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Evaluating the Role of Multisensory Elements in Foreign Language Acquisition

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***Abstract*—**The aim of this study was to evaluate the role of multisensory elements in enhancing and facilitating foreign language acquisition among adult students in a language classroom. The use of multisensory elements enables the creation of a student-centered classroom, where the focus is on individual learner's language learning process, perceptions and motivation. Multisensory language learning is a pedagogical approach where the language learner uses all the senses more effectively than in a traditional in-class environment. Language learning is facilitated due to multisensory stimuli which increase the number of cognitive connections in the learner and take into consideration different types of learners. A living lab called Multisensory Space creates a relaxed and receptive state in the learners through various multisensory stimuli, and thus promotes their natural foreign language acquisition. Qualitative and quantitative data were collected in two questionnaire inquiries among the Finnish students of a higher education institute at the end of their basic French courses in December 2014 and 2016. The inquiries discussed the effects of multisensory elements on the students' motivation to study French as well as their learning outcomes. The results show that the French classes in the Multisensory Space provide the students with an encouraging and pleasant learning environment, which has a positive impact on their motivation to study the foreign language as well as their language learning outcomes.

***Keywords*—**Foreign language acquisition, foreign language learning, higher education, multisensory learning, pedagogical approach, transcultural learning.

I. Introduction

CHILDREN acquire languages naturally, whereas learning a foreign language at an adult age is a more complex cognitive process, which implies not just the knowledge of efficient language learning strategies, but also learning a foreign culture and way of thinking, and even learning to think in the target language. Foreign language thus becomes a tool for personal expression and transcultural understanding, and individuals may even feel different when speaking different languages [4]. When studying the language learning process in adults, the focus should be on studying the individuals' cognitive mental processes and language learning motivation. Ros i Solé & Fenoulhet [8] aim to "capture a changing mood that is increasingly moving away from an approach to language learning which highlights its value for delivering new opportunities for economic advancement and market openings." According to them "a 'Romantic' disposition places the individual at the heart of the language learning project, accentuating the personal value of the intercultural encounter."

As Cheng & Dörnyei [2] state "motivation has long been recognised as one of the key factors that determine L2 achievement and attainment in the field of foreign/second language (L2) learning. Motivation serves as the initial engine to generate learning and later functions as an ongoing driving force that helps to sustain the long and usually laborious journey of acquiring a foreign language." Cheng & Dörnyei [2] argue that "from the teachers' viewpoint, presenting a personal role model is perhaps the most powerful and influential tool in motivating their students." They also emphasise the importance of the classroom climate as a motivational strategy. Ruesch et al. [9] have further studied student and teacher perceptions of motivational strategies in the foreign language classroom. The results of their study support Cheng and Dörnyei's [2] findings that the relationships between teachers and students, as well as the classroom climate strongly influence learners' motivations. They suggest that "language teachers should focus on setting a positive example (Teacher), building a solid rapport with students (Rapport), creating a pleasant relaxed atmosphere in the classroom (Climate), and making sure that students understand the tasks in which they are engaging (Task). As teachers concentrate on teaching practices related to these macrostrategies, students will feel more motivated in the foreign language classroom."

Foreign multisensory elements create an inspiring atmosphere in the classroom as well as enhance the students' language learning motivation through encouraging communication and interaction. The multisensory elements are also great tools for entering the new paralinguistic features of the target language. The classroom can even be created into a living lab — a Multisensory Space — introducing authentic foreign elements. In the Multisensory Space you can project large images on several walls, play videos and background music, produce olfactory and gustatory sensations as well as use kinesthetic learning to motivate the students and promote their natural language acquisition. Wilson's [11] study on positive feelings about using foreign languages show that "discovering — or accessing — new aspects of oneself may indeed be the motivation for some language learners. Part of the performance of language is paralinguistic; linking paralinguistic features to utterances encourages speakers to enter into the world of the target language." He also argues that "music and images can create a different reality within the confines of a classroom, a reality that literature can create for more proficient second language users."

