

iPod in Education: The Potential for Language Acquisition

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iPod in Education: The Potential for Language Acquisition

The need for effective language teaching has never been stronger than in today's global economy. Trade, cultural understanding, and increasingly, political stability depend on the ability to understand the languages of our global neighbors. Despite the potential benefits of second language skills in the marketplace, only a handful of American students leave school with even rudimentary skills in a language other than English.¹

In addition to the important job of teaching foreign languages to native English speakers, K-12 teachers have an additional challenge in the classroom: One out of every five K-12 students in the United States comes from a home in which a language other than English is spoken.² This situation presents challenges in the teaching of English as a second language, in the maintenance of the home or heritage language, and in the teaching of second languages to native English speakers.³ Thus, language teaching is more important than ever in today's classrooms.

Current technology offers new opportunities to increase the effectiveness of language teaching. The purpose of this paper is to outline how one such technological innovation, the iPod, used with the iTunes and iLife software, can serve as a powerful tool for teaching and acquiring languages. With its unique features of portability, ease of use, and file storage capacity combined with its ability to deliver audio as well as text, images, and video, the iPod holds the promise of revolutionizing the way languages are acquired both in and out of school. This paper will:

- Outline a basic framework for understanding how iPod and iTunes can be used in language education, consistent with current theories of second language acquisition and bilingualism
- Review research findings that support this framework for using iPod in K-12 schools
- Discuss ways in which the iPod, iTunes, and iLife software can be best used to support language teaching
- Give examples of the use of the iPod in language education
- Provide recommendations for further reading

Getting the Message: Using the iPod to Promote Language Acquisition

In the past decade, schools have seen dramatic technological changes that hold the promise of more effective teaching methods and strategies. True innovation comes, however, when teachers are able to take what they know about best practices in teaching and use technology in ways that are consistent with those strategies.⁴ The iPod

presents several important new opportunities to take what is known about how children and adults acquire languages and accelerate that acquisition through new applications. The first step in exploring how the iPod can be used in language education is to review how languages are acquired and the parameters for language teaching in general.

When teaching in the target language (TL), language should be:

- Comprehensible
- Culturally relevant and accurate
- A way to provide a connection with target culture

How Languages Are Acquired

Research on second language acquisition over the past 30 years has provided some important insights into how languages are—and are not—acquired, and gives some clear indications of how new technologies can best be exploited. Although scholars disagree on different aspects of language acquisition theory, one area of common agreement is this:

*We acquire languages when we can understand what is being communicated to us.*⁵

Anything that is “new” in spoken or written messages from others (vocabulary, grammatical structures, and so forth) will be eventually acquired if enough messages or “input” is obtained. The essential role of input in language acquisition is thought to hold true for oral and written language, for first and second languages, and for children and adults.⁶ The goal of good second language instruction, then, is to provide ample opportunities for students to be exposed to comprehensible messages—sometimes referred to as *comprehensible input*.⁷

This language input, whether in conversations, books, movies, audio files, or websites, must be comprehensible (for example, a newscast intended for native speakers would not be the best choice for beginning language learners) and will also ideally be interesting. Interesting messages can motivate and captivate the listener in such a way that, in the best of circumstances, learners temporarily forget they are listening or reading in a second language; they enter a state of “flow.”⁸

Language acquisition can be impeded or accelerated by social and psychological factors that have been variously labeled (motivation, self-esteem, anxiety). Recent research has classified these factors under the broader label of group membership,⁹ meaning that students who can envision themselves being accepted as legitimate speakers of the new language are more likely to succeed than those who cannot. Such a feeling of “belonging” tends to encourage greater amounts of language input (more reading and listening) and higher levels of language proficiency in both second and heritage language students. Good language classrooms, therefore, try to foster this type of identification and sense of community among students.

