

# USING AI SIMULATIONS TO BUILD FLUENCY AND SELF-CONFIDENCE

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# Introduction

According to a recent survey of English language teachers, speaking skills are by far the most important of the four language skills (CUP, 2017). Yet only 50% of the teachers surveyed were confident that their students could cope well in unplanned conversations in English. Affective barriers such as shyness and embarrassment were the biggest barriers to students participating fully in speaking activities. According to the study, the fear of making mistakes holds [students] back and dampens their motivation, affecting performance.

This white paper presents findings from evaluations of Enskill English, a digital product that uses artificial intelligence (AI) to help learners develop proficiency in English. Learners practice conversations with AI-driven avatars and receive feedback and personalized guidance in the areas where they need to improve. It provides learners a safe environment where they can practice without fear of making mistakes. Enskill English was a finalist in British Council's award for Digital Innovation in English language teaching (British Council, 2019).

Findings so far indicate that Enskill English helps increase both fluency and self-confidence in English language learners (ELLs). This in turn has a positive effect on classroom teaching, since learners come to class more self-confident and more willing to communicate.

## Cognitive and affective barriers to fluency

In order to engage effectively in spoken conversation, English language learners must achieve what Segalowitz (2010) calls cognitive fluency. Spoken language involves a variety of cognitive processes, including planning utterances, encoding them grammatically and phonologically, and then producing them as overt speech. During conversation one must at the same time attend and interpret what the other person is saying. Cognitive fluency is the ability to quickly and efficiently mobilize and integrate these cognitive processes in order to keep the flow of speech moving.

If ELLs are employing these cognitive processes in a deliberative fashion, mentally constructing grammatical forms and selecting vocabulary items, they cannot possibly achieve cognitive fluency. Instead, spoken language requires a high degree of automaticity, i.e., habitual behavior and muscle memory. This requires a significant amount of speaking practice.

Affective barriers can get in the way of achieving spoken proficiency (Commonwealth of Australia, 2013). Some learners experience foreign language anxiety: performance anxiety and fear of negative evaluation by other students and teachers (Horwitz et al., 1986). Anxiety and low self-confidence can result in low willingness to communicate in the foreign language (Burgoon, 1976). ELLs who experience these affective barriers are less likely to practice speaking, and have more performance difficulties when they do speak.

English language learners in many countries have few opportunities to practice English with native speakers. They therefore struggle when they engage native speakers in conversation.

## Techniques for building self-confidence

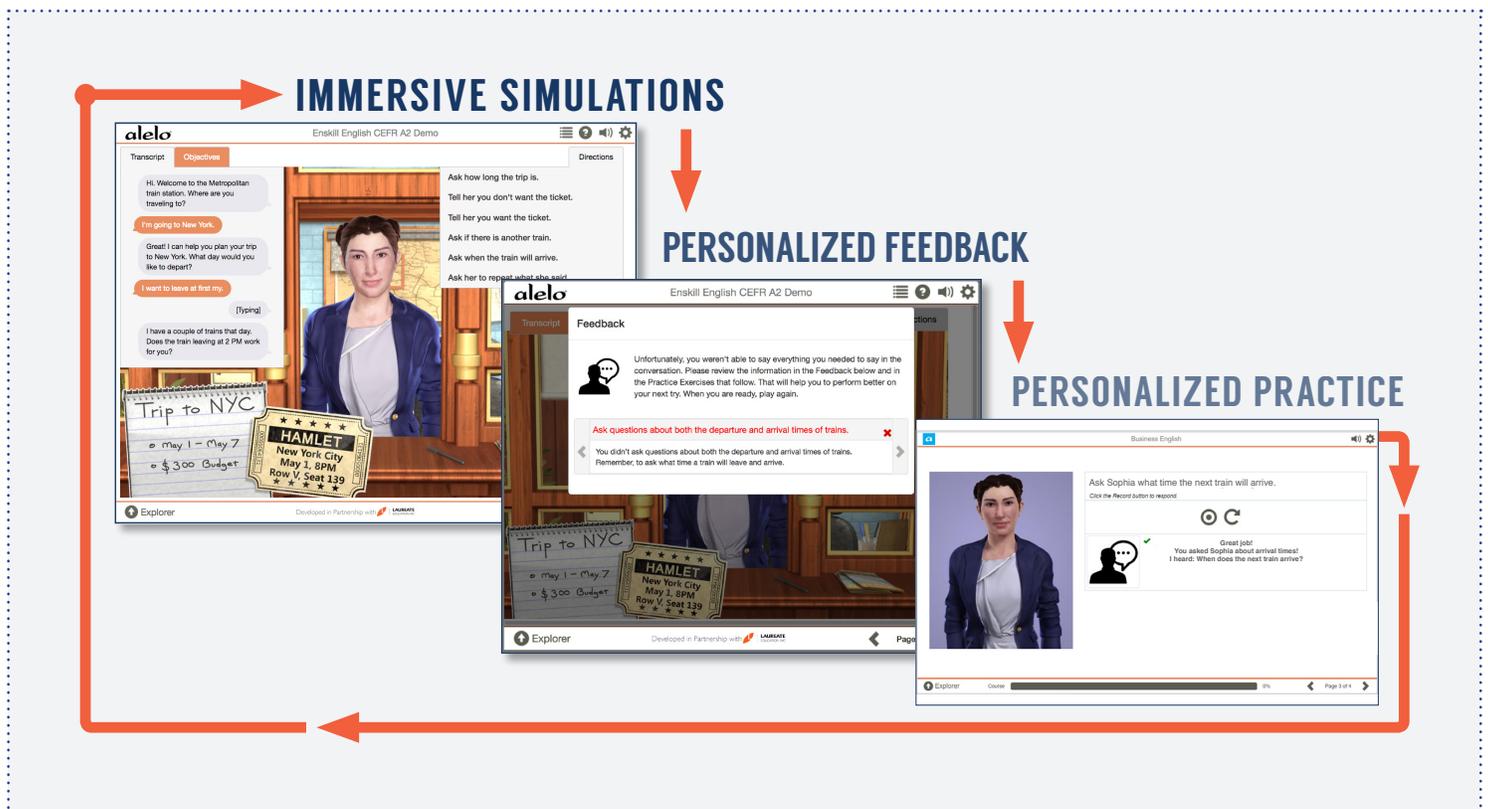
The following are some recommended classroom teaching techniques for building self-confidence in English speaking skills (Pesce, 2019; Zazulak, 2017). They contrast with traditional teaching methods that focus on vocabulary and grammar.

