

Miriam Plieninger, Babbel's Director of Didactics, developed a singular methodology for teaching languages via a mobile app that combines and recontextualizes elements of disparate theories of language pedagogy. Her goal was to reinvent language learning for autonomous learners by leveraging the unique affordances of mobile devices. In this article, Miriam explains how aspects of the communicative approach to language pedagogy along with behaviorism, cognitivism and constructivism inform Babbel's method. This translation of the original, first published in 2011, has been updated and adapted from the original to reflect changes made to the platform since it was written.

Babbel's Mix of Pedagogical Approaches for Digital Language Learning

Miriam Plieninger

Introduction

Babbel is a mobile language learning app for autonomous learners and those participating in in-house company training. Alongside the web browser version (accessible at www.babbel.com), there is also a mobile app which currently offers fourteen learning languages accessible from eight "display languages". Babbel's pedagogical method is designed around small, achievable steps, by engaging the learner's personal interests and addressing their communicative needs to instill the joy of communicating in a new language. In order to meet the diverse needs of adult learners worldwide, Babbel integrates methods and techniques from the behaviorist, cognitive, constructivist and communicative approaches to language pedagogy. This article touches on these theories in the order in which they came to prominence. It also discusses how these methods have been meaningfully combined and re-interpreted in the context of digital learning media.

1 Behaviorism

The behaviorist model of language learning posits that learning occurs in imitation of actions and patterns repeated so often that they become a behavior in their own right. This is typified by the so-called “pattern drill”. Behaviorist theories of language teaching approaches are based on the assumption that foreign languages can be learned in the same way as one’s mother tongue — in other words, through listening and repeating. From the 1940s up until the 1970s this “audio-lingual method” was used in language labs, with learning cassettes, etc. Even nowadays, this approach can still be found in many digital learning media for independent study (Roche 2005, p. 14f). Another approach derived from behaviorism is “programmed instruction”. Here, learners complete a programmed sequence of short instructive presentations, followed by concept-checking questions. If all questions are answered correctly, the next presentation begins. If a question is answered incorrectly, the same lesson or input is displayed again for further practice (Kerres 2001, p. 58 ff).

Behaviorist techniques are widely viewed as old-fashioned and have largely fallen out of favor with linguists and language instructors. Critics of behaviorist theories note that it is based on a questionably simple stimulus-response model that assumes each new stimulus will trigger the same behavioral reaction in different learners. Nowadays, however, the importance of learning based on individual attitudes, predispositions, prior knowledge, interests and motivations is widely agreed upon; it also appears that each individual’s behavioral responses to different prompts and stimuli differ (Faulstich et al. 2008, p. 27). Furthermore, it was shown that learning a foreign language is not possible through pure imitation: learners must consciously engage with the material to interpret meaning from it (Brodrun 2008, p. 15).

Babbel, unlike other digital media for autonomous language learners, does not concentrate solely on one, but rather selectively picks out various methods and modernizes them. The strict structure of presentation-question-repetition of the programmed instruction approach is not used here, since it’s too rigid for Babbel and leaves no room for varied content. Instead of a static presentation, new learning content is introduced through interactive exercises. Exercises include speaking words and phrases aloud, matching images and words, ordering translations, and writing out new words and phrases. What’s more, learners discover the meaning of a concept or phrase via realistic dialogues that provide invaluable context. In all of the tasks, simple but direct feedback states whether an answer was correct or not. Learners decide whether to repeat an exercise, depending on their own subjective impression of their progress. Audio-lingualism has also been revamped and integrated into other methods. This ensures that language structures can be cognitively understood, varied

in sentences and ultimately remembered over the long-term. All new vocabulary can be practiced by listening and speaking, which not only provides pronunciation practice, but also helps the vocabulary stick in the working memory (Stork 2003, p. 78) (Fig. 1).

As stated earlier, Babbel's method combines these listening and speaking exercises with reading and writing. Like certain other language learning apps, Babbel provides explicit explanations of grammar rules and phonetics (Fig. 2). In addition, the speech recognition technology integrated into the Babbel courses offers far more than mere sound bites: learners' speech is compared to a baseline and analyzed by modern, self-learning recognition algorithms. Learners' pronunciation is assessed and judged if their pronunciation is comprehensible. This approach allows learners to gain confidence through repetition, and may help allay their fear of speaking with natives. The goal is to encourage every Babbel user to eventually have real-life conversations.

