



## Promoting learner output in the L2 classroom: Insights from research and teaching strategies

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**Abstract:** *This paper examines a range of studies related to Swain's Output Hypothesis and its significance in second language (L2) learning. It explores research focused on the three primary functions of learner output: as a trigger for noticing language gaps, as a means of hypothesis testing, and as a tool for metalinguistic reflection and the internalization of linguistic knowledge. The pedagogical implications of these functions are also discussed. The review clearly demonstrates that output plays a crucial role in providing learners with opportunities for language use, receiving feedback, and ultimately fostering language acquisition. Therefore, learner output should be promoted as a core classroom practice. Educators and language teachers should recognize it not only as a way to enhance students' communicative abilities or generate feedback, but also as a vital process for reinforcing and internalizing both existing and new language knowledge.*

**Keywords:** Output hypothesis, Input hypothesis, Pushed output, Noticing, L2 acquisition, L2 learning.

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## Introduction:

This paper reviews relevant literature to examine the background and premises of Swain's "Output Hypothesis" with the ultimate aim of advancing our understanding of the output hypothesis in SLA. First, it will present a general background and description of output hypothesis and the three functions of output in L2 learning proposed by Swain (1985): 'noticing', 'hypothesis testing', and 'metalinguistic reflection'. It will then explore further what research literature suggests about the effectiveness and pedagogical implications of these three functions of output in L2 learning.

Output was traditionally considered as the outcome or product of language acquisition device but not as the process of L2 learning (Swain, 2005). Since Swain's proposal of output hypothesis in teaching second or foreign languages (L2), at present production or output is considered as an important part of language learning. There is no doubt that Krashen's input hypothesis still strongly influences L2 teaching, but it seems to be the fact that not only comprehension, but also the production plays significant role in language acquisition. According to Suzuki and Itagaki (2007), several researchers (e.g. Ellis, 2003; Izumi, 2003) have argued that comprehension of language and production of language can facilitate language in different ways. Thus, it is important to

explore the importance of role of producing language or output in L2 learning.

## 2. Swain's Output hypothesis

The output hypothesis was formulated in reaction to Krashen's (1985) claim about the major role of comprehensible input in SLA and it is based on Swain's many years of research on Canadian immersion programmes (Izumi, 2003). The immersion programs generally have great success in many areas of students' language development (e.g., listening comprehension, functional abilities, confidence in using L2), but these students have been found to have problems in target language grammar. Studies Swain (Swain, 1996) undertook in the eighties found that, although immersion students were provided with a rich source of comprehensible input and they acquired native-like reception skills, they typically maintained certain non-target-like structures in their production. Swain wanted to find out why, and carefully examined what went on in immersion classrooms. She found that: the input itself was limited in various ways (for example, some grammatical structures such as conditional tenses were seldom used); although grammar was taught, it was taught discretely point by point and was seldom referred to during content area study; in their immersion classes, students actually produced language much less frequently than in classes taught in their L1; and when



immersion students did produce, few of their linguistic errors were responded to, and when their errors were responded to, they were not responded to in any systematic way by the teachers.

Swain (1985) argued that these learners were engaged in very little language production, which prevented them from going beyond a functional level of L2 proficiency (Izumi, 2003). Swain (1985) also argued that immersion students lack output opportunities in two ways:

“first, the students are simply not given—especially in the later grades—adequate opportunities to use target language in the classroom context. Second, they are not being ‘pushed’ in their output” (p. 249).

Thus, Swain claimed that understanding new forms is not enough and that learners must also be given the opportunity to produce them. She doubted that interactions and comprehensible input on their own are sufficient for SLA (Shehadeh, 1999) and concluded that although valuable for the acquisition process, comprehensible input is not sufficient for these students to fully develop their L2 proficiency. Swain argued that what these students need is not only comprehensible input, but ‘comprehensible output’, for the improvement of both fluency and accuracy in their interlanguage. This she termed the “comprehensible output hypothesis” for SLA (Swain 1985, p. 249).