In the past three decades, second language teachers and researchers have generally agreed that the ideal second language acquisition environment involves the use of primarily the “target” language (TL)—the language students are trying to acquire. A French class, for instance, should be conducted primarily in French, as long as the teacher makes the language comprehensible to students. In addition to being comprehensible, the language should also be culturally relevant and accurate and provide students with contact with the target culture in such a way as to foster the sense of group membership.¹⁰

The native or first language of the student can still contribute to second language acquisition, for example, by providing important background knowledge or clearing up confusions that arise.¹¹

People comprehend new language:

- Through background or prior knowledge
- Through extra-linguistic clues

How People Understand Languages

People are able to comprehend new language in two ways. First, they rely on their existing knowledge of the world (sometimes called *background* or *prior knowledge*). This includes knowledge of the topic being discussed (gained either through the first or second language), as well as knowledge of the target language itself through previous exposure. People are able to understand language on a topic they are familiar with much more readily than on a topic they are not familiar with for precisely this reason. Car enthusiasts will understand a conversation about the latest model cars far better than about a topic they don't know about, such as cooking.

The second factor affecting comprehension is the absence or presence of *extra-linguistic clues*—clues to the meaning of the language found in something other than the language itself, such as gestures, pictures, visuals, facial expressions, and so forth. The success of comprehension-based methodologies is due to extensive use of these extra-linguistic cues.¹²

Thus, effective language teachers need to present students with input that uses extra-linguistic clues and that takes advantage of students' background knowledge. Providing this kind of contextual support is one way to support teaching of foreign and second languages. The following table outlines the types of contextual support that will be most useful for learners from true beginners to the most advanced:¹³

Contextual Support Needed for Language Teaching

Level	Oral Language Acquisition			Written Language Acquisition		
	Audio	Text	Visual	Audio	Text	Visual
True Beginner	Required	Recommended	Required	Recommended	Required	Recommended
Upper Beginner	Required	Recommended	Recommended	Recommended	Required	Recommended
Intermediate	Required	Optional	Recommended	Optional	Required	Recommended
Advanced	Required	Optional	Optional	Optional	Required	Optional

This table presents the required, recommended, and optional components for both oral and written language acquisition. Clearly, oral language acquisition requires audio input at all proficiency levels, and written language acquisition requires text at all levels. But the use of text can enhance oral language acquisition, the use of audio can enhance written language acquisition, and providing visual support can help both. For example, language students typically find benefit from having text to read along with when they are listening, especially at the beginning level. Similarly, research on literacy development shows that reading aloud to children and involving the child in making sense of the text are crucial parts of early reading acquisition.¹⁴

Both oral and written language acquisition can be greatly assisted by the use of visual clues to the meaning of the message. Successful beginning language teaching methods make heavy use of pictures, gestures, and other extra-linguistic support. At intermediate and advanced levels, students can benefit from lessons based on academic content using sheltered subject matter teaching, where the instructor presents content with additional contextual support, such as visuals. Visual support also plays a key role in acquiring written language.

iPod and Language Education: Making the Connection

More than four decades of method comparison research on effective second language teaching approaches has shown that students who are exposed to a greater quantity of comprehensible language in and out of the classroom have higher levels of language proficiency than students using different methodologies (such as grammar-translation, concurrent translation, and others). This has been shown at beginning, intermediate, and advanced levels in both traditional classrooms¹⁵ as well as in instruction using new digital media and associated technologies.¹⁶

Best practices in teaching foreign and second language programs are based on these methods of making language comprehensible:

- Slowing the rate of speech
- Providing contextual support for language
- Using vocabulary appropriate to the student's level
- Building on the student's existing background knowledge
- Fostering a comfortable environment
- Encouraging identification with people who speak the target language
- Creating a topic-driven rather than a grammar-based syllabus

These fundamental principles, while not inclusive of all the desirable elements of language teaching, are the basis of all successful second language education programs, including English language development, foreign and second language classrooms, and heritage language programs.

The following sections discuss how the iPod can support these best practices, and also provide examples of its use with specific language teaching strategies, such as narrow listening.

Delivering Comprehensible Language with iPod

The iPod makes it possible to deliver large quantities of comprehensible language to students in an efficient and convenient manner. One feature especially appealing to language teachers is the ability to give students contextual support with the help of the iPod screen, especially at the lower levels of proficiency.¹⁷ This unique feature of the iPod and iTunes eliminates the need to rely on word-for-word or concurrent translation for each segment of input, a popular approach in many audio-only self-study courses. With the advent of iPod and iTunes, teachers can now enhance that audio component with pictures and video, rendering it comprehensible entirely in the target language. Use of the first or heritage language of the student to make the second language understandable is not ruled out, however. Some judicious use of the first language, such as to preview or review key concepts, can assist comprehension without significantly reducing the amount of input.¹⁸

Students who are exposed to more comprehensible language have higher levels of language proficiency.

