



ORIGINAL RESEARCH PAPER

Investigating the Impact of Systemic-theoretical Instruction on English Passive Structure Formation: Revisit of Vygotskian Concept-Formation Stance

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This study investigated the teaching and learning of English passive structures using tool-oriented concepts, specifically examining the impact of Systemic-Theoretical Instruction (STI) on Iranian EFL learners. The Oxford Placement Test (OPT) was administered to 120 EFL learners in Isfahan, Iran, and, based on the scores, the participants were allocated to control and experimental groups, each comprising 60 learners. Concept-Based Instruction (CBI) principles were taught to the experimental group twice a week for 12 weeks, after which a posttest on English passive structure was administered. The posttest had the same 40-item content as the pretest, and an independent-samples *t* test revealed a significant difference between the experimental and control groups, with the experimental group performing significantly better, $t(118) = -3.412$, $p = .001$. Theoretical and pedagogical implications are presented. The study is limited by convenience sampling from selected institutes in one city, the use of the same test form at pretest and posttest, and the absence of an adjusted pretest-posttest analysis. Practically, using orientation tools in a top-down manner helps learners reinforce theoretical recognition, access experiential knowledge, and extend its use to new contexts, while focusing on conceptual categories broadens their understanding of related concepts in passive structures. Pedagogically, the orienting stage allows learners to direct their learning based on conceptual categories, and the same categories provide a consistent teaching-learning sequence, elevating theoretical awareness, understanding, and control of English passive structures.

Keywords: Concept based Instruction (CBI), Systemic-theoretical Instruction (STI), English Passive Structure.

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Introduction

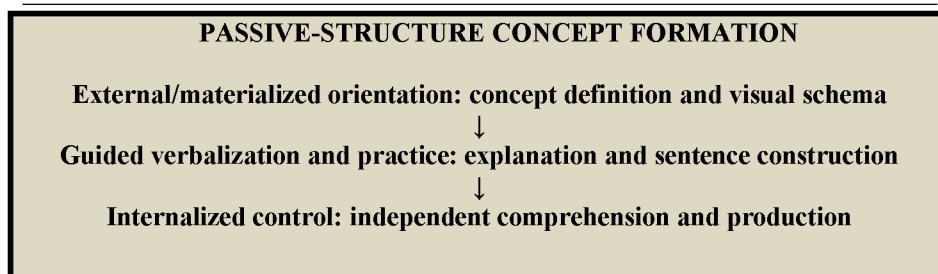
Since the introduction of conceptual metaphor theory by Johnson & Lakoff (1980), numerous studies in the realm of psycholinguistics and cognitive linguistics have addressed a variety of aspects, including discourse expressions, comparable conceptual formations across languages, the structure of conceptual formation, and specific patterns of language (e.g., Kövecses, 2006; Johnson, 1999). The application of concept-based formation serves as an important development in L2 instruction, as it provides a robust framework for explaining linguistic and cultural variations to second language learners. This is the point at which linguistic and cultural variations can be explained and elaborated to second language learners; therefore, they may be capable of comprehending and acquiring varied linguistic manifestations. Littlemore and Low (2006) indicated that figurative language promotes language skills as well as communicative competence. In the same vein, some researchers believe that teaching L2 metaphors may lead to a deeper acquisition of a language and its governing culture (Holme, 2004; Thorne, 2000).

However, very few studies have considered teaching L2 conceptual metaphors. The lack of empirical studies concerning the instruction of metaphorical expressions in a second language may be due to three reasons. First, choosing the proper conceptual formation as a teaching unit relies on cultural awareness and linguistic knowledge in the target language as well as in the learner's first language. Indeed, language educators and researchers should recognize and analyze similarities and differences between cultures and languages. Then, they must decide on the extent of teaching concept formation. Second, traditional teaching procedures, with heavy reliance on exercises, rote memorization, and inconsistent explanation of grammatical patterns, fail to make learners aware of the complexity of each conceptual category. Third, explaining appropriate criteria for assessing and evaluating learners' general competence as well as conceptual formation in a second language may be difficult.