- Make learning goal-oriented.
- Give learners chances to succeed.
- Teach in context.
- Use visuals.
- Don't correct learners as much in free-speaking activities.
- Instill habits and use repetition.

## Enskill English

These same techniques have been incorporated into Enskill English, so that it can also help learners build self-confidence. Enskill English gives learners opportunities for realistic spoken English practice with animated characters that speak and understand English, acting as simulated English speakers. Learners can practice as much as they want in a safe environment, where they are not being judged by their teacher or other students. This reduces affective barriers and builds proficiency. Enskill English's AI serves as an *aide intelligente*, not as an artificial instructor. It is intended to act as an intelligent teacher's aide that gives each learner individual attention while saving teachers time and effort so that they can teach more effectively.

Learners access Enskill English through a web browser on their computer or mobile device. They converse with interactive characters by speaking into a microphone. The on-screen character interprets the learner's speech and responds, and at the same time evaluates the learner's communication skills. Thanks to Enskill's advanced natural language processing technology, learners can express themselves in a variety of ways and are not confined to a fixed script. At the end of each conversation Enskill provides feedback, including quantitative metrics of fluency, and recommends exercises for further practice.



Enskill English is structured as a collection of task-based simulation modules. In each simulation the learner has a task to perform, such as buying a train ticket or getting directions to a destination. Simulations are organized into proficiency levels. The Common European Framework of Reference (CEFR) defines three levels for language proficiency: A (basic user), B (independent user) and C (proficient user). Each level is further subdivided as follows: A1, A2, B1, B2, C1, and C2. At the time of this writing Enskill English simulations are available for A1 and A2 levels, with more under development. Each level covers a semester-length course in English as a foreign language.

## Evaluations in Serbia, Croatia, Mexico, and Sweden

Evaluations of Enskill English have been performed in a number of countries, including Serbia, Croatia, Mexico, and Sweden. The following is a brief summary of the evaluation results; more details may be found in (Johnson, 2019).

Students who practiced with Enskill English improved their fluency in simulated conversations. For example, the table shows how the fluency of students at an institution in Serbia improved through practice. The first time learners practiced the simulations they performed an average of 2.62 conversational exchanges per minute. When they finished practicing the conversational exchange rate had increased to 4.31 exchanges per minute. The average number of repeats (requests by either the learner or the animated character to repeat what was said) decreased from 7.52 per conversation to 3.52 per conversation. The number of meaningful exchanges (exchanges that were not repeats) increased from 11.33 to 14.33, and the percentage of exchanges which were meaningful increased from 62.65% to 82.35%.

Category	Exchanges	Repeats	Meaningful Exchanges	Meaningful Exchange Rate	Exchanges per Minute
<i>First Trial Practicing</i>	18.86	7.52	11.33	62.65%	2.62
<i>Last Trial Practicing</i>	17.86	3.52	14.33	82.35%	4.31

*Learner performance in conversational exchanges over multiple simulation trials.*

Instructors in Mexico reported that practice with Enskill English improved their students' confidence, and this had a positive effect on their classes. The following are some of their comments:

***"It helps me to improve my classes and also it makes my classes very, very short and very, very communicative."***

***"If you want your students to have more self-confidence, Alelo is going to be your best option."***

***"When I was a kid I wish I had this kind of platform because it helps in confidence."***

The teacher in the Swedish trial also noted improvements in self-confidence, although it was hard to tell to what extent this was attributable to Enskill English and to what extent it was attributable to other learning activities that the students were engaged in.

## Conclusions

In order for ELLs to develop fluency, they need to practice conversation. Affective filters can discourage learners from practicing and leave them ill prepared to engage in conversations with native speakers. Enskill English overcomes these problems by providing a safe environment to practice, and implements best teaching practices in building learner self-confidence.

The results presented here are from preliminary evaluations; longer-term studies are needed to measure improvement in fluency of time. Comparison studies are also needed to measure how learning with Enskill English compares to conventional classroom instruction. Teachers who participated in these trials look forward to participating in such follow-on evaluations.

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