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Cooking as a Language Learning Task

**** * * On the Internet * * ****

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Abstract

Cooking is a universal task of humanity and is intimately linked with culture and language. This article explains the advantages of using real-world cooking as a basis for task-based and technology-assisted language learning. It outlines how the latest digital technology can be used by learners over the Internet to learn aspects of languages and their associated cultures and cuisines whilst cooking a meal, which can then be eaten. We explain the rationale for the Linguacuisine app, how it works, and how integrating cooking into the ELT curriculum as an occasional, complementary activity offers opportunities on many levels to ELT teachers around the world. We explain how app design incorporates the Internet and task-based principles to develop language collaboratively and how all five senses are engaged in the task. The results of research studies on vocabulary learning using the app are also discussed, as well as the limitations of cooking as task. Finally, we consider the potential for using 'cultural tasks' other than cooking for language learning.

The Rationale for Cooking as a Language Learning Task

Over the last 30 or so years, Task-Based Language Learning and Teaching (TBLT) has had a very significant impact on ELT around the world. TBLT seeks to develop students' language through providing a task (such as asking for directions) and then using language to solve it. According to Ellis (2003, p. 9) the criterial features of a task are that: a task is a workplan; meaning is primary (language use rather than form); a classroom task relates directly to real world activities; a task can involve any of the four language skills; tasks engage cognitive processes; task completion is a

priority; and assessment is done in terms of outcomes. Willis (1996, p. 1) defines the aims of tasks as "to create a real purpose for language use and to provide a natural context for language study".

TBLT has so far predominantly been based on tasks to be undertaken within the classroom which simulate real-world tasks. Some innovations in TBLT have combined language learning with other, non-linguistic skills. Paterson and Willis's (2008) *English through Music*, for example, aims to help children to absorb English naturally as they enjoy the 'cultural task' of making music together. In addition, TBLT tasks have often been employed for online/computer assisted learning in a number of ways (Thomas and Reinders, 2010). However, there have been few attempts to employ TBLT in naturalistic, real-world settings outside the classroom.

Why try to learn aspects of English in a kitchen? The kitchen is a universal setting all around the world and cooking is the universal task of humankind in all cultures and all locations. It is a task which is so enjoyable that countless TV programmes around the world are devoted to it! It's an engaging physical activity which has considerable resonance with both language and culture. Cooking involves all five senses, users can work with friends and eat the end product. But what can people learn while cooking? We found people can learn aspects of a foreign language, culture, and cuisine, 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 anyone thinks of their favourite festival in their own country, then there will be particular food and language associated with it, which will give a window into the culture.

One rationale for using cooking as a TBLT task is that TBLT rarely involves students in producing a tangible real-world product such as people normally produce in their own homes every day. A common criticism of TBLT tasks is that they may be pedagogically sound, but they can be rather dry; Skehan (2015, p. 149) states that "many tasks one gives learners are not totally engaging, and may sometimes, frankly, be a bit boring." Whereas classroom-based TBLT may engage the learners' senses in terms of sight, sound, and (sometimes) touch, learning in a kitchen also engages the senses of smell and taste as well, delivering a vivid, kinesic language learning experience.

Cooking is presented here as an occasional language learning task supported by technology which is complementary to classroom-based TBLT. The approach to be presented employs some of the principles of TBLT but provides a welcome antidote to excesses of classroom and online learning by carrying out real physical actions in a multi-sensory kitchen, getting our hands dirty, and enjoying foreign food and culture together! Robbins (2011) 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, so teachers can learn from their learners. I explain below how the technology enables two-way exchange.

Delivering the Cooking Task through Digital Technology

So there are good reasons to use cooking as a means to learn English. Indeed there are culinary English courses which people can take and there are plenty of free online videos available. However, it would be useful if the latest digital technology could help people learn English while cooking in their own kitchens, guiding them set by step. Given that cooking is a universal cultural experience, it would also be helpful if all cultures were able to represent their own cuisine, culture, and language on an equal footing, rather than having Anglophone cultures always dominant. We therefore designed a free app which would be able to deliver these features. We explain the principles and procedures in great detail in Seedhouse (2017), but in this article we list only the TBLT design principles, for reasons of space.

When we started the project, we asked what language learning might look like if we asked as our starting point what young people today are interested in. Clearly, they are interested in using digital technology, in overseas travel, in global cuisine and cooking, and 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.

