

Learners are masters: The karaoke as an ergonomic dispositif for foreign languages learning

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Abstract

The IT landscape is expanding and teaching strategies need to adapt, which tends to lead to recognition of an ergonomic perspective for education. The interest of our study is based on the ergonomics of technology for foreign language learning. We undertook fieldwork and data collection with first-year students in Canada to explore the potential of karaoke. We drew on Dörnyei's (2014) retrodictive methodology, analysing non-probabilistic data collected from elective participants learning English as a foreign language. The results show that learners tend to develop a sense of self-efficacy. Furthermore, it appears that the ergonomic design of the device allows for adaptation to the learner, ultimately facilitating its adoption for personal use. This preliminary research is currently being developed further to explore the matter in greater depth.

Keywords: ergonomics; dispositif; foreign languages; popular culture.

1. Introduction

Our research interests lie in popular songs used in the process of learning foreign languages. The point of such work is articulated through phonetics. We have undertaken fieldwork on a French-Canadian campus to gather data with first-year students learning English as a foreign language. Foreign languages are mainly learnt through textbooks following a method or an approach. In the frame of our previous data collections on the learning of foreign languages in Canada (G-Blili, 2017) we noted that phonetics is rarely taken into account, thus creating a need in aural comprehension and a weak oral production. The latest seems to be built around the learners' lack of self-confidence and poor self-efficacy in their learning process.

The aim of this paper is to present ergonomic theory and practice through the exploratory fieldwork we have studied. Our goal in this fieldwork was to gather data related to the potential of an instrument we are further developing currently—karaoke as a foreign language learning *dispositif*. In the French language, the term “*dispositif*” is defined in a dictionary (Larousse, n.d.) as “a set of measures taken, specific means used for a specific operation.” When considering the karaoke device, it can be perceived as a tool that facilitates the acquisition of foreign languages, allowing learners to adapt it to their preferences and modify it according to their daily mood, for instance. In addition to the findings obtained from the study of Canadian learners, we present the introduction of a device currently under development for use in the field of educational ergonomics research. Thus, we present a conceptual overview including an ergonomic approach, as well as a socio-cognitive approach. Then, karaoke is shown as an educational *dispositif*. Finally, our empirical study will show the exploratory investigation undertaken according to educational ergonomics requirements.

2. The ergonomics of mediation

The field of ergonomics in education appears underrated in our viewpoint. Raby (2005) states that Vygotsky's (1988) and Rabardel's (1992, 1995) activity theory "encompasses material objects, artifacts, tools and instruments and seeks to explain how the appropriation of learning instruments brings into play collective schemes of usage A scheme is both a biological structure and an active organization of our experience which integrates the past and which evolves as it becomes adapted to new situations" (p. 3).

In his work, Rabardel (1995) refers to the instrument genesis and considers that the instrument is the result of human actions on the artefact. We accept the anthropocentric approach of Rabardel in which "human occupies a central position from which relations to technics, machines and systems are considered. This option puts man's activity at the core of the analysis and thus, allows to operate the needed inversion to refer to things depending on man" (p. 12).

The point is to allow learners' cognitive development in a material environment. To introduce everyday life's tools in a learning space, which switches on a "cognitive organisation" ranking learners' knowledge via a stimulus, these tools bring a particular context which is what instrumental mediation should be.

3. The karaoke *dispositif*

Karaoke can be employed as a pedagogical tool to facilitate the introduction of learners to phonetics and phonology with the objective of fostering phonological and sociocultural awareness, which is essential for the acquisition of a foreign language. Our conceptualisation of social-cultural ergonomics (see Figure 1 below) is based on the work of Vygotsky (1978), who proposed that learners create "tools of the mind" to navigate cognitive conflicts arising from linguistic and cultural interactions in a foreign language classroom. The psychologist emphasises that, in contrast to difficulties encountered when speaking in one's native language, those encountered when learning a foreign language are arbitrary and conscious. Learners make reference to their historical and social milieu, which they have mastered, including their alphabetisation and mother tongue. In light of the above, it can be seen that the social and cultural context in which learners operate on a daily basis provides a suitable frame of reference for the psycho-social considerations put forth by Vygotsky. In conclusion, it is imperative that learners are not stripped of their individual cultural identity.

