

The Linguacuisine app: Learning languages and cultures while cooking

Cooking is a universal task of humanity and is intimately linked with culture and language. ***Paul Seedhouse, Phil Heslop and Ahmed Kharrufa*** *explain the advantages of using real-world cooking as a basis for task-based language learning and outlines how the latest digital technology – the free Linguacuisine app – can be used to learn aspects of foreign languages and associated cultures and cuisines whilst cooking a meal, which can then be enjoyed.*



What does the app do?

The free Linguacuisine app helps you learn a foreign language while you're cooking a meal. Choose a tasty recipe, then your own smartphone or tablet will speak to you in the foreign language in your own kitchen and talk you through all of the stages of cooking the recipe. It will give you photos and audios of all of the ingredients and equipment you need to collect and then play you videos explaining the cooking processes. If you can't understand, just press a button to get a photo, audio, text and video showing you what to do. Users can access different levels of help to support their language learning. It's best to work in pairs so you can help each other and also practice speaking to each other in the foreign language. When you've finished, eat the food you've cooked and learn something about the culture of the country. Linguacuisine has a range of recipes now available for language learning from around the world at linguacuisine.com/app, including English, Greek, Italian, French, Spanish, German, Chinese, Quechua, Korean, Arabic and Turkish.

The second part of the app is the unique 'recipe builder' authoring software. This can be used by learners or teachers of languages from around the world to input their own recipes in their own language for their neighbours, or indeed anyone else to try. You do this by making your own videos, audios, texts and photos and uploading them. The software can also be used by language teachers to input their own recipes so that their students can learn specific language points. The 'extras' facility allows upload of additional teaching material. Reciprocity is built into the app: any number of new recipes can be added in any language, any country and any cuisine around the world, using the recipe builder software. Linguacuisine is therefore an ideal vehicle for promoting cultural exchange and understanding around the world.

Users can also join our worldwide online community so they can rate and discuss other people's recipes and post information, stories and photos. So it's a good way to make friends in other countries. The app can help prepare people for a trip abroad as it helps engage them with the cuisine, culture and language in advance. It is also an excellent way of getting learners to communicate with learners in other countries. Video links have of course been available for some time, but Linguacuisine means that learners in different countries can do enjoyable shared activities together, cooking recipes from the other countries whilst learning about the other language and culture. A key distinguishing feature of Linguacuisine as compared to video streaming services is the structure it adds to the process and the additional meta-data in terms of pictures, text, and audio upon request, which are designed as learning prompts.

What's the rationale for language learning while cooking?

Linguacuisine tackles the universal problem of classroom language teaching, namely that students are rehearsing using the language in classrooms, rather than actually using the language to carry out real-world actions. It also tackles the difficulty of bringing the foreign culture to life, and the issue of how to motivate people to learn languages. A significant challenge for nations worldwide



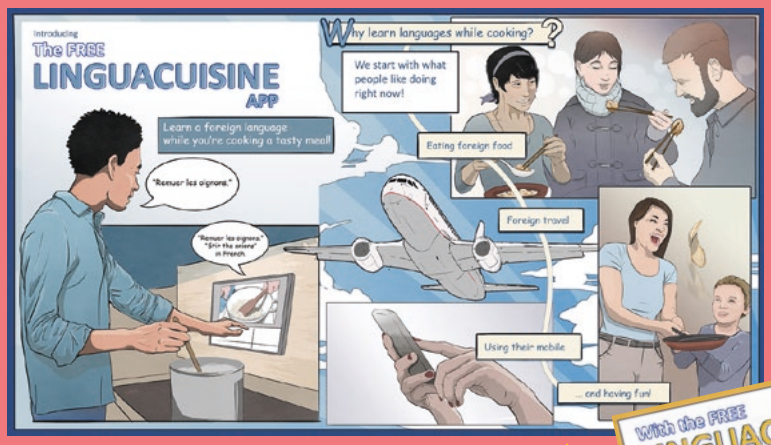
is how to improve the foreign language proficiency of its workforce and students. In the UK, the number of students gaining a qualification in a foreign language has decreased significantly, so the question is: how can we engage people with language learning?