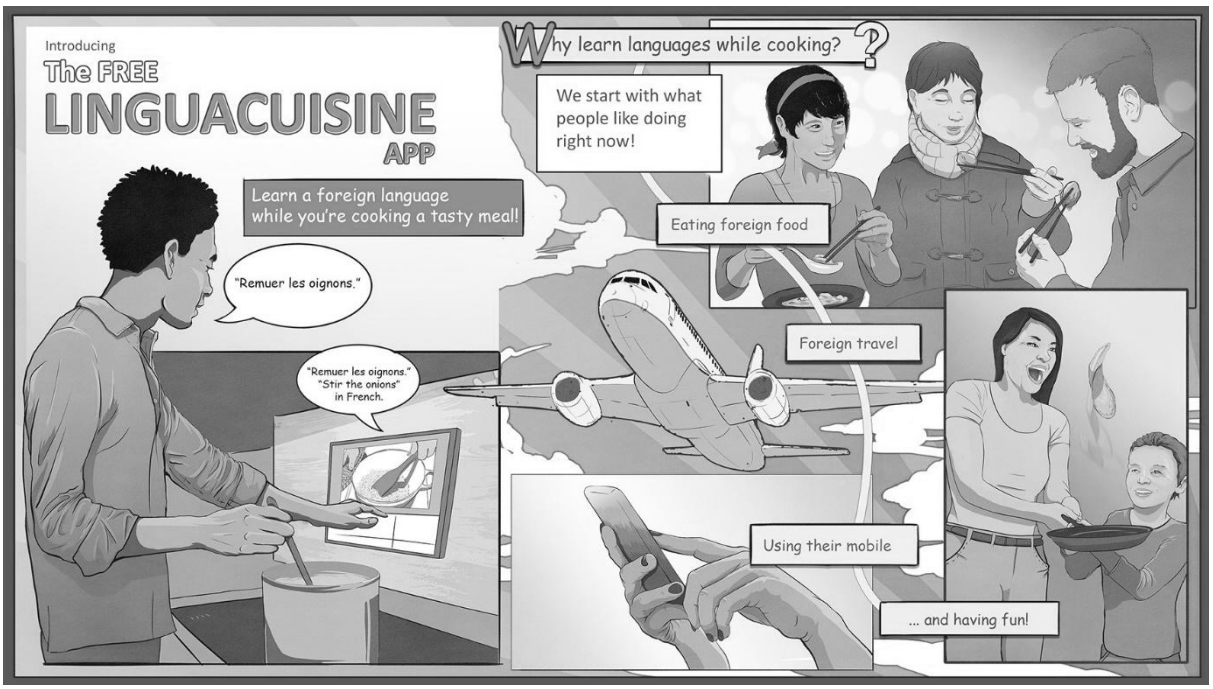

Figure 1 *Why Learn Languages while Cooking?*

What Does the App Do?

The free Linguacuisine app helps users learn a foreign language while cooking a meal. Choose a recipe, then the user's own smartphone or tablet will speak to them in the foreign language in their own kitchen and talk them through all of the stages of cooking the recipe. It will give them photos and audios of all of the ingredients and equipment they need to collect and then play them videos explaining the cooking processes. If the user can't understand, s/he just presses a button to get a photo, audio, text, and video showing them what to do. Users can access different levels of help to support their language learning. It's designed for users to work in pairs so they can help each other and also practice speaking to each other in the foreign language. When they've finished, they eat the food they'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, including English, Greek, Italian, French, Spanish, German, Chinese, Quechua, Korean, Arabic, Catalan, Vietnamese, and Turkish.

Figure 2. *How does the Linguacuisine App Work?*

The Principles of TBLT and Linguacuisine App Design

The overarching main cooking task in the kitchen was designed according to Ellis's (2003) criterial features quoted above, in the following ways. We designed it to encourage learners to focus on meaning rather than purely language – that is, they use the language to complete a culinary task, rather than focusing primarily on the language itself. Secondly, learners must employ all four language skills in a holistic manner to achieve the task. Thirdly, the task is situated in an authentic real-world context, namely the kitchen. The task is goal-oriented, involving the production of a dish. Fourthly, cooking tasks are carried out in pairs. In some cases, this might generate interaction in L2. In the UK context, for example, we paired foreign learners of English who did not share an L1, compelling them to communicate in English L2. Finally, learners can measure their own success by non-linguistic goal completion, through cooking and consumption of the food. A further characteristic of the Linguacuisine task is that it is a focused task, in that it is necessary for learners to recognise the spoken form of named L2 vocabulary items in order to carry out the task. Learners are pushed to use these items in L2 talk with each other, but are not compelled; Ellis (2003, p. 17) notes that learners can always use communication strategies to avoid using the target feature. Ellis (2003, p. 142) suggests that focused tasks are of value because they involve both reception and production and provide a means of teaching language items communicatively, under real operating conditions.