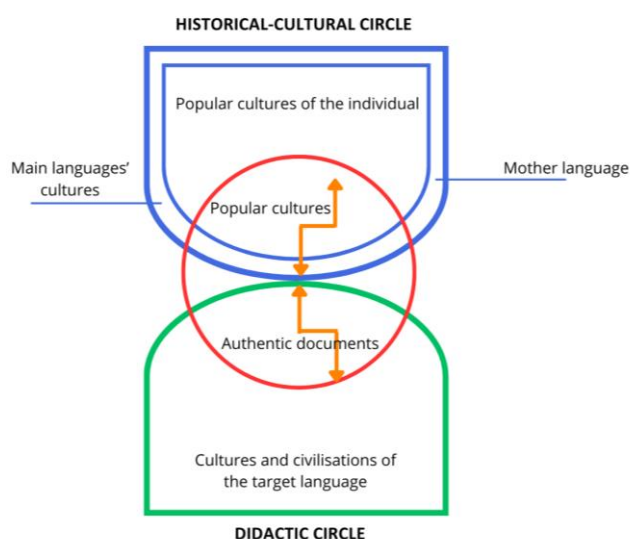


Figure 1. The hybridity of foreign language learning. Original diagram based on Vygotsky (1978).

"[T]he study of work environments is grounded in theories of mediated activities (e.g. Leontiev's activity theory, 1981; Piaget's genetic psychology, 1967; Vygotsky's theory of the instrument, 1986)" (Raby, 2005, p. 180). As illustrated in Figure 1, a correlation is evident between the historical and cultural circle and the didactic circle. The

historical and cultural circle encompasses the learner's familial cultural traditions, their native language and dominant language, and their alphabetisation. The didactic circle encompasses the cultures and civilisations of the target language. A third circle is drawn to illustrate the cultural and civilisational influences that learners may and should draw upon during the learning process. This circle encompasses popular cultures and authentic documents. In this final circle, arrows are added to symbolise the synchronisation of the historical-cultural and didactic circles, thereby illustrating the aforementioned schemes.

Some would probably suggest that students are reluctant to use the computer or the video because there is always a risk that they might break down; others will argue that it is more comfortable to stick to an instrument which you are accustomed to and will put forward a piagetian interpretation in terms of schemes (Piaget 1967). Another interpretation can be proposed which is inspired by the very nature of the instruments themselves, by their functioning constraints. (Raby et al., 2003, p. 15)

Indeed, the conceptualisation of educational ergonomics does not differentiate between social and cultural factors and those pertaining to education. Our karaoke system is predicated on this conceptual framework.

The diagram in Figure 2 below is constructed around the aforementioned ergonomic mediation. In the "synchronisation circle," two additional arrows are introduced: dynamic arrows that imply the micro and macro tasks inherent to the learning process. "In order to analyze a **work situation**, ergonomes or work analysts point out the relationships that unite behaviours and mental processes into a **task model**" (Raby et al., 2003, p. 4). The term 'micro task' is used to describe the cognitive tool that learners utilise when they encounter cognitive conflicts. The macro task may be defined as the reuse of knowledge. In the aforementioned circle, we designate this area as the 'inter space', wherein we situate the learner and the technologies. The circle below represents the immersion space for the karaoke (*dispositif*). It is noteworthy that the teachers have been excluded from this space, as they do not act as primary agents, but rather as facilitators. Consequently, they ensure the effective mediation and instrumentation of media.

