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The Productive Failure Paradox in EFL: Can Strategic Confusion Outperform Immediate Explanation in Language Learning?

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Abstract. This article examines the impact of strategic confusion and initial failure on English as a Foreign Language (EFL) learning. It explores the roles of independent problem-solving, cognitive conflict, and explanatory feedback in language acquisition. The study emphasizes the importance of purposeful learning challenges followed by timely instruction to promote deeper understanding and knowledge transfer.
Keywords: productive failure, EFL teaching, strategic confusion, cognitive conflict, feedback, language acquisition.

Annotatsiya. Mazkur maqolada ingliz tilini chet tili sifatida o‘qitishda strategik chalkashlik va dastlabki muvaffaqiyatsizlikning ta’lim samaradorligiga ta’siri tahlil qilinadi. Muammoni mustaqil hal qilish, kognitiv ziddiyat va izohli teskari aloqaning til o‘rganishdagi o‘rni yoritiladi. Samarali ta’lim uchun qiyinchilikni maqsadli tashkil etish va o‘z vaqtida tushuntirish berish zarurligi asoslanadi.
Kalit so‘zlar: samarali muvaffaqiyatsizlik, ingliz tilini o‘qitish, strategik chalkashlik, kognitiv ziddiyat, teskari aloqa, til o‘rganish.

Аннотация. В статье анализируется влияние стратегической неопределённости и первоначальных неудач на эффективность обучения английскому языку как иностранному. Рассматриваются роль самостоятельного решения задач, когнитивного конфликта и объясняющей обратной связи в процессе усвоения языка. Обосновывается необходимость целенаправленного создания учебных трудностей с последующим разъяснением материала.
Ключевые слова: продуктивная неудача, преподавание английского языка, стратегическая неопределённость, когнитивный конфликт, обратная связь, изучение языка.

Introduction

English language teaching has traditionally placed considerable emphasis on the systematic presentation of grammatical rules, vocabulary, pronunciation patterns, and communicative functions. In many classrooms, the teacher explains a target structure, provides examples, and then asks learners to complete exercises designed to consolidate the explanation. This approach offers clarity, reduces immediate uncertainty, and can be particularly useful when learners encounter unfamiliar linguistic forms. Nevertheless, successful performance immediately after instruction does not necessarily demonstrate durable learning or the ability to apply knowledge in unfamiliar communicative situations.

A learner may correctly use the present perfect after memorizing a grammatical formula yet struggle to distinguish it from the past simple during spontaneous conversation. Similarly, a student may reproduce a model paragraph accurately but fail to organize an original academic argument. These situations reveal a distinction between performing a recently demonstrated procedure and developing flexible linguistic knowledge. The productive failure perspective challenges the assumption that explanation must always precede meaningful engagement with a learning problem. Kapur's foundational study introduced learners to complex problem-solving activities before formal instruction and demonstrated that initial unsuccessful attempts could contribute to subsequent learning under appropriately designed conditions. The essential

proposition is not that instruction is unnecessary, but that the timing of instruction may influence how learners process and integrate an explanation.

In EFL classrooms, this proposition raises a significant pedagogical question: might learners develop a deeper understanding of English when they first attempt to solve a linguistic problem, encounter the limits of their existing knowledge, and only then receive an explanation that addresses their difficulties? The question is particularly relevant because language learning involves more than the accumulation of definitions and rules. Learners must identify linguistic patterns, compare alternative forms, interpret meaning in context, retrieve vocabulary under time constraints, and adapt their language to different communicative purposes. These activities require learners to coordinate knowledge, attention, memory, and contextual interpretation.

Strategic confusion may create opportunities for this coordination. When a learner is asked to explain why two apparently similar sentences communicate different meanings, the absence of an immediate answer may prompt comparison, hypothesis testing, and closer attention to linguistic evidence. However, confusion can also become counterproductive when the learner lacks the necessary background knowledge or receives insufficient support. The central argument of this article is therefore conditional: strategic confusion can outperform immediate explanation when it activates relevant prior knowledge, encourages meaningful linguistic reasoning, and is followed by timely, explanatory instruction. It should not be assumed to outperform explicit instruction in every EFL context.

Productive failure refers to an instructional design in which learners engage in problem-solving before receiving direct instruction on the target concept. Initial attempts may be incomplete, inefficient, or incorrect, but they can expose learners' existing conceptions and create a basis for interpreting subsequent explanations.