While Swain acknowledged the importance of comprehensible input in second language acquisition (SLA), she argued that comprehensible output also plays a crucial role in the learning process. According to the comprehensible output hypothesis, when learners face difficulties in communication, they are “pushed” to produce language that is more accurate, coherent, and appropriate. This effort to refine their output supports language development. As Swain (1985) noted, comprehensible output serves several key functions: it provides opportunities for meaningful, context-based language use, allows learners to test their hypotheses about the target language, and encourages a shift from understanding language mainly for meaning (semantic processing) to paying attention to its grammatical structure (syntactic processing). The Three Functions of Output

To consider in more detail just how output provides opportunity for acquisition, let's now turn to the three functions of output proposed by Swain: noticing, hypothesis testing, and the reflective or metalinguistic function.

*Noticing:* When learners produce language, they often become aware of gaps in their linguistic knowledge. In other words, they may realize they lack the ability to express certain forms correctly. Swain (1995) explains that during language production, “learners may notice a gap between what they want to say and what they can say,” which helps them recognize areas of incomplete or missing knowledge (pp. 125–126).

*Hypothesis Testing:* Once learners notice a gap, they may re-examine what they know about the language and generate alternative ways to express their intended message. This process of testing possible forms to fill the gap is known as hypothesis testing—the second function of output. According to Izumi (2003), “learners can judge the comprehensibility and linguistic well-formedness of their interlanguage utterances against feedback obtained from their interlocutors” (p. 170). Through this process, learners can either acquire new language structures or strengthen their use of forms they have partially learned.

*Metalinguistic or Reflective Function:* The third function of output is its role in promoting metalinguistic reflection. As learners attempt to resolve language problems during production, they may begin to think consciously about how the language works. Swain (1995) argues that this type of reflection supports acquisition by making the processes of noticing and hypothesis testing more explicit. When learners reflect on their use of the target language, their output serves a metalinguistic function that helps them internalize and gain control over linguistic knowledge.

Before discussing the studies which provide support for Swain's characterization of the role of output, it's important to shed some light on her conceptualization of ‘dialogue’, the construct within which she places output in her most recent work (Woodfield, 1998).

According to Woodfield (1998), Vygotsky viewed learning and human thought in general as rooted in social interaction. He believed that cognitive development occurs through the internalization of dialogue, particularly the kind experienced during interactions with caregivers. For Vygotsky, dialogue was not merely communication, but a fundamental cognitive process. He saw language as a mediating tool between the individual and knowledge, an essential means through which we construct understanding. Learning, therefore, takes place within the context of both external and internal dialogue. Building on this view, Swain emphasized that the functions of output in language learning, such as noticing gaps in knowledge, forming and testing hypotheses, and reflecting on language use, are best understood as occurring through dialogue. For Swain, both thinking about the language one wishes to produce and engaging in discussion about that language are central activities where meaningful language learning happens.

### 3. Research on output hypothesis

Swain's output hypothesis is now widely recognized as an important approach in SLA. It has generated valuable empirical research into the roles of output in second language acquisition. These studies have reported positive and promising findings for the specific functions of output.

#### 3.1 Noticing function

Swain and Lapkin (1995), in one of their studies, set out to assess the effects of output upon the inner speech of learners. Participants were eighth grade immersion students who were asked to assume the role of journalists, and to write a short article on an environmental problem, thinking aloud as they did so, thus allowing the researchers to see the impact of output upon the learners' thought processes. The researchers found that each of the students noticed, and responded to, a language problem in their output an average of just over ten times. In addition, they found that students analyzed their knowledge of the language in order to solve their problems. In one example from the study, a student who had written about how phosphates released into lakes cause plants to grow to such a great size that they kill the fish, struggled with how to say “kill the fish.” She thought aloud as follows:

*“et mort (and dies). I don't know. I don't know because mour. . . mourir les poissons (to die the fish), it's like mourir is something that you do. It's not something that someone does to you. So it's more like being murdered and not dying. So uhm . . . et tue toutes les poissons (and kills all the fish), or something like that.”*