Ellis (2003, p. 21) provides a systematic framework for describing the design features of tasks, in which one must specify the goal, input, conditions, procedures and predicted outcomes. These are applied to the Linguacuisine task as shown in Table 1.

Table 1. *Task Design Features of Linguacuisine*

Goal	● To cook a meal following L2 instructions; ● To learn a vocabulary set related to tools, materials and processes; utensils, ingredients, and cooking processes.
Input	● L2 spoken, written, video, and graphical input provided by the Linguacuisine system; ● Contextual information is provided by the kitchen environment.
Conditions	● This is a convergent task in that users must agree on how to cook the meal and a single outcome is targeted. All users receive the same basic information, but receive individualised feedback according to their choices and task progress.
Procedures	● The task is intended for pairwork and for users to collaborate and produce some L2 talk related to cooking procedures.
Predicted Outcome	● A meal from the L2 cuisine which can be eaten. ● Linguistically, it is predicted that some specific L2vocabulary items will be learnt. ● Specifically, there will be concrete items (e.g. utensils and ingredients) manipulated during the task.

We can conclude in this section that it is perfectly possible to apply TBLT principles to recycle cooking as a language learning task delivered through digital technology.

Reciprocity of Languages, Cultures and Cuisines

It has often been noted that there is a typical power imbalance in ELT classrooms, with the teacher being in control of one-way knowledge transmission of the target language and in some cases there are allegations of cultural imperialism in relation to the English language and its teaching. The app attempts to mitigate this problem by offering reciprocal exchange of languages, cultures, and cuisines.

The second part of the Linguacuisine app is the '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 anyone else to try, thus enabling cross-cultural exchange and understanding. This can be done by people making their own videos, audios, texts, and photos and uploading them. That means that anyone anywhere in the world will be able to watch videos and listen to audios of themselves guiding the viewers through cooking their recipe.

Reciprocity is built into the app: any number of new recipes can be added in any language, any country, and for any cuisine around the world, using the recipe builder software. Linguacuisine can be used as a vehicle for promoting cultural exchange and understanding around the world. The

infrastructure has been set up so that any number of new recipes can be added in any language/dialect, region/country, culture, and cuisine using the recipe builder software. Students can write their own recipes in their own language, informing people abroad about their culture and cuisine.

The built-in reciprocity mitigates claims of imperialism regarding the language and its teaching. Linguacuisine does enable people to learn English language as well as British culture and cuisine, but the same people can equally upload their own recipes in their own language and make these available to people all over the world for mutual exchange of language, cuisine and culture. Immigrants to a country can cook the recipes to learn about the language, cuisine, and culture of their host country and help their integration. Immigrants can also 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.

How can ELT Teachers use Cooking as a Task?

Integrating cooking into the ELT curriculum as an occasional, complementary activity offers opportunities on many levels to ELT teachers around the world. It can be helpful in bringing the cultures and cuisines of Anglophone countries to life and in preparing students for an overseas trip as it helps engage them with the cuisine, culture, and language in advance. It is not the case that all recipes require sophisticated kitchens and equipment. Some recipes do not need any cooking at all (e.g. tabbouleh, some tapas, salad), whilst others (e.g. pancakes) are very quick, simple, and fun to cook with just a portable hotplate. So some basic recipes can be carried out in classrooms without a kitchen being necessary. The standard approach is for pairs of learners to work together in a kitchen, speaking L2 English, with the teacher available for support. Or this can be homework, in which students use their own mobiles or tablets in their own kitchens to cook English recipes with their family. If cooking English recipes is given as a homework task, it can be very effective in linking the classroom to home life. Video links have 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. Ayeomoni (2011) suggests that "the relationship among language, food and culture in a society is an inextricable one".

In the cases of educational institutions which have specialist teaching kitchens, cooking can become a cross-curricular activity, with ELT teachers working with teachers in cookery/food technology and/or teachers of digital technology. The software can be used by ELT 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 also write their own recipes in their own language. Project work could also involve students producing their own recipes from their own cuisine and culture to present to a worldwide audience, with the choice of using English or their own L1. Digital skills can also be developed by using the 'recipe builder' authoring software, which was designed to develop a wide range of digital skills using the DIGCOMP 2.1 framework. We have a digital skills certification system[1] for the project.