Consider the following sentences: “I lived in London for three years” and “I have lived in London for three years.” Rather than immediately explaining the difference between the past simple and present perfect, a teacher might ask learners to infer the likely circumstances in which each sentence would be appropriate. Learners may propose competing interpretations, examine contextual clues, and discover that the second sentence commonly presents a situation as continuing into the present, whereas the first typically locates the experience in a completed past period. An integrative review of research on learning difficulties distinguishes potentially beneficial challenges from difficulties that interfere with learning. It discusses productive failure, desirable difficulties, cognitive disequilibrium, and other mechanisms through which struggle may contribute to understanding. The review also emphasizes that the benefits depend on the conditions under which difficulty occurs.

Bjork and Bjork's concept of desirable difficulties provides a complementary explanation. Certain learning activities may make initial performance more demanding while improving later retention or transfer. Examples include distributed practice, retrieval practice, and varied practice conditions. However, difficulty itself is not evidence of learning. Research examining desirable-difficulty effects has identified conditions in which additional difficulty fails to improve outcomes, particularly when tasks impose excessive demands on working memory. This qualification matters in EFL because linguistic tasks differ substantially in complexity. Inferring the meaning of a familiar word from a short paragraph may be manageable without immediate explanation. Independently reconstructing a complex conditional structure while interpreting unfamiliar vocabulary and processing a lengthy text may overwhelm a beginner. The pedagogical objective should therefore be to introduce difficulty that encourages relevant processing without making the task inaccessible.

Productive failure cannot be evaluated independently of what happens after the initial struggle. Feedback determines whether learners can identify the limits of their hypotheses and develop more accurate representations. Wisniewski, Zierer, and Hattie (2020) synthesized 435

studies, 994 effect sizes, and data involving more than 61,000 participants. Their meta-analysis reported an overall feedback effect of d = 0.48, conventionally interpreted as a medium effect, while emphasizing substantial variation across feedback types and outcomes. This finding supports the importance of feedback in learning, but it does not demonstrate that delaying explanation is always better than providing it immediately. Rather, it indicates that feedback quality and informational content matter. In language teaching, feedback that merely marks an answer incorrect may leave the learner uncertain about the source of the error. Explanatory feedback can identify the relevant distinction, connect the rule to the learner's attempt, and demonstrate how the knowledge applies to a new example.

For example, if a student writes “She suggested me to study harder,” a teacher might explain that standard English normally uses “suggested that I study harder” or “suggested studying harder,” depending on the intended meaning. The explanation becomes especially relevant if the learner has already attempted to express the idea and can compare the alternatives with the original sentence. The productive sequence is therefore not confusion instead of teaching. It is an attempt, an identifiable problem, an explanation that resolves the problem, and a subsequent opportunity to apply the principle.

Methodology

This article adopts an integrative literature-review approach combined with conceptual analysis. Its purpose is to examine the theoretical plausibility of productive failure in EFL, synthesize quantitative findings from related educational research, and formulate a framework that can be tested in language classrooms.

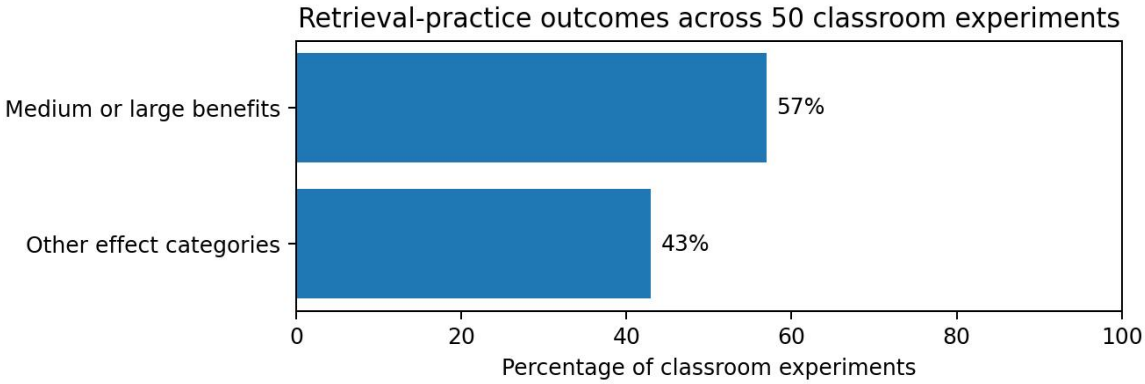
Results and discussion

First, productive failure has an established theoretical and experimental foundation, but the size and consistency of its benefits depend on instructional design. Darabi et al. (2018) found only 12 studies suitable for meta-analysis from an initial pool of 187 publications. This is an important limitation: promising results should not be confused with a large, uniform body of directly comparable experiments. Second, feedback is a major component of effective learning. The d = 0.48 estimate reported by Wisniewski et al. (2020) represents an aggregate effect across diverse educational contexts and feedback conditions. It is not an estimate of the effect of productive failure itself.