Here the student notices a gap in her knowledge - she notices that there is something wrong with "*mourir les poissons*." Then she explicitly reflects on the nature of the language system: "*mourir* is something that you do. It's not something that someone does to you." As a result of her reflection, she selects an alternative form to express her meaning: "so uhm . . . *et tue toutes les poissons*, or something like that." The need to produce output, Swain suggested, has either helped the learner realize the distinction between transitive and intransitive verbs for the first time, or it has consolidated the learner's knowledge of this distinction, in that she has applied it to additional forms. Output led to noticing the gap, additional syntactic processing, the creation of a more accurate output, and the development of the student's interlanguage system in the process. The entire process can be considered as an example of language learning through private speech-an internal dialogue.

Izumi et al. (1999) conducted a study to investigate if learners' recognition of linguistic problems prompt them to notice relevant features if input is subsequently provided to them. Participants were 22 students from two college-level academic writing classes in a community college ESL department and ages of the participants ranged from 18 to 55. After the administration of the pretest, participants were assigned to an experimental group (n=11) and a control group (n=11). The pre- and posttests consisted of a grammaticality judgment test and a picture-cued production test. In treatment phase 1, participants reconstructed a short passage after being exposed to it, followed by a second exposure to the same input material and a second reconstruction opportunity. In phase 2, participants wrote on given topics, followed by the presentation of a model written by a native speaker. To test the noticing function of output, participants underlined parts of the sentences they thought were "particularly necessary" for subsequent reproduction. The findings showed that the experimental and the comparison group demonstrated increased noticing of the target form, as measured by participants' underlining as they read the input passages. The experimental group demonstrated a significant rate of uptake of the target form in their production immediately following exposure to the input and the experimental group made significantly larger gains on the production test after phase 2 of the treatment than did the comparison group. These results provided some support to the noticing function of output in SLA.

Following this study (Izumi et al.1999), Izumi & Bigelow's (2000) examined the noticing function of output. The participants in the study were the same population as those in Izumi et al.'s (1999) study, and they were a heterogeneous group of adult ESL learners (N = 18) enrolled in an academic writing class in a community college. After the administration of the pretest, the participants were ranked according to their pretest scores and divided into two groups (the experimental group [n = 9] and the comparison group [n = 9]) composed of students at approximately equivalent levels. Before completing essay-writing tasks and text reconstruction tasks, the two groups of ESL learners received the same input containing numerous examples of the target form, the past hypothetical conditional in English. One group was given opportunities for output whereas the other group engaged in comprehension-based activities. Izumi & Bigelow (2000) concluded that although the results indicated no unique effects of output, extended opportunities to produce output and receive relevant input were found to be crucial in improving learners' use of the grammatical structure.

Izumi (2002) explored the potential benefits of both internal and external attention-drawing mechanisms—specifically, learner output and visually enhanced input—on the acquisition of English relative clauses by adult ESL learners. The study aimed to determine (a) whether producing output helps learners notice formal features in the target language (TL) input and supports subsequent learning, and (b) whether such noticing actually leads to learning gains. Participants were adult learners enrolled in ESL programs in the United States. The study yielded three key findings. First, learners who engaged in an output–input sequence demonstrated greater improvement in their acquisition of English relative clauses compared to those who encountered the same input solely for comprehension purposes. Second, while output had a clear positive effect, visual input enhancement did not produce any significant learning gains. Third, the study found no evidence to support the idea that input enhancement is as effective as output in promoting language acquisition. Izumi concluded that the findings support the "three-fold facilitative effect" of pushed output in second language learning. Specifically, output may (a) help learners detect formal features in the input, (b) support deeper, integrative processing of target structures, and (c) increase awareness of mismatches between their interlanguage forms and the correct TL forms.

In another most recent study, Suga (2024) investigates how producing second language (L2) output can induce noticing of linguistic features and contribute to grammar learning. Using eye-tracking technology, the study examines how learners' attention is directed during the process of output production and how this noticing affects their subsequent learning of complex grammatical structures, such as the English past counterfactual conditional. The findings support Swain's claim that output facilitates deeper cognitive processing and language development.