Fig. 1: Voice recognition

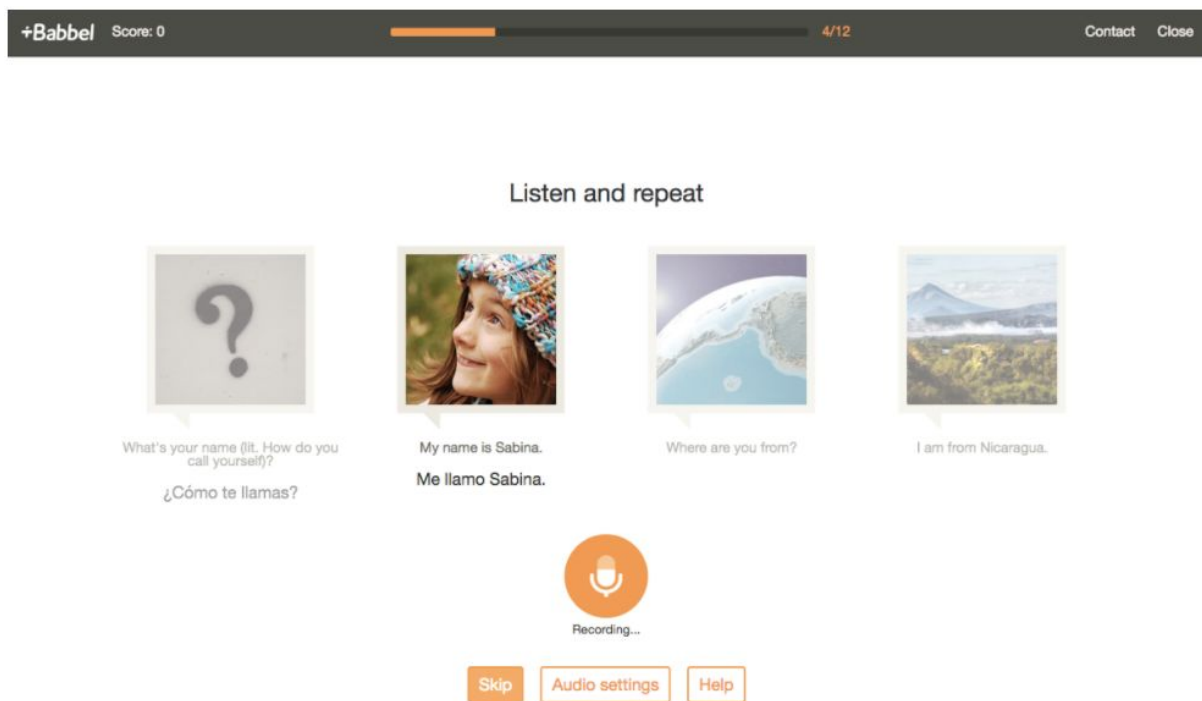


Fig. 2: Explanation of phonetic rules

How to pronounce CH

In Spanish *ch* is like the _____ :

el chachachá ≈

chino ≈

escuchar ≈



ch as in church

ch as in character

2 Cognitivism

Cognitive approaches to language teaching focus on how information is processed by the brain. Cognitivism is concerned with how learners perceive information, store it away and then retrieve it again. In contrast to rote behaviorist approaches, learners are encouraged and shown how to consciously and independently employ cognitive strategies to recall information. Furthermore, it is assumed that learners need to clearly understand the rules of a language system in order to internalize it (Roche, 2005, p. 18f). Cognitive approaches have dominated learning theories since the 1980s. Especially in the case of media exclusively designed for self-study, the basic idea is to be able to apply learning strategies independently and understand language systems. However, earlier cognitive methods have been criticized for formalizing information processing systems, while not sufficiently taking into account the learner's individuality. Newly learned material and input is always linked to existing structures in the memory, so processing information can be defined by the individual, as opposed to the stimulus-reaction model of behaviorism (Issing 2011, p. 25).