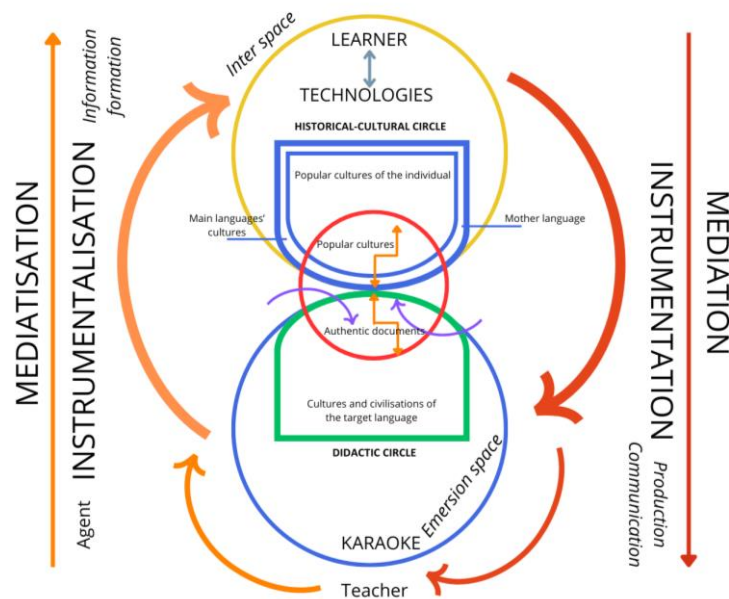


Figure 2. The Organics of Karaoke. Original diagram based on Bertin (2014).

Learners develop their own instrumental behaviours thanks to the *dispositif* showing its environmental dynamics. In our conception of educational and cognitive ergonomics, learning a foreign language would be inadequate if learners were not able to feel personal efficacy.

4. The *dispositif* enables multiliteracies

We wish to explain the difference we make between ‘oral’ and ‘aural’. The latter happens when learners are in a comprehension process and ‘oral’ is performed when learners express themselves in the target language. The language laboratory is a fair place to perform what has been learnt, to test the auditory sense which contributes to linguistic articulation.

Besides, teaching linguistic knowledge such as pronunciation in foreign languages calls on “three dimensions; the language, the culture and the identity” (Wachs, 2011, p. 184). Learning phonetics is learning what we call the ‘articulatory mechanism’ of a foreign language. By articulatory mechanism, we mean that to understand the connected speech, prosody and phonetics of a foreign language, the learner needs to acknowledge the cultural surroundings of the target language. This awareness is possible in the language laboratory in aural and oral performances. Teaching language knowledge also means that the teacher takes into consideration the cultural habits of the learners (Wachs, 2011). In fact, learning a foreign language implies a new pronunciation, which requires a physical display from the learners who could think of it as a violation of their identity.

Karaoke is an instrument set in western cultural practices which could link the learners’ identity along with the learning of foreign language articulation. When learning a foreign language, the student is in mediation with varied types of didactic aids such as audio, didactic or authentic documents or pictures which can be didactic as well as authentic, either static or animated. The way we think of the karaoke instrument combines two kinds of aids giving it a multimodal function. When learners use karaoke (*dispositif*) their auditory and visual senses are called upon. We believe that the karaoke brings a multisensory dimension which “requests more than the visual and auditory modes but the haptic mode as well” (Bara, Gentaz & Colé, 2004, p. 396). The touch and kinaesthetic senses of the learners allow them to be actors by beating to the music and prancing around.

Mediatization suggests a critical viewpoint which aims at enhancing learners’ sociocultural knowledge. The point is to respect learners as individuals, shaping their personality around a family culture and a generational culture, hence the introduction of popular songs and technologies in the *dispositif*. Besides, the learner is a social being taking part in a community of learners, which is a cultural community as well as an intercultural community, defining part of their learning in the target language.

5. Method

5.1. Context and participants

At the time of the field collection, there was a paucity of studies on karaoke in the classroom, and even fewer papers that shared fieldwork data. Our karaoke instrument has recently been introduced as a novel educational and language learning tool. In light of these considerations, we elected to undertake an exploratory study with the objective of analysing the ergonomic dimensions of karaoke.