Piotr Gal'perin (1969) proposed concept-based instruction (CBI) in educational settings. The core principle of CBI suggests that properly organized instruction can promote conceptual development, but only if it provides high-quality cognitive tools and organized guidance. CBI holds that theoretical concepts should be introduced early in instruction so that learners can develop conceptual knowledge (Davydov, 1988; Gal'perin, 1989, 1992). In CBI, teaching related theoretical concepts aims to promote conceptual understanding and to use that understanding as a framework for guided practice. According to Gal'perin (1992),

this process includes the introduction and explanation of a concept, its materialization in a visual schema, learners' verbal articulation of their understanding, and guided practice in communicative tasks.

Gal'perin (1992) stated that instructors' guidance is more influential when it is combined with symbolic representations. Figure 1 presents the process used for the passive structure.

**Figure 1***1) Passive-Structure Concept Formation.*

Learning the English passive structure is one of the main problems faced by language learners. Since the passive construction involves grammatical form, semantic roles, and discourse function, a coherent method should be used to reduce possible misunderstandings. Acquiring the passive structure contributes to the formation of a coherent concept among English language learners. In fact, beginning learners are usually reluctant to use passive forms in their daily interactions. Therefore, efficient methods such as CBI should be used to teach and consolidate passive-structure formation for EFL learners.

The teaching method in this research was chosen because the passive construction requires learners to understand the relationship among the agent, patient, process, auxiliary, and past participle. Current curricula and teaching methods often depend heavily on grammatical rules and translation. Although the passive structure occurs in many languages, neither isolated grammatical rules nor word-for-word translation can fully explain its common features and cross-linguistic distinctions.

This research uses STI and CBI to teach the English passive structure as an integrated form-meaning system. In traditional methods, the passive structure is primarily taught through grammatical rules, whereas in CBI the possibilities of concept formation are applied in educational settings. This approach helps learners develop a more complete orientation toward passive-structure formation.

Therefore, this study was designed to examine the teaching and learning of the English passive structure for internalization through tool-oriented, concept-based instruction. It was hoped that presenting the passive structure to Persian-speaking learners in a well-organized and coherent manner would lead to more effective learning. For this purpose, the passive construction was analyzed from a linguistic perspective and presented in an accessible format through CBI. In this article, STI refers to the overarching instructional framework, while CBI refers to its classroom implementation; conceptual metaphor is treated only as a supporting representational resource. The following research questions were raised:

Q1. Does teaching the passive structure through Systemic-Theoretical Instruction result in a significant difference between the experimental and control groups' posttest performance?

Q2. What is the relationship between pretest and posttest scores within the elementary and intermediate proficiency groups?

Q3. Do male and female EFL learners differ in their overall posttest performance on the English passive structure?

Review of the Related Literature

The development of cultural-historical theory by Vygotsky (1978) resulted in the emergence of sociocultural educational programs in Russia (e.g., Gal'perin, 1969, 1992; Talyzina, 1981) and elsewhere (Kozulin et al., 2003). Research on foreign-language learning based on Vygotsky's theory has been developed by Lantolf and other researchers (Frawley & Lantolf, 1985; Thorne, 2000; De Costa, 2007; Lantolf & Poehner, 2008), including studies of STI and CBI (Ferreira & Lantolf, 2008; Negueruela, 2003).

Negueruela was one of the first researchers to apply Vygotsky's ideas in L2 education. In Negueruela's project (2003), Gal'perin's step-by-step method was also used in six stages. Negueruela (2003) developed instructional procedures following three main principles of CBI: identifying a coherent learning unit, materializing the learning unit using specific assistance tools, and using verbalization to internalize fundamental issues. These procedures connected CBI to L2 learning. He believed that this addresses gaps in educational procedures and research methodology in the realm of second language learning.

Some researchers have used CBI in their studies. One of the researchers in this field is Negueruela (2003). By analyzing discourse data, he observed improvement in all students after CBI, particularly in writing. Even if learners can define a particular point in grammar, this does not necessarily indicate control of performance. Based on Negueruela's findings, participants' conceptual definitions did not always show the functional use of syntactic characteristics.

In another study, Lapkin, Swain, and Knouzi (2008) investigated the development of the grammatical concept of voice in French through CBI and learner verbalization. Six university students from an intermediate French class participated in the pilot study. Data were collected through a pretest, instructional activities, self-explanation, a posttest, and a delayed posttest. The results showed that even a relatively short period of CBI was beneficial for some learners, particularly when they were able to verbalize the grammatical concept and use language as a tool for self-regulation.