Taking Advantage of the “Acquisition-Friendly” Features of the iPod

Given the parameters set out above for effective language teaching, we can now turn to how specific features of the iPod, iTunes, and iLife software can enhance instruction. This discussion also includes a description of several different teaching strategies and how iPod can be used with each. As each feature and application is discussed, the language proficiency level for which it is most appropriate will be noted.

iPod can provide hundreds of hours of audio-only comprehensible language input.

Audio-Only Input

The iPod is, above all else, a portable media player designed to deliver audio and video content to users. As such, it can be used in instruction to provide students with literally hundreds of hours of audio-only comprehensible language input on both conversational and academic topics. An audio-only use of the iPod is particularly powerful for intermediate and advanced students, who are able to understand enough language to reduce the need for extensive contextual support. Audio-only input is of course usually more convenient for users, who are often engaged in other tasks while listening to iPod and therefore cannot attend to the screen. Upper beginner students can benefit from audio-only input only when they are already mostly familiar with the language used (as a form of review), or when there is some judicious use of preview/review, where topics and background information are provided in the first language without using concurrent translation.

A study of first grade ESL students who were allowed to bring home tape players with books on tape found that these students increased their reading skills faster than a control group.¹⁹ What’s more, the students’ parents also reported benefiting from the tapes in their own English language acquisition. Portable audio players such as the iPod can, of course, greatly facilitate this sort of support of both students’ and parents’ language development in an ESL context, providing dozens of hours of listening material.

iPod offers students a way to move quickly back and forth in the audio file through use of the time stamp counter. This can be extremely useful for students who need to go back in the audio file to listen again to segments they may not have understood. This ability to jump to different parts of the file is made even easier when students use audio files that have “chapter” markers added to designate different segments of the audio. Such files can be created GarageBand 3, part of the iLife suite.

Another use of digital technology in language teaching is to increase or slow down the rate of speech of the input. By listening to the audio file in QuickTime on the iPod, students can slow down or speed up the rate of speech to make it more comprehensible. Zhao reports that intermediate ESL students who were able to adjust the rate of the audio track they were listening to did significantly better than those who did not have that option.²⁰ (Of course, students can also be presented with material that is originally recorded at a slower rate of speech to get the same benefit.)

This audio-only option is one of the ways that students use the iPod to learn languages at The Brearly School in New York City.²¹ To help them acquire Spanish, French, and Mandarin, students listen to a variety of materials downloaded from the school’s internal server, including popular music, native speaker conversations, and other types of pedagogical and authentic listening material. The portability of the iPod allows students to listen at home or on the bus to school—wherever and whenever they can.

Audio recorded with iPod can be used for instruction and assessment.

Audio Recording

iPod players come equipped with a high-quality audio recording capacity. With an add-on microphone, they can be used to record audio that can then be used for instruction or assessment. The possible applications of this function are numerous. For teachers, it is possible to record additional audio input, classroom presentations, narrated stories, and other instructional material. Students can record themselves and classmates for a classroom assignment and provide speech samples to the teacher for assessment.

The Brearley School in New York also has each student in language learning classes connect a microphone to their iPod. Students are required to keep an "audio diary" recorded on the iPod, which students can then upload to the school's server for the instructor to listen. This allows every student an opportunity to demonstrate his or her oral proficiency to the teacher, who can download the audio files onto his or her own iPod to provide feedback and evaluation.

At Walnut Middle School in Nebraska, English Language Learners produce slideshows using the iPod to record the audio portion. The audio is then imported into the student presentations for teachers and parents to view.²² Teachers can now use GarageBand podcasting features to put these presentations on the iPod itself, creating a portable version of the student slideshows.