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The action model of Laurea University of Applied Sciences is Learning by Developing (LbD) which focuses on the students' learning process in an inspiring and innovative way. The students learn through authentic projects at workplaces challenging their competences throughout the studies. "A student graduating from Laurea will be able to act in new situations, anticipate future trends, develop new operating models and examine the world with open eyes. Laurea's mission is to be an international networked university of applied sciences with an operating method that creates links between education and the working life [12]". In this way, new competence will be produced and service innovations generated. The action model LbD involves in addition to authentic workplace projects, various workshops and living labs at the university campuses.

II. Methods

The living lab called Multisensory Space [13] was initially created in 2007 by Senior Lecturer Minttu Räty who teaches in the Degree Programme in Social Services at Laurea University of Applied Sciences. It was created based on her experiences with immigrants, disabled people and the elderly to raise the students' awareness of multiculturalism and prepare the students for their future profession as social workers. The Multisensory Space was an easily modified living lab where the visitors could experience different multisensory elements which were not always authentic, but merely suggestive evoking feelings and memories through all the senses. This provided the immigrants visiting the space with an opportunity to return to their cultures as well as gave the students a chance to learn about the immigrants' cultural values. The process of creating the space empowers the people involved. The immigrants and students feel comfortable working together and learning from each other, which promotes their well-being and is a valuable tool in their learning process. In 2009-2010 the Multisensory Space was further developed within a project called "Encounters in a Multisensory Space", and the development and promotion of the space was continued in 2011-2015 within a project called "With All Senses — Developing Open Learning Environments".

The surface area of the Multisensory Space is 30 square metres, which can be divided into two parts with connecting canvas walls. This allows the creation of two completely different learning environments or living labs, where the more traditional classroom part can be used for theoretical grammar and sentence structure studies. In the part resembling a suggestopedic classroom with large cushions and other comfortable seats, attention is paid to lighting, decor and background music, thus creating a relaxed and pleasant state in the learner. This suggestopedic learning environment is especially beneficial when practising dialogues and role-plays. For projecting large images and playing music there are two projectors as well as a sound system, and to create different cultural environments the students can use a large number of various decorative elements, e.g. curtains, tablecloths, cushions, ornaments, glassware, artefacts, posters and pictures. Authentic olfactory and gustational sensations are produced when tastings are provided during the workshops.

Brain research demonstrates that over 80% of all information absorbed by the brain is visual in nature, so it is critical to consider its significance in learning. Lighting and colour also affect learning. Studies [10] have shown that soft full spectrum lighting is optimal for learning. But in classrooms today, standard florescent lighting is the most frequent light source. Music in turn appeals to emotional, cognitive and psychomotor elements in the brain, and the studies show a link between music and increased learning. Research indicates that music directly affects pulse rate, blood pressure and the nervous system. The words of the songs are easily remembered because of a strong learning experience that enhances memory. The use of olfactory elements produces similar effects to music in the learning environment, and pleasant smells can improve cognitive functioning.

For foreign language learners, the Multisensory Space provides an experiential learning environment where they can feel themselves comfortable while familiarising with a foreign language, culture and customs. The use of auditory, visual and kinesthetic elements as well as olfactory and gustatory elements during language classes stimulates the brain of the learner and benefits his or her language learning process through building more neural pathways in the brain where the process takes place, thus also helping later recall of the information the brain has absorbed. The students are also more encouraged to use the foreign language in this positive learning environment where they can feel themselves relaxed and receptive.

Arthur & Beaton [1] have studied adult language learners' motivation to enrol in language courses. Their study seems to suggest that motivation to learn another language may be linked to good learning experiences at school. The answers in their study indicate also the importance of childhood exposure to aspects of foreign language and culture. Although language learners have a number of extrinsic and intrinsic reasons for studying languages, the primary reason seems to be linked to personal fulfilment and willingness to find a time slot for this in their everyday schedules.