At Newcastle University, linguists and computing scientists have been working together for the last 10 years on what language learning might look like if we asked what young people today are interested in as our starting point. Clearly, they are interested in using digital technology, in overseas travel, in global cuisine and cooking, in hands-on experiences and doing things. We used these interests as the design basis for our solution. Many technological approaches to language learning involve learning in a virtual, online world, but we wanted to use language to carry out a real-world, practical, engaging task with a tangible end product. Why cooking? It's a universal physical activity which has considerable resonance with both language and culture. It's so enjoyable that countless TV programmes are devoted to it! It involves all five senses, you can work with friends and eat the end product. But what can you learn while cooking? We found you can learn aspects of a foreign language and culture, as well as digital skills while cooking. But why on earth would anyone want to learn a foreign language while cooking? Because of the intimate connections between language, cuisine and culture. If you think of your favourite festival in your own country, then there will be particular food and language associated with it, which will give a direct window into the culture. Ayeomoni suggests that "the relationship among language, food and culture in a society is an inextricable one". Many adult learners are motivated to learn languages through their interest in foreign cuisine and culture, and this project taps into this motivation. Also, many people find technology an inherently motivating tool for learning, as evidenced by the plethora of digital materials available for learning via a variety of platforms. We also found that you learn foreign words better when you are physically touching food and cooking utensils and using them to prepare food. When you are cooking, you involve all of your senses in the learning experience – touch, smell and taste as well as hearing and seeing.

What's the approach to learning?

Linguacuisine is an adaptation of Task-Based Language Learning and Teaching (TBLT), a well-known and well-researched approach to language learning in which learners learn a language while completing a task. TBLT has so far predominantly been based on tasks to be undertaken within the classroom which simulate real-world tasks. There have been few attempts to employ TBLT in naturalistic settings outside the classroom, so this project is taking TBLT principles out of the classroom and into the kitchen! Given the emphasis of the authentic task within TBLT, we have used the kitchen environment as a learning context since the act of cooking a meal is an authentic task with a clear goal and a motivating end product.

It is well established in education that cooking as an activity can be used to develop maths skills such as counting and science topics as how bread rises. Here, though, we were looking at whether students can learn aspects of a foreign language at the same time as cooking a recipe from the foreign culture. Our vocabulary research showed that this is clearly the case: 50 learners of L2 English were tested on 16 words. The pre-test cohort mean of 8.51 rose to 12.24 in the post-test, showing a significant gain (sig .0001). Also, a group of 40 disadvantaged users (UK and Greece) was studied in great


Introducing
The FREE
LINGUACUISINE
APP
Learn a foreign language while you're cooking a tasty meal!
"Remuer les oignons."
"Stir the onions" in French.
Why learn languages while cooking?
We start with what people like doing right now!
Eating foreign food
Foreign travel
Using their mobile
... and having fun!






With the FREE
LINGUACUISINE
APP
You learn using all your senses!
It's real, it's fun, and you eat what you make!
Corta las vegetales
"Cut the vegetables" in Spanish.
Remember words through SMELL
Remember the smell of CINNAMON or "canela" in Spanish.
Remember words through TASTE
Remember the taste of MANGO or "aam" in Hindi.
Remember words through action and TOUCH
"Retourner la crêpe."
"Flip the pancake" in French.
SEE, HEAR, SMELL, TASTE and TOUCH!


So how does
LINGUACUISINE WORK?
"Cipolla."
"Onion" in Italian.
The app shows you photos of the food and ingredients and tells you their names.
"Pétrir la pâte."
"Knead the dough" in French.
The app speaks to you in the foreign language and shows you how to cook the recipe.
"Hmm, what is remuer?"
If you can't understand, get help with video, photo, audio and text explanations.
"Remuer" means "stir" in French.
Work with a friend and try speaking the foreign language to each other!
"What does veryyou mean?"
"I will push the baby buttons"




The FREE
LINGUACUISINE
APP
You can learn so many different things while you're using the Linguacuisine App!
Learn a foreign language!
"Wymieszać kapustę."
"Stir the cabbage" in Polish.
Learn to cook foreign cuisine!
Dolma are common in many mediterranean cuisines.
Put your own recipes online using the free Recipe Author tool!
Improve your digital skills!
Learn about foreign culture!
Can you use chopsticks?
Get ready for a foreign trip!
Before you travel, cook the food and learn some words and culture.
Bolognese pasta comes from Bologna in Italy!
Learn about food history
Did you know Pancake Tuesday comes from a culture of feasting before fasting?