Students can also use the iPod to interview native speakers for use with another successful teaching strategy, "narrow listening." Narrow listening involves listening to several audio recordings on the same or a similar topic, recorded by different speakers of the target language.²³

Students listen, for example, to five people talking about their favorite foods. Since the recordings are all on the same topic, the vocabulary is naturally recycled, giving students the chance to hear the words repeated several times in a familiar context. A set of studies by Beatrice Dupuy and Victoria Rodrigo shows that students receive significant benefits from this approach.²⁴ Narrow listening is particularly effective for intermediate and advanced students if they have access to native or advanced proficiency speakers, such as heritage language speakers and community members. Lacking native speaking informants, teachers can provide students with recordings of multiple speakers on a variety of topics. Narrow listening and other extensive listening strategies can help bridge the well-documented "gap" between lower- and upper-level language classes.²⁵

Audio Plus Pictures and Script

Pictures, drawings, and graphics can also be attached to audio files that are playable (and viewable) on the iPod and in iTunes. The files can be produced with iLife using the "enhanced podcast" feature of GarageBand 3. Multiple pictures can be attached to the audio file to form a type of audiobook that students can listen to while viewing the illustrations in sync with the narration, like a slideshow. This is particularly useful for lower-level students to provide them with needed extra-linguistic support to make the audio comprehensible.

Research has shown that giving students audio recordings to listen to with accompanying text and illustrations leads to higher levels of language acquisition even when students are not speaking or interacting with others. Researcher Patsy Lightbown provides specific evidence that when students are given audio recordings to listen to, accompanied by appropriate visuals and text, they make impressive gains in acquisition.²⁶

Current comprehension-based teaching methods can be adapted to the iPod by taking advantage of the enhanced podcast format. Some of the earliest successful applications of comprehension-based strategies were at the beginning levels of instruction. In a series of studies, James Asher has shown that his Total Physical Response, a method of

iPod can display images for extra-linguistic support.

language teaching that involves the use of physical actions, gestures, and props, is clearly superior to other beginning language teaching methods that do not provide similar amounts of understandable language input.²⁷ Similarly, beginning language classrooms that use the Natural Approach and Harris Winitz's *The Learnables* curriculum, both of which rely on heavy use of graphs, charts, props, pictures, and other visuals, have been found to outperform classrooms with more traditional modes of instruction in numerous studies.²⁸ The iPod allows educators to provide appropriate visuals for such instruction.

Another method for teaching lower-level language students is TPR Storytelling, which combines James Asher's Total Physical Response techniques with storytelling methods familiar to beginning literacy instructors.²⁹ Teachers act out key words in a story, then tell a story using that vocabulary. The story is accompanied by simple illustrations to further increase comprehension. Variations of the story are then told (and re-told) to students in order to recycle the vocabulary, followed by some simple comprehension checks. All of this can be done on an iPod or via iTunes with an enhanced podcast. Students can listen to the vocabulary matched to pictures on the screen, followed by stories accompanied by illustrations.

Intermediate and advanced learners can also benefit from having pictures accompany audio material, such as in the case of narrated lectures or other academic material that needs to be "sheltered" for comprehension. Software such as ProfCast (<http://www.profcast.com>) can convert Keynote and PowerPoint presentations into a format readable by the iPod and iTunes, easily allowing teachers to narrate and produce their own enhanced files. Using iPod, students can both watch the "slideshow" of pictures and read the script while listening to the audio.

Video

The newer generation of iPod players and current iTunes software support the viewing of video. This video, properly chosen, can provide an additional rich source of motivating input to students. Video can even be captioned to give students additional assistance with the text (especially useful for viewing videos via iTunes). All levels of proficiency can benefit from good sources of video. Authentic video clips can be used for more advanced students, or for lower-level students with appropriate support, such as providing a preview or review of the new material, or using a slower rate of speech.

The success of multimedia technology in providing sources of understandable language to students has been shown in numerous studies that use web-based and multimedia materials. For example, students who watch videos in the second language make gains in acquisition. In one study discussed by Zhao, second-semester Spanish students performed significantly better in speaking and listening after being exposed to Spanish-language television programs compared to students in a traditional classroom.³⁰ Numerous studies on the use of captioning with second language videos have shown that the addition of textual support facilitates acquisition by increasing comprehension.³¹

Audio/Video Plus Script

Most language students benefit from being presented with text to read along with the audio. Audio and video material can be provided with accompanying scripts that students can easily access using iPod players with screens and in iTunes. Using the lyrics tag feature of audio files found on current generation iPod, iPod nano, and in iTunes, text can be attached to the audio file in such a way that listeners can view it as they listen.