Serrano-López (2003) concentrated on Gal'perin's materialization phase, which involved building theoretical models of teaching and learning. Following Talyzina (1981), the study noted differences between material and materialized objects. In the first case, physical manipulation of the given object is possible. In the second, graphs, charts, and other tools are applied to materialize the given object. Three-dimensional clay models were used to highlight learners' theoretical knowledge objectively. The primary purpose of the models was to conceptualize Spanish spatial meanings that differed from those in the learners' first language. The pretest, posttest, and delayed-posttest results showed that CBI and three-dimensional clay models supported understanding of these meanings and retention of the learned concepts.

Ferreira and Lantolf (2008) used CBI and modeling to investigate meaning making, writing improvement, and theoretical thinking. To do this, they applied a

genre-based approach to a composition class. Spanish, Chinese, Vietnamese, and Korean participants studied English. A CBI approach was applied to conceptual processes using Davydov's (1988) method and systemic functional linguistics (SFL). Davydov's approach, movement from the abstract to the concrete, is used for teaching cognitive concepts. Based on it, learners grasp a subject using systematic conceptual knowledge and then try to internalize and process the given knowledge in specific contexts.

The comparison of the two texts written before and after the course and their evaluation by different readers indicated the development of theory-based thinking. Ferreira and Lantolf (2008), however, did not find uniformly positive results. Karpov (2003) showed that second- to fourth-grade students receiving systemic-theoretical instruction outperformed students relying on traditional methods. Students using CBI not only performed better in problem solving but also found principled solutions to specific problems.

Methodology

Participants

The OPT was administered to 120 Iranian EFL learners, aged 22 to 26, who were studying in five language institutes in Isfahan, Iran. The participants were recruited from intact classes through convenience sampling. On the basis of the OPT results, they were allocated to a control group and an experimental group, with 60 learners in each group.

Each instructional group included 30 male and 30 female learners and 30 elementary and 30 intermediate learners. Thus, the overall sample comprised 60 male and 60 female learners, as well as 60 elementary and 60 intermediate learners. Recruitment was convenience-based, whereas allocation was organized after stratification by OPT level and gender.

Instruments

Three instruments were used in the study: the Oxford Placement Test (OPT), an English passive-structure pretest, and an English passive-structure posttest. To assess participants' language proficiency, the grammar section of the OPT, including 60 fill-in-the-blank and multiple-choice items, was administered. A researcher-made 40-item test was then used to assess learners' comprehension, production, and error recognition concerning passive structures. The test consisted of 16 multiple-choice comprehension items, 12 fill-in-the-blank production items, and 12 error-recognition items. The posttest used the same three-part, 40-item structure and the same scoring procedure as the pretest. Each correct answer received one point; therefore, total scores ranged from 0 to 40.

Data Collection Procedure

The present study was conducted in five English language institutes in Isfahan. An informed-consent form was presented to participants to ensure voluntary participation. The experimental treatment, based on the principles of CBI, was administered twice a week for 12 consecutive weeks during the institutes' regular class sessions. The experimental group received concept-based explanations, visual orienting models, guided verbalization, and practice in producing and recognizing passive structures. The control group received conventional instruction based on rule

explanation, textbook examples, and exercises. Before the main study, the researcher-made test was piloted with 30 language learners who had characteristics similar to those of the main participants. Three instructors with five years of experience taught the classes. Briefing sessions were held before, during, and after the treatment, and the researcher reviewed the instructional process and provided guidance to the instructors. At the end of the treatment, the English passive-structure posttest, with the same content as the pretest, was administered, and the results were compared and analyzed.

Data Analysis

Descriptive statistics were calculated for all reported comparisons. Independent-samples t tests were used for the experimental-control and gender comparisons, and Pearson's correlation coefficient was used to examine the association between pretest and posttest scores within each proficiency level.