Who?	When?	How?
• 20 students • Between 20 and 22 years old • Part chose to take this class • Other part had to take this class to pass their curricula • Learning level B1-B2	• Class is scheduled on Thursdays' evening from 5 to 7 p.m	• Non participatory observation • Collection of feedbacks • Non-probabilistic sample

Figure 3. Presentation of the research participants.

5.1.1. Collection field

According to Raby et al. (2003), when working on educational ergonomics a relevant field to collect data is the one the learner usually works in. Our observation data collection focuses on the learners completing a learning task in the environment they are used to.

In the previous section of this paper, we mention that karaoke could be efficiently set up in the language laboratory. Nevertheless, to collect accurate data about karaoke potential, our fieldwork took place in the classroom with the students gathered as a class group. The place where students are the most used to learning a foreign language is the classroom. This is where we could complete our data gathering respecting ergonomics requirements and “see what is going on there, for the finest details of a subject’s activity are influenced by sociological, cultural, organisational factors which will disappear in the traditional laboratory condition” (Raby et al., 2003, p. 4).

Because some teachers do not just base their teaching on textbooks and ICT, the point of research in ergonomics is to consider the learners’ interactions with the whole environment. In the case of our study, we did not just observe the learners’ interactions with karaoke and with the chosen songs but also with the tasks they were required to complete as well as the environment implied with karaoke—in other words, how the whole system suited the learners.

Karaoke is only relevant as a learning aid if the learners/users find a way to use it as such. It could be the way we envisage it and we could suggest it to them. Therefore, it would turn out as interesting if some of the learners showed or shared a personal strategy to use karaoke as a learning device. To collect the following data we referred to the learners’ behaviours:

- How do they use their worksheet?
- When do they look at the screen?
- Are they sympathising with the songs (e.g. the choice, the rhythm)?
- Do they voluntarily take part in the class, or do they wait for the teacher to invite them?
- Do they ask questions to further the point?
- What are their reactions when it is time to sing along?
- Do they play along and is it shyly or enthusiastically?

Learners are users of karaoke and as they use it these instrumental behaviours are rising and they manage a way to make it their own, and this eventually becomes an easy way to work since as the learners’ aim is met, karaoke’s purpose is met as well.

The investigation of instruments such as karaoke and *dispositif* necessitates the utilisation of a dynamic research methodology. Dornyei’s (2014) “‘retrodictive qualitative modeling’—that reverses the usual research direction by starting at the end—the system outcomes—and then tracing back to see why certain components of the system

ended up with one outcome option and not another” (p. 80) appears to be an appropriate methodology, as it has enabled us to predict the data that we will focus on.

6. Results

The subsequent analysis of the data collected is contingent upon the methodology employed in the field. The objective of our research was to explore the practices of the target language with our didactic instrument, the karaoke didactic tool, in order to detect a sense of personal efficacy. To this end, we have provided a detailed analysis of our three field observations with the didactic instrument. Creswell (2014) reminds us that qualitative research is interpretative in nature. Qualitative research is characterised by a process of interpretation and phenomenological description, without which it would not be possible to disseminate the observations and data collected during the exploratory phase of this research. The objective is to “emphasise the description of natural phenomena” (Crête, 2009, p. 292). As previously stated, the observations and questions are centred on the concepts pertinent to our overarching research objective, namely, to examine the didactic potential of karaoke in foreign language learning. The analysis of the data is grounded in a specific aspect of mediation with the instrument, as defined above (Fortin, 2010; Yin, 2009). In order to achieve this, the data was subjected to a process of coding.

6.1. Karaoke No. 1 and No. 2

Following the introduction of the concept of karaoke to the students, a positive response was observed, as evidenced by their smiling demeanour. The smiles displayed by some of the students indicated shyness, whereas others appeared to convey feelings of inhibition or hesitation. Nevertheless, some students displayed motivation and comfort with the forthcoming activity.