During a French course for beginners the Multisensory Space can be created into a multisensory French café for the role-plays, which offers a multitude of ways to learn the syllabus of basic French [7]. Role-plays and experiential learning enhance the language learning process reinforcing the cognitive connections in the learner. The role-plays include dialogues between the customers and waiters, where the students also learn to greet each other according to French greeting etiquette. For instance cheek kissing is sometimes considered as the social norm and failure to perform *une bise* in a proper way can lead to a misunderstanding.

As food plays a very important role in French culture, these issues are also discussed during the language learning activities. The multisensory approach promotes understanding foreign cultural values through tactile and visual elements, whereas listening to French music promotes learning the pronunciation through strong auditory stimuli.

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Coffey [3] has studied "life-story accounts used to gain insights into the symbolic value language learners attach to French. The concept of 'interpretative repertoires' is used to show how participants situate personal narratives in broader cultural discourses (a 'Francophile repertoire') to construct their experience of Frenchness". He suggests that "analysing life narrative accounts can help us to understand how the repertoire of Francophile orientation is sustained and reproduced by individuals as they bring in to relief discursive resources through which they enact identities as both language learners and Francophiles." In Coffey's study "France and French were alluded to as an aesthetic ideal (a shared cultural repertoire of otherness); and a place of encounter (an individual repertoire of personal transformation). Broadening our understanding of the symbolic values attached to language learning *and* to the learning of specific languages offers a way to extend our awareness of the socially and historically situated motives that sustain learners' attachment to a language." For many Finnish students France and French culture also represent an ideal linked to cultural values and aesthetic properties, which sustain their attachment to the language. Some Laurea students have had very positive experiences while studying French at comprehensive school, e.g. monthly events organised around a table containing French food tastings, or they have familiarised themselves with Frenchness through French films.

III. Results

The differences are remarkable when comparing the classroom atmosphere among the students in the Multisensory Space with a more traditional classroom environment. The students are less inhibited to express themselves in the foreign language and more willing to interact with each other. Qualitative and quantitative data was collected through two questionnaire inquiries at the end of basic French courses among the Laurea's students in December 2014 and 2016. The evaluations discussed the students' motivation to study French as well as the impacts of using the Multisensory Space on their learning outcomes.

The first evaluation [7] was carried out in 2014. The data collected comprised 16 replies to seven questions. The answers were given on a 5 point Likert scale, where five was "strongly agree", four was "agree", three was "neither", two was "disagree" and one was "strongly disagree". The results indicate the students' motivation to study French during the course (4.31). The students regarded studying in the Multisensory Space as beneficial to their language learning motivation (4.44) and cultural competence (4.69). The multisensory elements also enhanced their learning outcomes in sentence structures (3.94), vocabulary (3.75) and pronunciation (4.5).

After the first evaluation the multisensory language learning approach has been further developed for the purposes of the studies in French as a foreign language, and a similar evaluation was carried out among the students in December 2016. The second evaluation consisted of 10 replies, and the results are consistent with the previous evaluation. They also show that the students were highly motivated to study French during their course (4.6), and they considered that the Multisensory Space benefited their language learning motivation (4.6) as well as cultural competence (4.8). The students in the second evaluation group also regarded the Multisensory Space as useful in learning sentence structures (4.2), vocabulary (4.2) and pronunciation (4.2). In the future the multisensory language learning method will be developed and disseminated also to other educational institutes in Finland as well as in other countries worldwide.

In spring 2017, the multisensory language learning method will be applied during an English language course among a group of students diagnosed with minor learning difficulties. The beginning of this experiment has been very promising and the students have given positive feedback stating that now they finally have the courage to express themselves in English. For the students suffering from learning difficulties studying in a group of 30 almost fluent English speakers can often cause negative stress, and thus even prohibit their language learning process.