Table 1

2) Independent-Samples t Test Results

GROUP	N	Mean	Std. Deviation	Std. Error Mean
Control Groups	60	19.4667	4.11062	.53068
Experimental Groups	60	22.0833	4.28751	.55352

Analysis

Test result

Additional statistics

Levene's test

F = .095, p = .759

Equal variances assumed

Independent-samples t(118) = -3.412, p = .001, Mean difference = -2.61667; SE = .76681; 95% CI [-4.13516, -1.09817]

Table 1 shows that the mean score of the CBI-based experimental group was 22.08 (SD = 4.29), whereas the mean score of the control group was 19.47 (SD = 4.11). The independent-samples t test revealed a significant difference between the two groups, $t(118) = -3.412$, $p = .001$, indicating that the experimental group performed better on the posttest. Pearson's correlation coefficient was then used to explore the relationship between the pretest and posttest scores of the elementary learners. The results are presented in Table 2.

Table 2

3) Pearson Correlation Coefficient for the Elementary Group

		Pretest	Posttest
Pretest	Pearson Correlation	1	.111
	Sig. (2-tailed)		.398
	N	60	60
Posttest	Pearson Correlation	.111	1
	Sig. (2-tailed)	.398	
	N	60	60

No significant correlation was found between the pretest and posttest scores of elementary learners, $r = .111$, $p = .398$. Thus, higher pretest scores were not systematically associated with higher posttest scores in this subgroup. The

correlation between the pretest and posttest scores of intermediate learners is presented in Table 3.

Table 3

4) *Pearson Correlation Coefficient for the Intermediate Group*

		Pretest	Posttest
Pretest	Pearson Correlation	1	.294*
	Sig. (2-tailed)		.023
	N	60	60
Posttest	Pearson Correlation	.294*	1
	Sig. (2-tailed)	.023	
	N	60	60

* Correlation is significant at the 0.05 level (2-tailed).

Table 3 shows a weak positive and statistically significant correlation between the intermediate learners' pretest and posttest scores, $r = .294$, $p = .023$. This coefficient should not be described as highly positive. These within-level correlations do not establish that intermediate learners improved more than elementary learners; such a conclusion would require a direct comparison of gain scores or an interaction analysis. The overall posttest scores of male and female learners are presented in Table 4.

Table 4

5) *Male and Female Posttest Results*

Group	N	Mean	SD	SE
Male	60	22.1167	2.97499	0.38407
Female	60	19.4333	5.12345	0.66143

Welch t test: $t(94.72) = 3.508$; $p = .001$; mean difference = 2.68

The male group obtained a higher posttest mean ($M = 22.12$, $SD = 2.97$) than the female group ($M = 19.43$, $SD = 5.12$). Because the group variances differed substantially, Welch's independent-samples t test was used, $t(94.72) = 3.508$, $p = .001$. This unadjusted comparison should be interpreted cautiously because instructional group, proficiency level, instructor, and institute were not controlled simultaneously.

Discussion

The first question in this study investigated the impact of teaching the passive structure through conceptual education (Systemic-Theoretical Instruction). Results from the independent-samples t test suggested that the control and experimental groups exhibited a significant difference in posttest performance, supporting the usefulness of CBI-based teaching for learning English passive structures in this sample. In this regard, Negueruela (2003) stated that this can occur when learners understand English passives in terms of their conceptual meaning rather than restricting their knowledge to structural points in a textbook. He also argued that, because CBI is a regular and structured instructional method, it can support the development of learners' theoretical conceptual knowledge.

In addition, as Vygotsky (1987) stated, scientific concepts develop in relation to everyday concepts. Familiarity with everyday concepts through spontaneous use does not necessarily mean that learners are consciously aware of their meanings.

The current results are consistent with the studies of Negueruela (2003) and Lapkin, Swain, and Knouzi (2008). Negueruela found that, after the implementation of CBI, learners' definitions became more closely related to semantic rules and conceptual understanding. This finding supports the role of CBI in developing learners' control of grammatical knowledge.

Lapkin, Swain, and Knouzi (2008) also showed that CBI combined with learner verbalization can be effective for some learners. They noted that not all learners can express grammatical concepts verbally or reach the same level of conceptual understanding. The present findings are also broadly consistent with Serrano-López (2003) and Poehner (2008), who reported benefits of mediated and concept-oriented instruction.

In relation to the second research question, the elementary group showed no significant association between pretest and posttest scores, whereas the intermediate group showed a weak positive association. These correlations describe the relationship between scores within each proficiency group; they do not test whether proficiency level caused different amounts of improvement.