Third, retrieval practice has substantial support in applied classroom research. Agarwal et al. (2021) reported that 57% of the 50 experiments in their review produced medium or large benefits. Their review included different educational levels, subject areas, assessment formats, and feedback arrangements. It also found that only 6% of the experiments were conducted in non-WEIRD countries, limiting the geographical representativeness of the evidence for contexts such as Uzbekistan. Taken together, these findings justify investigating strategic confusion in EFL, but they do not establish that productive failure is universally superior to explicit instruction.

Quantitative evidence visualization

Figure 1. Retrieval-practice outcomes across 50 classroom experiments



The productive failure paradox becomes clearer when initial performance is distinguished from subsequent learning. Immediate explanation can make a task easier because learners receive the information needed to solve it. This is an advantage when accuracy, safety, or efficient acquisition of a basic procedure is the primary objective. However, learners may rely heavily on the presented model without independently identifying the conceptual distinction that makes the solution appropriate. Problem-solving before explanation creates a different learning environment. Learners must activate relevant knowledge, generate possible answers, evaluate alternatives, and identify gaps in their understanding. When the explanation follows, the information can be connected to specific hypotheses and errors generated during the task.

The critical difference is the cognitive function of the explanation. In the first sequence, explanation provides the starting structure for the task. In the second, explanation helps reorganize knowledge activated during the task. This distinction may be particularly important for advanced grammar, academic writing, and reading comprehension, where learners must choose between competing interpretations rather than simply recall a definition. Nevertheless, it would be incorrect to conclude that the productive-failure sequence necessarily produces better learning in every circumstance. Its advantage must be demonstrated through outcomes measured after the initial instructional phase, particularly delayed retention and transfer to unfamiliar language tasks.

Explanation-first instruction	Productive-failure instruction
Teacher explains the rule	Learner attempts a meaningful problem
Learner applies the model	Hypotheses and knowledge gaps emerge
Immediate accuracy is assessed	Teacher provides targeted explanation
Independent transfer is tested	Learner revises, applies, and completes transfer tasks

The usefulness of strategic confusion differs across language-learning domains. A technique that supports grammatical reasoning may be less appropriate for introducing the pronunciation of an unfamiliar sound or establishing a basic vocabulary foundation.

Table 2. Proposed applications of productive failure in EFL

Domain	Initial challenge	Follow-up instruction	Intended outcome
Grammar	Infer a tense distinction from contrasting sentences	Explain form, meaning, and contextual use	More accurate selection of grammatical forms
Vocabulary	Infer word meaning from a contextual paragraph	Clarify meaning, collocations, and usage restrictions	Improved contextual interpretation and retention
Academic	Draft a short argument	Analyze organization,	Better transfer of

writing	before examining a model	cohesion, evidence, and register	writing principles
Reading	Interpret an ambiguous passage and justify alternatives	Explain textual evidence and inference strategies	More defensible interpretations
Speaking	Attempt a communicative task with an information gap	Provide selective corrective feedback and model alternatives	Greater communicative flexibility
Listening	Predict meaning before hearing a short recording	Compare predictions with the recording and explain missed cues	Improved contextual and acoustic processing

In grammar teaching, productive failure may be most useful when the target structure has recognizable patterns and learners possess enough prior knowledge to compare examples. Asking learners to distinguish between "used to do" and "be used to doing" may generate meaningful hypotheses when the examples are contextualized and the relevant verb forms are familiar.

Vocabulary instruction offers another opportunity. Learners can first infer the meaning of a word from a short text, explain their reasoning, and then compare their interpretation with a dictionary definition and authentic usage examples. This sequence encourages contextual processing while allowing the teacher to correct inaccurate inferences. Academic writing may be especially suitable because learners frequently struggle to organize ideas before they understand the conventions of a particular genre. A first attempt at writing an introduction can reveal misunderstandings about the research problem, literature gap, and purpose statement. Subsequent analysis of a well-structured example can then address specific weaknesses. Speaking and listening, however, require more careful scaffolding. Excessive uncertainty during oral interaction can consume attention needed for comprehension and fluent production. Productive failure should therefore involve manageable communicative challenges rather than withholding essential vocabulary or leaving learners unable to participate.

The potential advantage of productive failure can be explained through several interacting mechanisms. These mechanisms are theoretically related, but they should not be treated as interchangeable or as proof that every instance of confusion improves learning. Activation of prior knowledge. When learners attempt a task before receiving an explanation, they retrieve existing linguistic knowledge. This can expose both useful knowledge and misconceptions. A subsequent explanation may become more meaningful because learners can compare it with their own attempted solutions. Hypothesis generation and comparison. Learners may construct alternative explanations for a grammatical pattern, word meaning, or discourse feature. Comparing alternatives encourages attention to the relationship between linguistic form and communicative meaning rather than memorization of isolated rules.