The FREE
LINGUACUISINE
APP
Featuring:
THE RECIPE AUTHOR
With the Linguacuisine Recipe Author you can put your favourite recipe online!
Make videos clips of yourself cooking your own recipe in your own language.
Then you star in your own movie and people all around the world can learn from you!
Who made the app?
A team from Newcastle University worked on the project for 10 years
Dr Phil Heslop Computing
Dr Ahmed Kharrufa Computing
Prof Paul Seedhouse Language & Education
Newcastle University
It's free thanks to the funding of the European Union!
Erasmus+
For more information go to: linguacuisine.com
Illustration by David Charles



detail over 2 years 2016-18 and Linguacuisine made a substantial impact on their lives; evidence is on the website. Our studies have used quantitative measures with pre-test and post-tests to show learning gains as well as qualitative techniques such as conversation analysis to reveal learning processes. We obtained these results: improvements in participants' digital competence; learning of foreign languages; changes in their attitudes towards technology, foreign cuisines and cultures; the opportunity to share their home recipes and languages with others. The results are summarised on linguacuisine.com and encapsulated in this participant quote: "There is so much going on in terms of what you are learning. It's beyond belief really."

Is this a virtual world?

No – it's pretty much the opposite. You're really cooking real food in your own real kitchen and the app is helping you – we call it a real-world digital approach. It's an antidote to overdoses of the online world. We've all been there – we've spent endless hours online immersed in a digital world of virtual reality, simulations, social media, role-playing, 'games' which have ceased to be fun. Our eyes ache from the screen, our bodies have stiffened up. Sometimes the worst thing is the total disconnect between the virtual reality we have been living in and our immediate, real-world environment once we have gone offline. We have lost all connection with the 'here and now', our senses have gone stale and jaded and we're probably going to dream of androids when we nod off.

But it doesn't have to be that way and digital technology can actually be used to connect us productively with the here and now, with our everyday tasks and language learning, rather than separating us from them. So it is possible to design digital technology to help us engage more intensely and memorably with learning during real-world activities, rather than always taking us away from the here and now into virtual worlds. I remember using a *batticarne* (meat tenderiser – literally 'hit meat') while cooking/learning Italian using our digital cooking technology in Italy. The combination of the physical pounding action, the sound, smell and sight all meant that the word is indelibly etched in my memory. By activating all senses at the same time in a meaningful multimodal experience, learners are able to maximise the number of synaptic connections and the likelihood of retaining the word.

The app is on linguacuisine.com and app stores, but remember the aim is to deliver a real-world, gritty learning experience involving all 5 senses and producing something with your hands. This cannot be appreciated by simply reviewing the app online – it's not intended to be virtual in any way – so you need to go into your kitchen, put an apron on, choose a recipe in a new foreign language and see what you learn!