The lyrics or summary tag can also be used to place additional information, assignment instructions, comprehension and discussion questions, and other relevant instructional text to go along with the audio. Anything a teacher would otherwise present in text form to students can be included here.

Video on iPod can provide a rich source of motivating input.

iPod can be used to access text as well as audio and video.

Materials and Classroom Applications

Sources of iPod Language Learning Materials

Language education material for the iPod can be classified into three basic categories based on its source of creation: commercial- or community-generated, teacher-generated, and student-generated. Each category can provide potentially useful sources of language input. Each category may involve the use of audio-only, enhanced, and video podcasts.

Podcasts are audio and video programs that can be “subscribed” to online and automatically downloaded through iTunes. Podcasts have some characteristics particularly useful for language education. First, podcasts at their best are personal, creating a one-to-one connection between the speaker and the listener. The iPod and other portable listening devices provide the user with a very intimate audio experience. This intimacy can foster greater interest on behalf of the listener as well as greater connection to the target culture via that personal connection. Second, podcasts can provide a very diverse menu of language input, far beyond the range of traditional classroom resources. This variety consists not only of dialect and usage, but also of topics and levels.

Commercial and Community Materials

Commercial and community materials include anything produced by someone other than the teacher or the students. Audio and video programs intended for native speakers, pedagogical materials prepared by publishers, and audio and video files produced by the community (universities, schools, and other educational institutions) would all fall under this designation. One particularly useful source of such materials comes in the form of podcasts. Podcasting has created a vast virtual listening library for teachers of languages. In language education, this means that listeners interested in everything from baseball to deep-sea fishing may be able to find something on those topics in the target language. These materials are best screened and vetted, of course, by K-12 instructors with an eye toward the particular needs of their students.

The best source for commercial and community materials is the iTunes Store podcast collection. The directory has listings for both K-12 and Higher Education podcasts, ranked by popularity. You can search for the topic that you are interested in, subscribe to the podcast, and download the episodes desired all through iTunes. Another good source for teachers is the Educational Podcast Network organized by the Landmark Project (<http://epnweb.org>).³² The Network has a listing of several commercial and community-generated podcasts arranged by subject matter, including second languages. A wide variety of language materials are listed, from beginning to advanced levels.

Teacher Materials

With the very accessible recording feature of the iPod and iLife, teachers can easily create their own materials specifically suited to their students’ language and level. These can consist of supplemental materials based upon the textbook or other appropriate sources of language, assignment instructions, questions for students to consider and record a response to, and a variety of other tasks. It is also possible for teachers to record conversations or stories told by other proficient speakers that would provide students with different sources of input (especially useful in a foreign versus second language environment). As noted above, teachers can also capture Keynote presentations using third-party software, which allows them to easily include visual support for the audio.

Teachers can use iPod to create materials to supplement the textbook.

Teachers looking for ways in which other classes have used podcasts can go to the Education Podcast Network for a list of schools that have used the iPod and podcasting as part of their instruction. For a general tutorial on creating audio materials for classroom use, see Shaun Else's Podcasting in Education website (<http://chatt.hdsb.ca/~magps/boylit/Podcasting%20in%20Education>). For those interested in using Apple's GarageBand 3 and iLife, there are excellent tutorials by Apple (<http://www.apple.com/support/garageband>).

Student Materials

The recording and editing features of the iPod and GarageBand software allow students themselves to produce materials that can be used for instruction and assessment. Intermediate and advanced students, for example, can be involved in production teams to produce audio files based upon a prepared or teacher-edited script. Advanced students can record conversations with other students or with native speakers either at the school site or with a partner school from a country that speaks the target language. Video skits and assignments can also be made with iLife. Students can also use iPod and iLife to create audio files for narrow listening, as described earlier.

Another teaching strategy particularly well suited for student recordings with iPod is "handcrafted audio," an extension of handcrafted books in which more proficient target language students prepare reading materials for reading by less proficient students.³³ Upper-level language students can make audio files, enhanced podcast files with illustrations, and even video files on a variety of topics for their peers and for lower-level students. These files can eventually form part of a virtual library that students can access or publish to the wider community via podcasting. Another possibility is to use a form of "cross-linguistic" tutoring via handcrafted audio, where native speaking students of the target language record audio for students in language classrooms. Spanish-speaking students, for example, can create stories and recordings for students studying Spanish, while native English speakers can create materials for English language development classrooms.

