interestingly, certain studies which focused on examining the comparative effects of divergent and convergent tasks on other language skills produced results that were different from those of the present research. For instance, Azimi, Behjat, and Kargar (2016) concluded that convergent tasks were more effective than divergent ones in improving learners' reading comprehension while Haji Pour Nejad and Shokrpour (2013) came up with the differences between learners who underwent divergent and convergent tasks in their responding to different types of reading comprehension questions. As for speaking, Shoarnaghavi et al. (2014) demonstrated that divergent tasks had a significant effect on learners' oral accuracy.

In the course of the instruction within the two groups in the present study, it was clearly observed that both convergent and divergent tasks had positive outcomes for learners: for instance, a relaxed learning situation that allowed the more silent students to

overcome their fear and thus interact with each other. Moreover, the learners in both groups seemed to be motivated to complete the tasks since they appeared meaningful to them and they were provided with the opportunity to actively participate in the process of completing the tasks. Naturally, such pretexts engendered further motivation among the learners.

The researchers also observed that in both groups, the learners enjoyed themselves via sharing ideas and becoming more acquainted with their peers. Such an intimate context in both groups led to motivating the students to have more participation in the tasks and activities of the classroom.

The result of this study depicted no significant difference between convergent and divergent tasks on EFL learners' writing may perhaps indicate that it was not necessarily either of the two task types which present an advantage compared to the other in improving learners' writing ability but the necessity of employing a CT setting. The above was corroborated by Marashi and Noochirwani Tehran (2011) where they demonstrated that TBLT and content-based instruction in a CT setting bore no significant difference on learners' reading and writing, respectively.

What happened in this study – detailed in the procedure section – was that two different task types were used in two different groups; yet, the same procedure of CT initiatives was employed as identically as possible in the two groups. Hence, the only possible explanation as far as the researchers are concerned (bearing in mind that both groups resembled homogeneity in terms of their writing ability) is that similar CT strategies and techniques “cancelled out the differences between the two groups, thus resulting in similar outcomes” (Marashi and Noochirwani Tehran, 2011, p. 35). In other words, the CT techniques and activities used in this study “perhaps served more of an independent variable” in contrast with the usage of convergent and divergent tasks.

The literature is overwhelmed by studies demonstrating the effectiveness of CT compared to other methods when it comes to improving EFL learners' writing and also detailed elaborations of why and how CT serves influential in this regard. For instance, Khabiri and Firooz (2012) concluded that CT instruction is significantly more effective than cooperative learning. Gorjian, Pazhakh, and Parang (2012) also concluded likewise, not to mention other studies delineating the positive impact of critical discourse analysis based instruction – which is rooted in CT pedagogy – on different writing genres (Marashi

& Yavarzadeh, 2014) and aspects (Marashi & Chizari, 2016). Needless to say, CT and writing have been proven to be significantly correlated (Marashi & Jodeiri, 2006).

The ultimate finding of this research, again and again, highlights the importance and effectiveness of CT in the ELT environment, in that CT plays a perhaps more significant role in instruction compared to other factors including task typology.

6. Conclusion

When it comes to teaching writing, EFL teachers often note the learners' lack of participation and motivation as major problems in the classroom. Many EFL learners feel lost when they intend to start their writing since they perhaps lack the adequate input required to help them create novel ideas and sufficient motivation to participate in the learning process actively. To this end, using convergent and divergent tasks in a CT setting can facilitate the procedure by boosting learners' motivation and participation.

Accordingly, syllabus designers and materials developers may wish to incorporate appropriate tasks in the teaching materials they produce. They could include divergent/convergent tasks as essential components for classroom teaching and for designing educational activities. Needless to say, congruent teachers' guidebooks are required for such materials, thereby facilitating the work of teachers in the ELT classroom.

Such a mindset would, in turn, enable teachers to more freely choose certain tasks based on the learners' interests. Indisputably, all this needs a universal emphasis on the creativity of the learners in completing the convergent/divergent tasks presented in the materials. And as the results of this study showed, the CT component of the experimentation was arguably more influential than the task dichotomy itself; hence, syllabus designers and materials developers may wish to consider incorporating CT activities within task-based materials to further consolidate the learners' development of language skills.

In the process of conducting this study, the researchers confronted a number of limitations; hence, they suggest the following to other researchers who may have a desire to extend this study. Firstly, the gender of the participants was not controlled in this study as all the learners were females. Another study may be replicated with male participants in order to remove the possible impact of gender on the results. Secondly, learners' individual factors can be examined from different aspects and dimensions; it is thus suggested to

investigate the interaction of divergent and convergent task types and other personality and individual factors. In addition, this research focused on the EFL learners' writing ability in general; accordingly, other studies can delve more deeply into the different sub-constructs of writing ability (e.g., complexity, accuracy, and fluency) and/or different writing genres. Last but not least, other studies may seek to explore the impact of divergent and convergent tasks through using CT techniques on other language skills and components.

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