### 3.2 Hypothesis-testing function

Pica (1988) conducted a study to examine how non-native speakers (NNSs) of English modify their interlanguage (IL) utterances to make them more comprehensible when a native speaker (NS) signals difficulty in understanding. The data consisted of ten one-hour audiotaped conversations. These conversations featured ten Spanish-speaking NNSs of English with low proficiency levels interacting individually with an experienced ESL teacher. Discussion topics included personal and academic subjects such as education, future goals, family, and friends. The findings showed that NNSs modified their original utterances in response to NS difficulty only 48% of the time. However, when they did make these self-initiated modifications, they used English forms that were target-like in 91% of cases. Pica concluded that these results suggest NNSs are capable of adjusting their IL output in response to NS signals in ways that improve both clarity and grammatical accuracy.

Similarly, Nobuyoshi and Ellis (1993) explored whether teacher prompts for clarification lead to more accurate learner output. Six Japanese learners of English completed a picture-based storytelling task twice, with a one-week interval. The study focused on learners' use of the past tense. Teachers asked for clarification either when they noticed incorrect tense usage or when the meaning was unclear. Results showed that when teachers pushed learners toward more accurate production, learners were often able to self-correct and produce more accurate output. Nobuyoshi and Ellis concluded that this increased accuracy during

interaction contributed to improved language performance, both immediately and over time.

In one study, Shehadeh (2001) investigated how both self-initiated and other-initiated modifications in learner speech contribute to the production of modified output (MO), a key factor in language development. The study involved 35 adult participants between the ages of 22 and 37, including 8 native English speakers (NSs) and 27 non-native speakers (NNSs) from 13 different first language backgrounds. Participants engaged in three communicative tasks: a picture description activity, an opinion exchange based on a newspaper article, and a group decision-making task involving the creation of a constitution for a fictional country.

In the picture description task, for example, a NNS described an image to a partner (either a NS or another NNS), who had to recreate the picture solely based on the verbal description. Prior to the tasks, participants received both oral and written instructions and were given 10 minutes to prepare. Results showed that NNSs made modifications to their speech in response to both self-perceived errors and feedback from their interlocutors. These modifications occurred across all types of interactions—NS-NNS pairs, NNS-NNS pairs, and group settings. Notably, self-initiated changes were more frequent than other-initiated ones in most contexts. Shehadeh concluded that both types of initiations support L2 development, as they promote the production of modified output, which in turn facilitates learning.

In a related study, Shehadeh (2003) explored how frequently learners engage in hypothesis testing—i.e., forming and testing assumptions about language rules—and whether these attempts are corrected during interaction. This study involved 16 adult participants (8 NSs and 8 NNSs) aged 22 to 35. All NNSs were classmates in the same ESL course and came from six different language backgrounds. Using a similar picture description task, each NNS described an image to a native speaker, who then attempted to draw it based only on the description. To eliminate visual cues, participants sat back-to-back during the task. All interactions were audio-recorded. Findings revealed that, on average, NNSs tested a language hypothesis approximately every two minutes. However, over one-third of these attempts resulted in non-target-like (NTL) output. Interestingly, many of these errors went uncorrected by the NS interlocutors. In fact, corrective feedback was typically given only when the learner explicitly asked for help or sought confirmation. As a result, many inaccurate utterances were left unchallenged.

Drawing on these findings, Shehadeh (2005) proposed that in the absence of feedback, learners may interpret silence or lack of correction as confirmation that their output is correct. This misinterpretation could lead to the internalization of incorrect language forms. If supported by further research, this would challenge Krashen's (1985) claim that output merely reflects previously acquired knowledge. Instead, Shehadeh argues that learner output—and the processes of testing and refining language through interaction—should be seen as active mechanisms through which learning occurs

In a recent study, Li et al. (2023) examines how integrating both input and output activities can enhance English listening instruction in Chinese schools. Drawing on Swain's Output Hypothesis and Krashen's Input Hypothesis, the authors argue that while input is essential, output activities—such as speaking and

writing—are crucial for language learners to notice gaps in their knowledge and to test hypotheses about the language. The research suggests that combining listening training with other language skills promotes a more effective learning environment.