The app is agnostic on the question as to which English to use. Any variety, dialect or accent of English (or indeed any other language) can be uploaded to the system for use, and any recipe is possible. The most successful recipes seem to be those which have some cultural relevance or narrative to go with them. The best event we have ever run was for a group of refugees in the UK, showing them how to cook and flip pancakes and explaining the 500-year old tradition of Pancake/Shrove Tuesday. The concept of feasting before fasting is found across many cultures.

Figure 3. *Using the App*

What is the Evidence of Language Learning?

The theory of TBLT suggests that L2 learners immersed in language learning tasks will learn aspects of the L2 as a result (Ellis, 2003; Long, 2015). However, this cannot be taken for granted and we therefore produced a series of published studies over a 10-year period of learning involving individuals and pairs in relation to language, cooking and digital competence, summarised in Seedhouse (2017). The studies have used quantitative measures with pre-test and post-tests to show learning gains, and qualitative techniques such as conversation analysis to reveal learning processes. We focused primarily on vocabulary learning: 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).

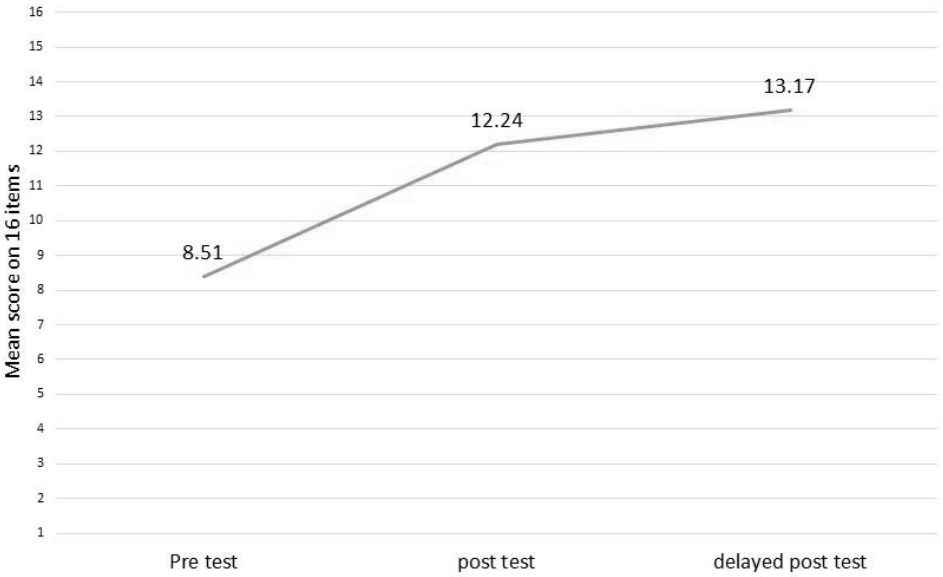

Figure 4. *Mean Score on 16 Vocabulary Items in Pre, Post and Delayed-Post Test*

The most interesting finding of the research was an unexpected one, namely that cooking as a language learning task has enormous potential in terms of linking the classroom to the home. We found (see figure 4 above) that overseas learners of English in Newcastle University had a significantly higher score for the 16 vocabulary items in the delayed post-test, which was 2 weeks after the immediate post-test. We had no idea why this had happened, as we had not given the participants any instructions about learning the items after the immediate post-test, so we did interviews with the participants, with the results shown in Figure 5, below.