Metacognitive awareness. An unsuccessful attempt can reveal the limits of a learner's understanding. This awareness may help learners identify what they need to learn, although failure does not automatically produce accurate self-assessment. Elaborative processing. Explaining why a particular answer appears appropriate requires learners to connect examples, rules, and contextual meanings. Such processing may support conceptual understanding beyond the immediate task. Feedback-guided revision. Once learners have generated an initial interpretation, corrective feedback can identify the distinction they overlooked. Revision creates an opportunity to replace an inaccurate hypothesis with a more defensible explanation.

Figure 3. Proposed mechanism of productive failure in EFL

Stage	Proposed mechanism

Prior linguistic knowledge	Existing grammar, vocabulary, and communicative experience
Purposeful problem-solving	Retrieval, comparison, and hypothesis generation
Productive cognitive conflict	Recognition of a knowledge gap or competing interpretation
Targeted explanation and feedback	Correction, clarification, and conceptual reorganization
Independent application	Retention, transfer, and more flexible language use

The model also identifies an important interruption point. If initial problem-solving does not activate relevant knowledge, or if feedback fails to resolve the difficulty, the process may end in frustration rather than conceptual development. Effective implementation must therefore include monitoring, appropriate task difficulty, and a clear instructional endpoint.

The argument for strategic confusion becomes more credible when its limitations are examined explicitly. Beginners may not possess sufficient linguistic knowledge to generate useful hypotheses about unfamiliar structures. In such cases, a brief explanation, worked example, or guided demonstration may be more appropriate than open-ended discovery. Working-memory limitations create another constraint. Language learners often process unfamiliar vocabulary, syntactic relationships, pronunciation, and communicative intentions simultaneously. Adding an unnecessary reasoning demand may reduce the attention available for the language itself. Research on undesirable difficulty effects warns that additional difficulty can become counterproductive when material contains many interacting elements or already places heavy demands on working memory.

A third risk concerns persistent misconceptions. If learners develop an inaccurate rule and receive no corrective explanation, repeated practice may reinforce the error. Productive failure should consequently be followed by explicit clarification, not treated as a substitute for instruction. Emotional safety is also important. Learners who fear public mistakes may avoid generating hypotheses or participating in discussion. Teachers can reduce this risk by framing initial answers as provisional, allowing individual reflection before peer discussion, and evaluating the quality of reasoning rather than judging early attempts solely by correctness.

Finally, productive failure requires careful implementation. Sinha and Kapur's analysis of 95 experimental comparisons from 57 studies, published across 44 articles, examined circumstances in which productive failure did not outperform alternative instructional approaches. Their analysis identified fidelity to the intended instructional design as a critical consideration.

This finding suggests that productive failure should not be reduced to a general instruction to let students struggle. The sequence, nature of the problem-solving activity, participation structures, and subsequent instruction must collectively serve the intended learning objective. Although related educational research supports several mechanisms underlying productive failure, the central question of whether it outperforms immediate explanation for EFL learning requires direct experimental testing. A feasible study could recruit approximately 120 intermediate-level EFL learners and randomly allocate them to three instructional conditions, subject to institutional approval, informed consent, and appropriate allocation procedures.

The explanation-first group would receive a teacher-led explanation of selected grammatical structures before completing matched practice activities. The productive-failure group would attempt carefully designed grammatical problems before receiving an equivalent explanation. A third, practice-and-feedback group would attempt similar problems and receive concise explanatory feedback after each attempt, allowing the study to investigate whether extended initial struggle offers benefits beyond an iterative approach. All groups would receive the same target content, instructional time, learning materials, and assessment conditions as far as practicable. The

outcome measures would include an immediate post-test, a delayed test approximately two weeks later, and a transfer task requiring learners to apply the target structures in unfamiliar sentences or a short communicative activity.

Table 3. Proposed experimental design

Component	Proposed specification
Participants	120 intermediate EFL learners
Allocation	Three groups, approximately 40 learners per group
Group A	Explanation followed by guided practice
Group B	Initial problem-solving followed by explanation
Group C	Initial attempt followed by iterative explanatory feedback
Learning content	Matched grammar and contextualized usage tasks
Immediate outcome	Accuracy and conceptual understanding
Delayed outcome	Retention after approximately two weeks
Transfer outcome	Application in unfamiliar sentences and communicative contexts
Analysis	Group comparisons, confidence intervals, effect sizes, and baselineadjusted models

Note: The sample size and procedures are proposed design choices, not details of a completed experiment. A formal power analysis should determine the final sample size based on the expected effect, outcome variability, and study design.