### 3.3 Reflective/metalinguistic function

Metalinguistic reflection is defined as 'reflections on language' regardless of whether L2 learners use linguistic terminology or not (Suzuki & Itagaki, 2007). According to Swain, the metalinguistic reflection that L2 learners engage in while comprehending and producing language is a major source of L2 learning, and that the function of noticing and hypothesis testing can be observed through learners' metalinguistic reflections while producing language.

Swain (1998) provided evidence from previous studies which used language-related episodes (LREs) as an analytic tool to argue that solutions reached during dialogues were actually retained in the students' IL. Swain (1998) discussed a study by LaPierre (1994), which looked at how students learn a second language through talking about language. The study involved 48 students from two Grade 8 classes in an early French immersion program. They were split into two groups: the metalinguistic (M) group with 26 students, and the comparison (C) group with 22 students. The students took part in a "dictogloss" activity. A short passage was read aloud to them twice. During the first reading, they just listened. During the second reading, they took notes on words and phrases they recognized to help them rebuild the passage later. After that, students worked in pairs for about 25 minutes to reconstruct the passage as closely as possible to the original. In earlier sessions, both groups practiced the activity. However, in session 3, the two groups received different kinds of instruction. The M group was shown how to talk about language using grammar rules and special language terms (like "noun" or "verb"). This was meant to help them fix gaps in their language knowledge. The C group, on the other hand, was only encouraged to notice grammar, but they were not taught any rules or grammar terms. So, they were not shown how to solve language problems using specific knowledge.

The results showed that the two groups together produced 256 language-related episodes (LREs), which are moments when students noticed, discussed, or tried to fix a language problem.

On average, students in the M group produced 14.8 LREs, while those in the C group produced only 5.8. In other words, the M group had about two-and-a-half times more language-focused discussions. Swain (1998) argued that using grammar rules and language terms helped students pay more attention to their own language and think more deeply about it.

To see if students remembered what they had learned during their pair work, a follow-up test was given one week later. The results showed that students often remembered and kept the solutions they had come up with during their earlier discussions, even if those solutions were not completely correct. Their answers on the test matched their earlier decisions about 70–80% of the time. Swain took this as strong evidence that these pair discussions helped students build language knowledge. She argued that talking about language (metalinguistic talk) supports second language learning and is a clear sign that learning is taking place.

Swain (1998) asserted that the results strongly suggest that language-related episodes (LREs), where students consciously

reflect on the language they are producing, can serve as a source of language learning. She also concluded that when learners reflect on their own use of the target language, their output performs a metalinguistic function, helping them control and internalize linguistic knowledge.

In another study, Swain and Lapkin (2002) asked two teenage French immersion students to describe a picture story in French. Later, the students looked at a corrected version of their story. It had the same meaning but with grammar mistakes fixed. The students were asked to reflect on the differences between their original version and the corrected one. The researchers found that this reflection helped the students better understand why the changes were made, leading to deeper learning.

Most recently, Al-Ghazo and Taamneh (2024) also investigates the impact of Swain's Push Out Hypothesis on enhancing reading comprehension among Jordanian English as a Foreign Language (EFL) learners. The experimental group engaged in tasks designed to encourage output production, while the control group did not. The results indicated that the experimental group showed significant improvement in reading comprehension, supporting the notion that producing language can facilitate deeper processing and enhance language skills.

#### 4. Pedagogical implications

The studies on three functions of output hypothesis reviewed in this paper, has pedagogical implications for second language classrooms. What follows are some pedagogical implications of output in L2 learning suggested by research.

Swain (1998) asserted that collection of studies (e.g., Kowal & Swain, 1994; LaPierre, 1994; Swain & Lapkin, 1995) that she reviewed has pedagogical implications. She added that “the results point to the potential usefulness of collaborative work in promoting output and second language learning” (p. 79). Swain (1998) suggested the value of collaborative work for second language learning can be enhanced by 3 ways:

1) It's important to thoughtfully design tasks, as not all types of interaction will lead to metatalk. Additionally, a task that prompts metatalk in one group of learners might not have the same effect in another group. This variation can be influenced by factors such as the learners' language proficiency, their age, and other contextual elements (p. 79).