Accordingly, the available analysis does not support the original claim that intermediate learners performed significantly better than elementary learners. A direct test of gain scores or a condition-by-proficiency interaction would be required to make that conclusion. Nevertheless, the positive association observed in the intermediate group may indicate greater continuity between prior knowledge and later performance, a possibility that should be examined in future research.

The third research question focused on the overall difference in posttest scores by gender. The unadjusted comparison showed a higher mean for male learners. Gal'perin's (1989) and Vygotsky's (1978) accounts of mediation, material practice, and verbalization explain how conceptual learning may develop, but they do not predict male superiority. Because instructional condition, proficiency level, instructor, institute, and possible cultural or social factors were not controlled simultaneously, the observed difference cannot be attributed to gender alone. This finding should therefore be treated as exploratory and requires replication in a design that tests the interaction between gender and instructional condition.

Conclusion

The findings of the study indicate that teaching English passive structures through a concept-based orientation can support learning in several ways. First, pedagogically, in the orienting stage, learners can direct their learning by relying on the basic characteristics expressed by the conceptual categories. The same categories used for teaching provide a consistent teaching-learning sequence, thereby elevating theoretical awareness, understanding, and control of English passive structures. By applying orientation tools in a top-down manner, learners can reinforce theoretical recognition in practice, access experiential knowledge, and extend its use to new contexts. By focusing on conceptual categories, learners can broaden their knowledge of important related concepts in passive structures.

These conclusions should be interpreted within the limits of the study. Participants were recruited through convenience sampling from five institutes in one city; the same 40-item test form was used at pretest and posttest; and group-level pretest information required for ANCOVA or a mixed pretest-posttest analysis was not available in the retained output. Numerical evidence for the content validity and internal consistency of the researcher-made test, exact coursebook titles, session duration, and a formal implementation-fidelity index were also not available in the archived manuscript. Future studies should document these elements, use parallel test forms, and test condition-by-proficiency and condition-by-gender interactions.

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بررسی تأثیر آموزش نظری-سیستمی بر شکل‌گیری ساختار مجهول در زبان انگلیسی: بازنگری در رویکرد ویگوتسکی به مفهوم‌سازی

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پژوهش حاضر با هدف بررسی آموزش و یادگیری ساختار مجهول زبان انگلیسی در چارچوب آموزش نظری-سیستمی و آموزش مفهوم‌محور انجام شد. آزمون تعیین سطح آکسفورد برای ۱۲۰ زبان‌آموز ایرانی زبان انگلیسی در پنج مؤسسه آموزش زبان در اصفهان اجرا شد و شرکت‌کنندگان بر اساس نمرات آزمون در دو گروه آزمایش و گواه، هر یک شامل ۶۰ نفر، قرار گرفتند. گروه آزمایش به مدت ۱۲ هفته و هفته‌ای دو جلسه آموزش مفهوم‌محور دریافت کرد. پس از پایان آموزش، آزمون محقق‌ساخته ۴۰ سؤالی ساختار مجهول که از نظر محتوا با پیش‌آزمون یکسان بود، به‌عنوان پس‌آزمون اجرا شد. نتایج آزمون تی مستقل نشان داد میانگین پس‌آزمون گروه آزمایش به‌طور معناداری از گروه گواه بیشتر بود. همبستگی پیش‌آزمون و پس‌آزمون در سطح مقدماتی معنادار نبود و در سطح متوسط رابطه‌ای مثبت اما ضعیف مشاهده شد. مقایسه تعدیل‌نشده جنسیتی نیز میانگین بالاتری را برای مردان نشان داد؛ با این حال، به دلیل کنترل‌نشدن هم‌زمان گروه آموزشی، سطح زبان، مدرس و مؤسسه، این نتیجه باید با احتیاط تفسیر شود. یافته‌ها از ارزش آموزشی ابزارهای جهت‌دهی، کلامی‌سازی و تمرین هدایت‌شده در آموزش ساختار مجهول حمایت می‌کنند. تعمیم نتایج به دلیل نمونه‌گیری در دسترس از پنج مؤسسه در یک شهر، استفاده از فرم یکسان آزمون در دو مرحله و نبود تحلیل تعدیل‌شده پیش‌آزمون-پس‌آزمون محدود است.

واژه‌های کلیدی: آموزش مفهوم‌محور، آموزش نظری-سیستمی، ساختار مجهول در زبان انگلیسی.

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