Therefore, some adaptive learning programs have been developed in which the choice and sequence of the course content is automatically adapted to the learners. In order to meet the heterogeneous needs and background experience of its audience, Babbel instead offers a flexible approach. A wide range of course content adapts to different interests and learning needs. Many courses can be completed in a modular manner: the selection and sequence of lessons is up to the learner. However, much of Babbel's content can be found in the "progressive courses", each of which successively builds upon the foundations laid in previous lessons. Learners seeking to progress past their existing level are advised to work through Babbel's Beginner's,

Intermediate and Advanced Courses sequentially, as the pedagogical content builds sequentially to form a comprehensive whole.

The memory model of cognitivism, on the other hand, was adopted in the Babbel method. New information is stored away within less than one second, and only what has attracted sufficient attention in this short time stays in the short-term memory. In the short-term memory only “7 plus/minus 2 units (numbers, letters, syllables, words, etc.)” are stored away and only for about 15 seconds (Issing 2011, p. 25). If, however, the information is then frequently repeated and used, it can be stored in the long-term memory. The information is “linked to already existing knowledge from the long-term memory and thus encoded” (Issing 2011, p. 25).

Babbel courses always introduce and drill new vocabulary in units of three to four words or chunks (e.g., groups of words, phrases and clauses), which are accompanied by illustrations and pronounced by a native speaker. A typical sequence is as follows: first, they are pronounced aloud, then translations are matched to the correct phrase, and thirdly, they are typed out.

Each phase lasts approximately 15 seconds. A second and sometimes a third unit of three to four words is then introduced and practiced step by step (see Fig. 4). In the beginner’s courses, the mix of new vocabulary is often followed by a dialogue between two native speakers, in which the new words are used in context and linked to content from previous lessons (see Fig. 5), as well as numerous repetition tasks. The vocabulary units always stem from a common word field, so that they can be stored away with the relevant content. Many Babbel lessons can be completed within ten to fifteen minutes, so that the learner does not feel overwhelmed. Such lessons are easily integrated into one’s daily routine, for example, while commuting or on a break.

Fig. 4: Vocabulary task with three chunks

Choose the correct translation



between the station and the airport



There is a canal.



I prefer the sea.

Je préfère la mer.

Il y a un canal.

Fig. 5: Using vocabulary in context

Il y a la mer et il y a aussi un port.
There is the sea and there is also a port.

Et à Paris, il y a le canal St-Martin et la Seine.
And in Paris there is the St. Martin Canal and the Seine.

Oui, mais _____ n'est pas la mer.
Yes, but a river isn't the sea.

n u f u l v e e

Show solution

This system of illustrating vocabulary's meaning, using both written and spoken texts, links new words and concepts in the target language to pre-existing knowledge. Studies have shown that vocabulary is particularly easy to remember when it is not only heard, but also spoken aloud (Stork 2003, p. 78). What's more, this method is effective for both auditory and visual learners, while spelling the words out also acts as a visual aid. Paivio (1986) suggests that different channels of perception don't actually work

separately, but are rather supported by so-called dual coding that combines images and written or spoken text.

Critics of this approach (e.g., Weidenmann 2011, p. 77f) point to the “split-attention effect”: learners are overwhelmed by this “divided attention” because they do not know where to direct their attention. This criticism, however, is mainly valid for purely decorative images which are not directly related to the learning content (Schnitz et al., 2011, p. 91f, p. 101). Babbel consciously avoids this by selecting relevant images for all vocabulary and chunks. This critique also does not distinguish between different learning content: the simultaneous presentation of texts in pictures and sounds can, for example, be very distracting when operating a machine. In the field of foreign language teaching, this dual text presentation itself is the learning objective.

Learners can and should simultaneously practice spelling, listening comprehension and pronunciation. Therefore Babbel present new vocabulary across several parallel channels. An advantage of images is that they clarify the intended meaning of polysemantic words. For example, the word “head” could refer to both the body part, or the person in charge. This is particularly important when the vocabulary is no longer being tested in the context of the original, but in the context of Babbel’s revision tool, the Review Manager.

New words and phrases are automatically added to the built-in, personalized Review Manager. Learners can review vocabulary outside the courses using the empirically proven spaced repetition method (Miles & Kwon, 2008). With this cognitivist technique for information processing, vocabulary and vocabulary chunks are revised at increasing intervals until the learner can reproduce them without any mistakes. In Babbel’s Review Manager, every word or phrase in the vocabulary section falls into one of six “knowledge levels”. Every time a user correctly revises a word, it moves up a level. Likewise, when the user gets it wrong, it moves down. This means words and phrases that come easily to the user will end up at a higher level and, consequently, need to be reviewed less (see Fig. 6). Studies have shown that spaced repetition is best for information processing and storing information, leading to effective retention of new vocabulary in a foreign language (Weiner et al., 2004, p. 481).