The analysis should distinguish immediate performance from delayed retention and transfer. If the explanation-first group performs best on the immediate post-test while the productive-failure group performs better on delayed transfer, the results would support the proposition that immediate accuracy and durable learning are not equivalent. If the groups show no meaningful differences, the evidence would not support claiming that productive failure is superior under the tested conditions.

The third group would provide additional insight into whether learners need an extended period of struggle or whether the advantages of active problem-solving can be obtained through shorter attempts followed by immediate explanatory feedback.

To strengthen the study, researchers should assess learners' prior knowledge, record task completion time, monitor perceived confusion, and use blinded scoring for open-ended writing or speaking outcomes where feasible. Reporting standardized effect sizes, confidence intervals, attrition, and all planned outcomes would make the results more interpretable and reproducible.

The research should also examine whether proficiency moderates the effects. Productive failure may operate differently for learners who already possess a basic grammatical framework than for learners who are encountering the relevant linguistic forms for the first time.

Conclusion

The productive failure paradox challenges a deeply established assumption in language teaching: that the most effective learning begins with the clearest possible explanation. Research on productive failure, retrieval practice, feedback, and desirable difficulties suggests that carefully structured initial struggle can create conditions for deeper engagement with a learning problem. However, the evidence does not justify a universal claim that confusion is more effective than explicit instruction in EFL. The distinction between productive and unproductive confusion is fundamental. Productive confusion is temporary, relevant to the learning objective, supported by prior knowledge, and resolved through informative feedback. Unproductive confusion lacks these

conditions and may reinforce misconceptions, increase cognitive overload, or discourage participation.

The quantitative literature provides a strong rationale for further investigation. Classroom research on retrieval practice reports widespread medium or large benefits across a substantial proportion of experiments, while a large meta-analysis of feedback research reports a medium overall effect. These findings support the importance of active engagement and instructional feedback, but they do not directly measure the comparative effectiveness of productive failure in foreign-language classrooms. For EFL teachers, the most defensible implication is to treat productive failure as a targeted instructional option rather than a replacement for explicit teaching. Learners may benefit from attempting to infer a grammatical rule, interpret a difficult passage, construct an argument, or solve a communicative problem before receiving an explanation that addresses the challenges they encountered. Such activities should be followed by guided analysis, correction, and opportunities for independent application.

Ultimately, the question is not whether learners should experience confusion, but whether the instructional sequence enables them to learn from it. Strategic confusion can become a resource for language learning when it is purposeful, manageable, and resolved; without these conditions, it remains merely an obstacle.

References

1. Agarwal, P. K., Nunes, L. D., & Blunt, J. R. (2021). Retrieval practice consistently benefits student learning: A systematic review of applied research in schools and classrooms. Educational Psychology Review, 33, 1409–1453. https://doi.org/10.1007/s10648-021-09595-9
2. Bjork, R. A., & Bjork, E. L. (2011). Making things hard on yourself, but in a good way: Creating desirable difficulties to enhance learning. In M. A. Gernsbacher, R. W. Pew, L. M. Hough, & J. R. Pomerantz (Eds.), Psychology and the real world: Essays illustrating fundamental contributions to society (pp. 56–64). Worth Publishers.
3. Darabi, A., Arrington, T. L., & Sayilir, E. (2018). Learning from failure: A meta-analysis of the empirical studies. Educational Technology Research and Development, 66(5), 1101–1118. https://eric.ed.gov/?id=EJ1190137
4. Kapur, M. (2008). Productive failure. Cognition and Instruction, 26(3), 379–424. https://doi.org/10.1080/07370000802212669
5. Kapur, M. (2016). Examining productive failure, productive success, unproductive failure, and unproductive success in learning. Educational Psychologist, 51(2), 289–299. https://doi.org/10.1080/00461520.2016.1155457
6. Sinha, T., & Kapur, M. (2018). When productive failure fails. Instructional Science, 46, 1–27. https://escholarship.org/uc/item/89k7p1wr
7. Wisniewski, B., Zierer, K., & Hattie, J. (2020). The power of feedback revisited: A meta-analysis of educational feedback research. Frontiers in Psychology, 10, Article 3087. https://doi.org/10.3389/fpsyg.2019.03087
8. Understanding difficulties and resulting confusion in learning: An integrative review. (2018). Frontiers in Education, 3, Article 49. https://doi.org/10.3389/feduc.2018.00049