The objective of these classes was to integrate the teaching of syntax and prosody with the use of karaoke. It was therefore proposed that the students should be permitted to indicate the words in the song that were accented. The diagrams of the karaoke scenarios below highlight the key moments of our observation data collection.

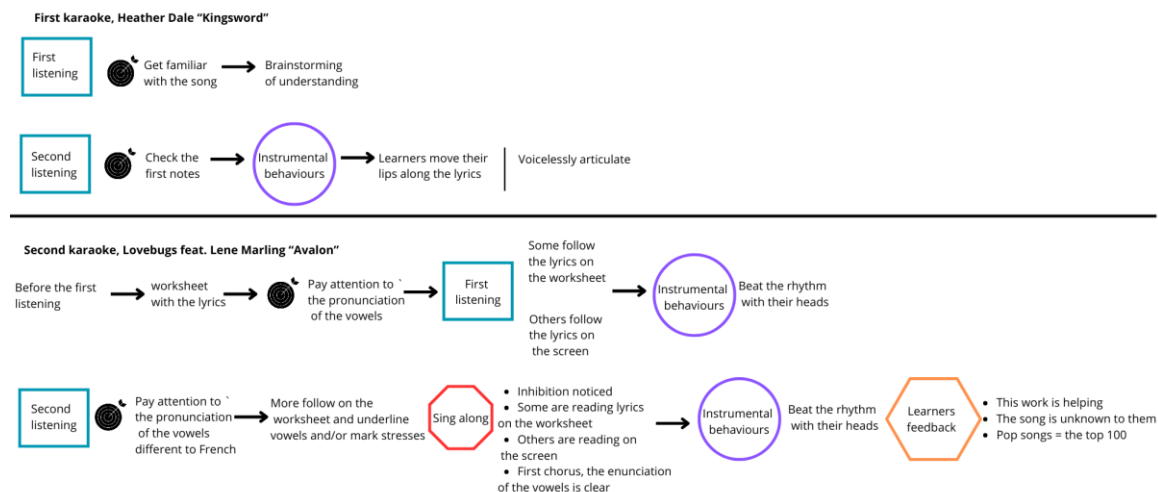


Figure 4. Karaoke No. 1 and No. 2 scenarios.

As they check their work with their teacher, it seems that all of them have underlined vowels and realised that some vowels in English become complex vowels, i.e. diphthongs. One of the students seems confused when vowels sound much like they would in French. For instance, she did not realise that the word ‘come’ was not pronounced with a [o] sound but with a [ʌ] sound. One student makes a comment that ‘I’ is a vowel bearing a diphthong. To give an example, this learner’s neighbour carries on reading a whole sentence with vowels as they would be read in French. The students laugh and she comments that it does not make sense anymore if we do not respect this phonetic rule. Another student reads the words without the diphthongs and the class laughs again. A

student points the difference between the English pronunciation of ‘love’ and the French one saying in English [lʌv] and then in French pronunciation [lov], even exaggerating the [o] sound.

Now it seems that most of them have understood the difference between French and English vowels. Only a few of them seem to understand the accentuation difference between French and English. They are asked by their teacher to listen to the song again and to carefully listen to accentuations.

6.2. Karaoke No. 3

We ask the teacher to present the last observation day with a clip from a popular series called *The Big Bang Theory*. When the teacher announces to her students how the class will start, she gets all their attention. Then, she announces that the last song will be sung by Pink. Most students nod in unison and look at each other smiling with happiness. As the worksheet is given to the students we can already hear one of them singing *a cappella*.

Before the teacher plays *The Big Bang Theory*’s clip she explains the point of showing it to them and asks them to listen to Sheldon’s speech and to focus on his speech rhythm and the emphasis he puts on his words. They will compare the English prosody to the French one.

As they watch the clip they smile showing they understand what is being said. After the clip the teacher asks them what they think of it. A student answers that he thinks that English is less monotonous than French. The teacher explains that French is quite staccato, that every syllable is pronounced, and she gives the examples of the word ‘*environnement*’ and cuts it in syllables ‘en/vi/ron/ne/ment’, and then says it in English ‘environment’.