For teachers and language professionals

The Linguacuisine app can be used for foreign language lessons, but also for cookery/food technology lessons and cross-curriculum projects. The software can be used by language teachers to input their own recipes so that their students can learn specific language points and the 'extras' facility allows upload of additional teaching material. Students can use the app to cook and learn in the kitchen at home as well as at school. The app is a good way of preparing students for a foreign trip as it helps engage them with the cuisine, culture and language in advance. Students can also write their own recipes in their own language, informing people abroad about their culture and cuisine. Digital skills can also be developed by using the 'recipe builder' authoring software. This was co-authored with learners and designed to develop a wide range of digital skills using the DIGCOMP 2.1 framework; it has been shown to be successful in improving learner competence. We have a digital skills certification system for the project on linguacuisine.com/certification.The Linguacuisine app was co-designed with a group of migrants, refugees and asylum seekers and seeks to help them in two ways. Firstly, immigrants to a country can cook the recipes to learn about the language, cuisine and culture of their host country and help their integration. Secondly, immigrants can produce their own recipes in their own language using the recipe builder software, so they are able to have a voice and so people in their host country are able to learn something about their life prior to arrival. A number of recipes currently on Linguacuisine have been produced by migrants in the UK. The app also provides a good basis for looking at cross-cultural communication. The best event we have ever run was for a group of refugees, showing them how to cook and flip pancakes and explaining the 500-year old tradition of Pancake Tuesday. The concept of feasting before fasting is found across many cultures.

Project origins

People often ask me where the idea of Linguacuisine originated. About 12 years ago we were looking at the technology that Computing Science colleagues had produced and tried out their 'Ambient Kitchen', designed to assist people with early stage dementia with their cooking. Digital sensors could detect the food ingredients in the kitchen, find an internet recipe which used these and assist them in following it, detecting their activity and giving feedback. This should help the person to continue cooking for themselves at home rather than going into care. We immediately saw that the concept could be neatly adapted to language learning a) to maximize the links between language, culture and cuisine b) to take the sound principles developed in task-based learning out of the classroom and into the kitchen c) to give learners a motivating and enjoyable physical task with a tasty product.

In the first 2 generations of technology (2010-2012; 2011-2015) we constructed a real-world, purpose-built kitchen that speaks to learners in a European language and gives them step-by-step instructions on how to prepare cuisine. Digital sensors were inserted in or attached to all the kitchen equipment and ingredients, so the digital kitchen detected what learners are doing and gives them feedback, rather like sat-nav in cars. Although this worked well, it was limited to 5 digital kitchens in different European countries. The 3rd generation Linguacuisine technology has dealt with this issue by developing new and freely available tablet/mobile and web-based applications to extend upon the previous work. In this way the technology, expertise and materials developed in generations 1 and 2 were made available to an unlimited number of users via an online community throughout the world via the Linguacuisine app.

Finally

Robbins suggests that "food is a universal language in its own way. We may not understand what the other person calls the dish, but we know the sights, smells, tastes, and textures of the dish." Food offers us a valuable point of entry and exchange with other languages and cultures.

We finish with an invitation to all Babel readers. Why not add to the system your own recipe in your own language, culture and cuisine so people all over the world can learn from you? You can do everything in your own kitchen with your own tablet/smartphone and upload onto linguacuisine.com:8000 using our recipe builder software. There is a video tutorial to take you through the process on linguacuisine.com/tutorials. There is currently a competition (LinguaChef) for best language learning recipe with a £200 prize.

The long term aim is to build up a bank of language learning recipes from as many languages, cultures and cuisines as possible, promoting cross cultural understanding and communication. The Linguacuisine app and website provide a free infrastructure which can be used by all language enthusiasts from around the world. ¶

Paul Seedhouse is Professor of Educational and Applied Linguistics at Newcastle University, UK. Working with colleagues in Computing Science over 10 years, he has had 3 grants to build kitchens which use digital technology to teach users languages and cuisines simultaneously. The French Digital Kitchen project won the European Language Label Prize in 2012.

Phil Heslop worked as Research Software Engineer on the Linguacuisine project – he developed the software (Apps, Authoring Tool etc.) and helped run the design workshops with digitally marginalised participants that influenced the design.

Ahmed Kharrufa is a Lecturer in Interaction Design at Open Lab, Newcastle University. Kharrufa's research focus is on educational technology and more particularly the design, development, implementation, and evaluation of processes and technologies that, in addition to enhancing learning and the learning experience, can bridge the gap between formal and informal educational institutes and their communities.

Find out more

Book

Paul Seedhouse (2017) *Task-Based Language Learning in a Real-World Digital Environment: The European Digital Kitchen*, Bloomsbury.

Online

The app and a wealth of related information and publications is on the website at linguacuisine.com

Acknowledgements

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