2) The findings indicate that the effectiveness of collaborative work can be improved when students are well-prepared for the task. For instance, understanding the task procedure plays a key role. Providing clear instructions—such as through teacher demonstrations or role-playing—can further support students in successfully completing the activity (p. 80).

3) The findings highlight the potential importance of providing feedback to students. While the proportion of language-related episodes (LREs) in which students believed they had correctly resolved a linguistic issue—when in fact they had not—was relatively low, the impact was significant. Students often retained these incorrect solutions, effectively learning inaccurate language forms. This underscores the importance of teacher presence during collaborative tasks and careful attention to the accuracy of students' final output after such activities, as both may play a crucial role in supporting effective learning (p. 80).

Izumi & Bigelow (2000) provided the following suggestions on how output can be used effectively in L2 teaching and learning:

i) Learners can engage in awareness-raising activities designed to develop noticing strategies (Thornbury, 1997). These may involve training in text-scanning techniques—such as identifying differences between two similar texts—and proofreading exercises, like highlighting and explaining the changes between initial and revised drafts.

ii) Following output, learners may be exposed to enhanced input that draws their attention more explicitly to the target forms. This enhancement can be visual—such as using boldface or underlining in written text—or auditory, through the use of stress in spoken language (Izumi, 2000).

iii) Collaborative reconstruction tasks also offer opportunities for noticing. In a study by Kowal and Swain (1994), learners listened to a passage, took notes, and then worked in pairs or groups to reconstruct the text. This activity was followed by a whole-class session analyzing and correcting the reconstructed versions (Wajnryb, 1990).

iv) Once learners have attempted production, teachers can provide feedback on both the grammatical accuracy and the content of their output (Swain, 1985, 1993, 1995).

v) In certain instructional settings, learners' interlanguage output can be compared directly—sentence by sentence—with the target language model. This side-by-side comparison highlights differences more clearly, facilitating form-focused reflection. This approach is akin to recasts, a form of corrective feedback explored by researchers such as Doughty and Varela (1998), Long, Inagaki, and Ortega (1998), and Mackey and Philp (1998).

Shehadeh (2005) emphasized that a key teaching implication from research on learner output is that curriculum planners, syllabus designers, and language teachers should view learner output as an essential and active part of second language (L2) learning. He argued that learner output should be encouraged regularly in the classroom because it serves several important roles in language development. First, producing output helps learners develop greater fluency in the target language. Second, it creates valuable opportunities for feedback, allowing learners to notice and correct their own errors, and often leads to more understandable input from others. Third, it aids language acquisition by pushing learners to express ideas clearly, especially when they become aware of gaps between what they want to say and what they can actually say. In such moments, learners often engage in discussions about language form (metalinguistic talk) and test out language rules or structures, which deepens their understanding. These functions—supporting language use, providing feedback, and promoting learner engagement—make output a powerful tool in the learning process. Therefore, a central aim of classroom activities should be to develop both comprehension and production skills. Language teachers should ensure that students are not only able to understand messages but also able to express their own ideas clearly and appropriately in the target language.

#### 5. Conclusion

This paper reviewed several studies related to the Output Hypothesis and its role in second language (L2) learning. It identified three main functions of learner output: output as a way to notice language gaps, output as a means of testing language

hypotheses, and output as a tool for metalinguistic reflection and internalizing linguistic knowledge. The paper also discussed the teaching implications of these functions. The review shows that these three functions of output give learners valuable opportunities to use the target language, receive feedback, and most importantly, support language learning. For this reason, encouraging learner output should be a regular part of classroom practice. Teachers and educators should view learner output not only as a way to improve language use or receive correction, but also as a process that helps students strengthen and internalize their language knowledge. In addition, language teachers need proper training to help them design activities and classroom situations that support meaningful learner output and promote L2 development.

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