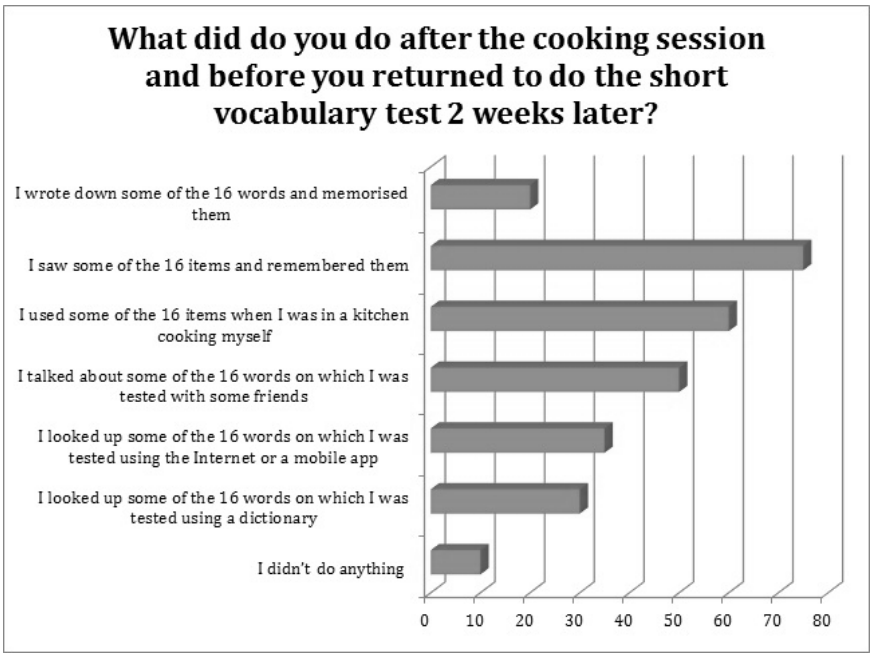

Figure 5 *Activities Undertaken by Learners between the Post and Delayed-Post Test*

While a relatively small percentage of students did not do anything, the majority encountered the vocabulary items again in their environment and some students employed active learning strategies in relation to them. They saw that the vocabulary was relevant to their real-world lives and felt motivated to continue to work on learning the items.

Park and Seedhouse (2017) carried out a quasi-experimental study which demonstrated clearly that learning vocabulary items when touching them and using them to carry out a cooking task was significantly more successful than learning the same items when looking at photos. We found that people learn foreign words better when physically touching food and cooking utensils and using them to prepare food. When cooking, people involve all of their senses in the learning experience – touch, smell and taste as well as hearing and seeing.

In addition to language learning, we found in users studied over a 2-year period improvements in participants' digital competence and changes in their attitudes towards technology, foreign cuisines, and cultures. Users who were refugees and migrants reported increased integration in the host culture and increased self-confidence at being able to portray their own language, cuisine, and culture online. Evidence of this is in the case studies on the Linguacuisine web site[2] as encapsulated in this participant quote: "There is so much going on in terms of what you are learning. It's beyond belief really."

Limitations and Future Directions

In terms of limitations, cooking for language learning is clearly intended as an occasional, complementary activity to support what happens in the ELT classroom. The Linguacuisine app delivers the cultural task of cooking for language learning. Vocabulary sets are limited to the ingredients, actions, and utensils involved, although these can be supplemented by the additional materials (video, audio, documents) which can be added in relation to culture,

cuisine, and language. Our experience has been that the task is best suited to vocabulary learning and skills practice. Grammatical items can of course be integrated into task design, but the range tends to be limited. Cooking for language learning requires resources and spaces which will not be available to all teachers and it is easier to run with small groups and simple recipes.

Cooking as language learning task is best seen as a motivating supplementary activity which can be integrated into the task-based ELT curriculum, but also more widely into the educational curriculum. Learning English through cooking could also be developed in terms of CLIL (Content and Language Integrated Learning), which refers to teaching academic subjects through a foreign language.

In terms of future directions, the same technology and TBLT principles can be applied to cultural activities other than cooking to promote language learning. Ultimately, cooking is just one type of 'cultural task' which could be used for digitally-enhanced TBLT and there are many possibilities for diversifying vocabulary sets, actions and topics by delivering different cultural tasks. Therefore, we are currently working on a grant (ENACT) to develop an app for creating and using additional cultural tasks for language learning, such as dancing, embroidery or origami.

This article has introduced the TBLT principles which underlie the pedagogical design of the Linguacuisine app, shown how these were operationalised, and illustrated the interactional and learning processes in which learners are engaged. We can conclude that it is indeed possible to employ TBLT principles online or outside the classroom, and that these provide a suitable basis for designing a digital environment for language learning while cooking. Moreover, the Internet can be used to design collaborative language learning activities. Food offers us a valuable point of entry and exchange with other languages and cultures and an angle to develop reciprocity between ELT teachers and learners.

The long term aim of Linguacuisine 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. We therefore encourage everyone to add their own recipe in their own language, culture, and cuisine so that people all over the world can learn from them — and to encourage this, there is an annual LinguaChef prize for the best language learning recipe.

Finally, cooking for language learning is great fun, a real-world, gritty learning experience involving all 5 senses in the course of producing something with your hands. This cannot be appreciated by simply reading an article or reviewing the app online, so people need to go into their kitchen, put an apron on, choose a recipe in a new foreign language, and see what they learn!

Figure 6 *Learn Languages using all your Senses*

Acknowledgements

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This research has followed the ethical guidelines of Newcastle University and received approval from its Ethics Committee.

About the Authors

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. Dr 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.

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Notes

[1] See https://linguacuisine.com/case-studies/ [back]

[2] See https://linguacuisine.com/certification/ [back]