Figure 5. Karaoke No. 3 scenario, first part.

As the first listening is over, the teacher asks them about the pronunciation. The pronunciation of some words has surprised the students. One of them gives the word ‘tear’ as an example. Then the teacher takes some time to help the students localise the accents on a few words. As the teacher says the words, we notice some students moving their hands along with the syllables.

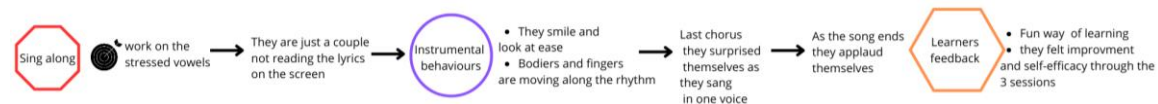


Figure 6. Karaoke 3 scenario, last part.

Fewer students answered that they felt stressed when they had to express themselves in class when expressing real situations. Raby et al. (2003) assert that “[f]inally, the aim of ergonomics is not to produce general laws, it is more to improve specific work situations” (p. 4). After the last karaoke practice, students seemed to have assimilated the purpose of oral and aural practice and that karaoke could be of help. In fact, one student shared that she felt better from the beginning to the end. A few students who were reluctant in the beginning showed more interest by the end of our observation.

The observation data collection shows all kinds of challenges faced by the learners about the pragmatic environment—the use of karaoke or the innovative kind of working situation suggested. On the contrary, at the beginning of our collection it seemed that a few of them were reluctant to take part in the task because of epistemic difficulties with their abilities in the target language.

7. Discussion

The *dispositif* (Berten, 1999) includes systems and organisations which help the users-learners to regulate their working situation and to find some ways to accept the learning environment. The dynamic environment of karaoke appears to foster the development of instrumental behaviours. While the lyrics are displayed on the screen, students take notes on their worksheet, matching the rhythm, moving their lips along the song, humming or singing along. This demonstrates the ergonomic principles of karaoke. This demonstrates that learners are capable of organising and regulating their work, and that each individual can adapt the karaoke device to suit their needs.

It can therefore be concluded that the device is ergonomic, as demonstrated in the initial phase of this fieldwork. The learners indicated an increase in their sense of self-efficacy (Bandura, 2007) with regard to their oral and aural skills as a result of the training. It is noteworthy that learners demonstrate a discerning approach to the selection of songs employed to enhance their proficiency in the target language. This provides them with a source of motivation. These findings corroborate our initial hypothesis that learners perceive a necessity to engage in oral/aural practice. On occasion, they exhibit a willingness to eschew traditional textbooks and grammatical conventions in favour of authentic language usage.

The study could not be furthered through interviews with the participants, and thus further investigation is required. This results in a restriction in the scope for interpreting our observations. Nevertheless, this fieldwork introduces a number of new elements with regard to the use of authentic documents, the acquisition of foreign language skills and the utilisation of technological tools.

8. Conclusions

This paper brings karaoke to the academic and scientific field. Through our research we explore alternative forms of learning to complete the standard foreign language class. The results we share in this paper admit that karaoke has been well accepted by the actors of a classroom, both learners and teacher. This paper conveys an original contribution to the scientific research in education. It explores the importance in resorting to popular culture for the oral practice of foreign languages. This paper also insists on the possible comfort and self-efficacy learners could find.

The karaoke *dispositif* could be an additional tool to take into a language laboratory for individual work or in the classroom for group work. It is efficient for the introduction of oral/aural practice and phonetic work involved in foreign language learning. Among our future projects we would set karaoke in the language laboratory. This fieldwork is of great interest because it could help to check a learner training potential. The karaoke *dispositif* opens a path of research for learning and teaching foreign languages. It appears important to consider the assets of popular cultures that the individual sees as part of their personality.

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