Teachers can also make connections online with their peers in other countries that speak the target language, and create a language exchange between their classes.³⁴ Students draw up a list of questions they want their "audio penpals" to speak about while teachers provide guidance to their own students on how to make their recordings comprehensible to their penpals, such as slowing speech rate or avoiding difficult slang. Students in turn record files in their native language, and the files are exchanged online or made part of a public podcast. This activity can easily be combined with narrow listening, with multiple recordings on the same topic from different students. iLife software can be used to create a webpage for students on which to put their "final draft" podcasts for download by other language learners on the Internet, or the material can be posted to the school's internal academic server for use exclusively within the school or district.

Some Current Applications in Language Education

A variety of schools and districts are already taking advantage of the possibilities of using iPod and iTunes in language education.³⁵ This section focuses on some current applications and how they are making use of the unique properties of iTunes and iPod in providing language instruction.

English as a Second Language (ESL) Podcast, produced by the Center for Educational Development in Los Angeles, is one of several free English language learning podcasts available via the iTunes Store for teachers and students. Students can either navigate directly to the home page to listen or download files, or subscribe via iTunes.³⁶ ESL

Examples of two podcasts for language learning:

- English as a Second Language (ESL) Podcast
- Voice of America's Special English Podcasts

Podcast focuses on providing comprehensible language input on daily topics of interest to intermediate and advanced English learners. Each podcast begins with a short dialogue or story read slowly, at about 70% of native rate. This assists students in comprehension, consistent with previous research on speech rate reduction in language acquisition. Next, students listen to a discussion of the dialogue by the host, who re-tells, elaborates, and explains the dialogue and the various expressions used in it in English. Finally, listeners hear the dialogue or story read at a native rate of speed, which gives them another pass at the input and boosts their confidence since they are now able to understand it spoken at a native rate.

Another example of a sound pedagogical approach to language teaching with the iPod is the Voice of America's (VOA) Special English podcasts.³⁷ The VOA Special English program presents daily news and in-depth feature stories written with a controlled set of vocabulary (1500 words) using short clear sentences written in the active voice and a limited number of idioms. The audio podcasts are read at approximately two-thirds of native rate to increase comprehension. While no explanation or review of the stories is provided, a full text of each story can be found on the website for individual or classroom use. The stories are by definition topical and many are likely to interest secondary students. The use of the controlled vocabulary helps ensure comprehensibility while giving authentic news content to students.

There are also several video podcasts now available. Many of these attempt to adapt traditional instructional models to the iPod technology, with varying degrees of success. Certainly there is great room for improvement, and K-12 educators will need to select carefully from the currently available options. The range to choose from will undoubtedly expand in the coming years, but in the meantime teachers can use the principles outlined above to judge the quality and appropriateness of the podcasts and commercial products now available.

Recommended Reading

Educators wishing to familiarize themselves more with second language acquisition and the use of iPod and iTunes in language teaching may wish to consult the following:

- For an overview of language acquisition theory and current research, see Krashen, S. (2003). *Explorations in Language Acquisition: The Taipei Lectures*. Portsmouth, NH: Heinemann, especially Chapter 1. For an additional and at times contrasting viewpoint, see Lightbrown, P. & Spada, N. (1993). *How languages are learned*. New York: Oxford University Press.
- Several language teaching methods books and articles provide overviews of comprehension-based approaches that can be adapted to iPod and iTunes use. See, for example, selected chapters in Turnbull, M., Bell, J.S., & Lapkin, S. (2002). *From the classroom: Grounded activities for language learning*. Toronto: University of Toronto Press. For TPR and TPR Storytelling, see Ray, B., & Seely, C. (1997). *Fluency through TPR Storytelling*. Berkeley, CA: Command Performance Language Institute. See also the TPR Storytelling website at <http://www.tprstorytelling.com>. A good overview of research-based methods is also found in Krashen, S. (1997). *Foreign language education: The easy way*. Culver City, CA: Language Education Associates.
- For a useful tutorial on podcasting in language education, see Stanley, G. (March, 2006). Podcasting: Audio on the Internet comes of age. *TESL-EJ*, 9(4), 1-7. (Retrieved May 20, 2006, from <http://www-writing.berkeley.edu/TESL-EJ/ej36/int.pdf>). Further information and links to current language podcasting sites can be found at Gary Cziko's ATALL/Input Wikibook entry (retrieved May 25, 2006, from <http://en.wikibooks.org/wiki/ATALL/Input>).