Fig. 6: Personal vocabulary






Review Manager How does the Review Manager work?

Your personal vocabulary (19)

To review today: 10 items Distribution of words by knowledge level:

[Review now](#) 1 2 3 4 5 6

All (19) [Review these items](#)

ENGLISH	PORTUGUESE	TIMES REVIEWED	LAST REVIEW	KNOWLEDGE LEVEL
 Hi!	Oii!	1	Nov 26, 2014	● ○ ○ ○ ○ ○ ×
 How's it going (lit. All well)?	Tudo bem?	1	Nov 26, 2014	● ○ ○ ○ ○ ○ ×
 And you?	E você?	2	Nov 26, 2014	● ○ ○ ○ ○ ○ ×
 Bye!	Tchau!	1	Nov 26, 2014	● ○ ○ ○ ○ ○ ×
 Good morning (lit. day)!	Bom dia!	1	Nov 26, 2014	● ○ ○ ○ ○ ○ ×

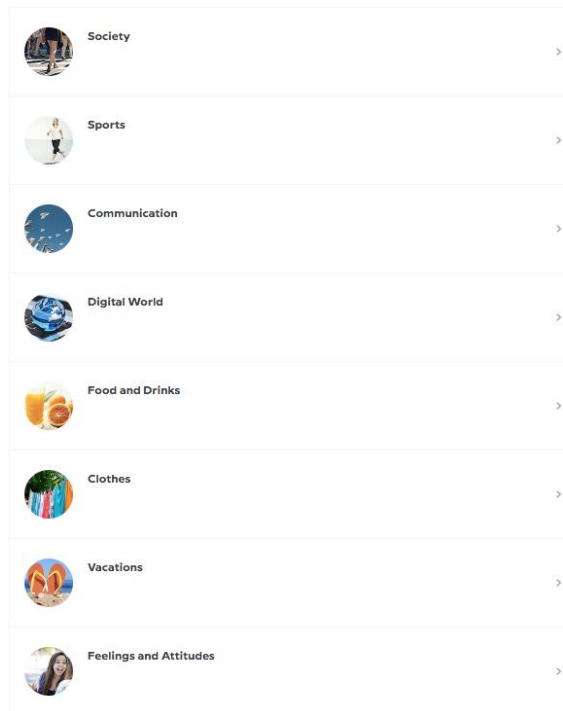
3 Constructivism

Constructivism criticizes the assumption of behaviorism and cognitivism, that the perception and subsequent processing of information can be controlled, and thus can optimize learning processes. Rather, learning means that individuals are constantly generating information independently by linking new pieces of information to existing cognitive structures, thereby constantly changing these structures. Therefore, there is no such thing as "objective information" — every person constructs something different from their own perception. Teachers and learning media cannot convey learning content from this perspective, but can only offer the content and tools which learners can use independently. This approach perfectly fits into open learning environments, such as wikis, open discussion courses or traveling abroad, but they are rarely used in editorially produced online courses. Digital courses and language learning applications grounded in constructivist approaches are suitable for highly advanced learners, who are free to browse and select lesson content autonomously and don't need explicit explanations of the foreign language system (Roche 2005, p. 20ff).

Absolute and near beginners are an important learner segment for Babbel, therefore great emphasis is placed on conveying content in a cognitively sensible manner. This is especially important since the current Babbel app is not an open learning environment, but a closed system for self-learners. The content is therefore designed in such a way that no additional learning media such as dictionaries or grammar books are required. However, the learners

are free to choose courses and lessons according to their personal interests and to work at their own pace in whatever order they like. This flexible course choice — instead of a rigid, prefabricated curriculum — corresponds to the constructivist understanding that learning objectives should be chosen independently rather than being set out by a teacher (Fig. 7).

Fig. 7: Excerpt of 25 vocabulary topics



So while the learning content itself is largely based on other pedagogical approaches, the free choice of courses is loosely linked to constructivism.