- For a discussion of heritage language speakers in the U.S. and a good overview of needs of this population, see Tse, L. (2001). *Why don't they learn English? Separating fact from fallacy in the U.S. language debate*. New York: Teachers College Press.

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5. As Zhao (2005) notes: "The essential role of input remains unchallenged across different perspectives to second language acquisition, be it the dominant behaviorist perspective in the 70s or the current prevalent socio-cognitive perspective. The current approaches to second language acquisition, ranging from the universal grammar position to the input-interaction perspective, all embrace input as a necessary component, although they differ in their emphases on the type and amount of input that is considered crucial to triggering learning." In Zhao, Y. (2005). *Technology and second language learning: Promises and problems. Working Papers on Technology in Support of Young Second Language Learners Project*. Oakland, CA: University of California Office of the President (UCOP). Retrieved May 20, 2006, from <http://www.ucop.edu/elltech/zhaopaper011505.pdf>.
6. A corollary of the central role of input is that speaking and writing ("output") emerge from listening and reading. Students in comprehension-based classrooms speak when they are ready to; there is no "forced output." Forcing students to speak before ready can have definite negative psychological consequences, and is detrimental to language acquisition.
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15. Courchene, R. et. al (1992) *op. cit.* Krashen, S. (2003). *Explorations in Language Acquisition: The Taipei Lectures*. Portsmouth, NH: Heinemann.
16. Zhao (2005) *op. cit.*
17. For intermediate and advanced users, the screen is helpful but not always necessary, especially for audio files. The less expensive iPod shuffle would be perfectly adequate for such students for the core use of an iPod in language acquisition—providing large amounts of audio input. Thanks to Stephen Krashen for this observation (October, 2005), personal communication.
18. The problem of concurrent translation can be illustrated by what we may call the Celsius Problem (see Krashen, S. (1985). *The input hypothesis: Issues and implications*. New York: Longman). Americans have not learned the Celsius temperature scale in the past three decades despite massive exposure to it via public displays (such as bank signs) and news announcements. The reason for this failure is that the temperature is presented in concurrent translation: When people see the Celsius temperature on a display, they ignore the “language” that they can’t understand, knowing that if they just wait a few seconds, they will get it in a system that they do understand; that is, in Fahrenheit. My own unscientific survey of more than 5,000 secondary teachers attending various workshops I’ve given over the past five years has confirmed that this is the case. When asked to give the room temperature in Celsius, fewer than 1% of teachers are able to do so without paper and pencil calculation.
- Similar results occur in language teaching. Concurrent translation eliminates the need for acquirers to attempt to understand the new language, and cuts down on the amount of comprehensible input, thus impeding acquisition. Constant back-and-forth translation, whether by sentence, word, or paragraph, also breaks the “flow” of comprehension. Despite its documented failures, concurrent translation is still the most popular method among both commercial language programs and, unhappily, nearly all of the beginning language teaching podcasts available at the time of this writing.
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27. See for example: Asher, J. (1966). The learning strategy of total physical response: A review. *Modern Language Journal*, 50(2), 79-84. Asher, J., Kusudo, J., & de la Torre, R. (1974). Learning a second language through commands: A second field test. *Modern Language Journal*, 58(1-2), 24-32. Asher, J. (1977). "Children Learning Another Language: A Developmental Hypothesis." *Child Development*, 48, 1040-1048.
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32. The Educational Podcast Network is located at <http://epnweb.org/index.php>.
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35. "iPod Personalizes Language Learning." Apple Education K-12 Education website. Retrieved 5/24/06 at <http://www.apple.com/education/profiles/brearily/>.
36. ESL Podcast's homepage is <http://www.ESLPod.com>. The Center also produces an academic language podcast for college-bound students (TOEFL Podcast) and a serial narrative written especially for English language learners (English Through Stories).
37. Voice of America website: <http://www.voanews.com/specialenglish/index.cfm>.