4 The Communicative Approach

The communicative approach is less theory-based than behaviorism, cognitivism, and constructivism — it is rather a melting pot for practical learning methods that promote communicative skills. The communicative approach to language teaching has contributed to learning scenarios becoming more focused on pragmatic, real-life content, the main goals being to be able to use the foreign language as well as possible in conversation and communication (ideally, like a native speaker). The emphasis is therefore on reading, listening, speaking and writing skills for everyday situations. It is more important to understand and to be understood than to express yourself without making any mistakes at all. Since interacting with communication partners always creates something new (new or modified themes and texts), communicative didactics shares strong ties to constructivism (Roche 2005, p. 26). The Common European Framework for Languages (CEFR) of the Council of Europe is based on communicative didactics. It provides recommendations


on the practical communicative skills of learners at different levels.

Babbel uses the communicative approach, as far as digital self-directed learning currently allows. For example, not all of the vocabulary used in a lesson is automatically explained, since in real situations, you have to be able to understand something in context or simply be able to accept that you can't always understand every word. In some cases, if learners still want to look up the meaning of a word, they're able to select a translation in most tasks. Grammatical points are not given all at once, but are introduced step by step. In beginner's courses, new grammatical structures are usually introduced in the first exercise with the vocabulary chunks (Fig. 8-10), then reproduced in an everyday dialogue, and then further explained later on in the lesson. A further function of the vocabulary chunks is to enable learners to master real communication situations after only a short period of learning, since real spoken elements and sentences are practiced (instead of single words).


Fig. 8: Introduction to grammar structures using the taught vocabulary

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Write the translation



I have studied a lot.
He estudiado mucho.



I have taken dance classes.
He tomado clases de baile.



I have not eaten breakfast.
No _____.

e h d s y a e a u n d o

Show solution

Fig. 9: Reproducing the vocabulary using new grammatical structures in dialogue

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Complete the dialogue

César and Diana haven't seen each other for a while and have a lot to tell each other...

Hola, ¿cómo has estado?
Hello, how have you been?

Muy bien. He estado un poco ocupado.
Very well. I've been a little busy.

¿_____ en estos días?
Have you worked in these days?

H s a t r a b o d a a j

Show solution

Fig. 10: The first of many grammatical exercises where the new structures are explained and practiced

+Babbel Score: 9 11/18 Contact Close

The *pretérito perfecto*

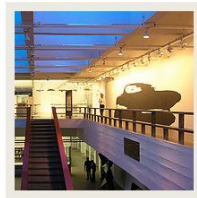
This tense refers to an action that is complete or that is somehow tied to the present.

Aún no he desayunado.
I still have not eaten breakfast.

Esta semana he ido al museo.
This week I've gone to the museum.

Ellos han estudiado ahí *desde hace 2 años*.
They have studied there for two years.

not yet already



In the course category "Words and Sentences" alone, Babbel teaches around 3000 words and 1000 sentences, with the addition of vocabulary from the many other courses. These words enter the passive vocabulary, and are then practiced in the Review Manager until they are transferred into one's active vocabulary. In addition to the passive vocabulary, the learner also encounters a myriad of additional words in example sentences, fill in the blanks, etc. All of this vocabulary can be understood from the context or the translation and also enter the passive vocabulary. It is assumed that for daily communication, learners must master at least 2000 words actively, and 8000 words passively (Bohn 1999, p. 16). Using Babbel regularly in short daily increments facilitates this amount of vocabulary acquisition.

5 Conclusion

As applied linguists and other experts research and debate over how languages are best taught and learned, the most effective theories of language pedagogy have often been justified with reference to current trends. Behaviorism, cognitivism, constructivism and the communicative approach have not definitively replaced each other, but each approach contributes to a better understanding of second language acquisition. Some aspects of these views have certainly become obsolete over time, while others have been incorporated into more modern approaches, many of them are still useful today. Therefore, Babbel's method integrates aspects from each of the approaches discussed in this text, and reinterprets the varied needs of a large and heterogeneous target group using digital learning technology. As Reinmann writes, "Learning theories alone are [...] neither a guarantor nor a great aid to pedagogical practice. In combination with knowledge about learning objectives and their analysis, about various justifications of learning environments and scenarios, they are indispensable for a professional pedagogical design in technology-based learning" (2011, p. 1, free translation).

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