IV. Conclusions

Traditional classrooms can sometimes be very intimidating to language learners, and thus affect negatively — and even hamper — their language learning process. Language learning process can be facilitated by the use of various creative methods and multisensory stimuli, however traditional in-class activity environments do not always allow their use. There are different language learning types: auditory learners, visual learners and kinesthetic learners; language teachers should be able to provide varied activities to these different types of learners. The number of students with learning difficulties is also rising and, therefore, the teachers need to become more aware of the complex cognitive mental processes involved in language learning. The focus in the language classroom should be placed on the learners and their perceptions as well as their motivation to learn the language. A French class in the Multisensory Space is not just a language class, but also a comforting oasis and a means for personal fulfilment for higher education students whose curricula consist of sometimes very laborious professional studies. Magid & Chan [5] have studied how English learners can be motivated by helping them visualise their Ideal L2 Self. They recommend "six two-hour weekly workshops. The first hour should focus on activities that would be especially meaningful to the participants such as English improvement or career preparation. The second part of each workshop should focus on visualisation training and vision enhancement activities. In terms of visualisation activities, the first two workshops could focus on activities to stimulate and train the participants' imagination. The following two workshops should each consist of two positive situations to build up the participants' confidence. The final two workshops should each contain one positive situation and one negative situation to create a balance between the participants' vision of their Ideal L2 Self and Feared L2 Self". They also suggest the use of "plausible situations in scripted imagery. The scripted imagery situations

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should be plausible in order to motivate the participants and give them confidence in their English. Furthermore, the positive situations should match the participants' goals for learning English and the negative situations should match their Feared L2 Selves in order to motivate them to learn English". According to them "teachers should help L2 learners to work on plausible action plans, because it takes a long period of continuous effort for L2 learners to succeed in mastering a L2. It is important for them to see their Ideal L2 Self both in the near future and distant future, and to develop plausible action plans accordingly. The researcher should use the language counselling sessions to help the participants to set realistic and specific goals along a long-term 'visionary pathway' towards learning English". The tasks of these motivational programmes consisting of workshops and role-plays could be easily performed in the Multisensory Space.

The results of the evaluation in this study and the evaluation in 2014 [7] suggest that foreign language learners benefit from the use of different multisensory stimuli, because they provide more cognitive connections in the learners emphasising also the role of transcultural values and paralinguistic features in foreign language learning as well as placing the student and his or her motivation at the heart of the language learning project. McNamara [6] has used an autobiography to study language learning motivation. He states that "the current emphasis in language learning on functional communication divorced from historical or cultural context has led to an impoverishment of thinking about the reasons for language learning in education, and particularly the way in which language learning can lead to development of the person". He illustrates the argument by means of two autobiographical accounts of his own language learning which have been "embedded in highly significant personal relationships, and where language learning has involved traversing, or even transgressing, deeply marked cultural boundaries: not only a risk, but also a path to greater self-understanding through imaginatively engaging, via the indexical function of language, with the experience of representatives of the forbidden Other". The accounts "involve language learning in which the symbolic or indexical function of language was central, rather than the gaining of practical communicative skill".

The Finnish higher education students described their French course learning environment in the abovementioned evaluations as inspiring, relaxed and motivating, and compared it to traditional classroom learning environment.

"I liked it, and it was nicer to enter than a normal classroom. It was easier to talk to others and form groups with not so familiar students."

"The atmosphere in the space was relaxed, which made it easier to speak the new language. I liked it!"

"The Multisensory Space worked well. The atmosphere was more relaxed than in a traditional classroom and the images of Paris and France also created a good atmosphere and motivated me to study."

"Really good! A large classroom is very sterile, whereas in the Multisensory Space there was a good possibility to use all the senses in learning French. Especially spoken exercises were nice and easy, because the space was intimate and music was played in the background."

"It was a pleasant and nice change compared to traditional studying. I even felt French. The pictures and background music created a cozy atmosphere. A nice, new idea! The culture becomes more familiar."

"It's more natural to practise oral skills in the multisensory space compared to a traditional classroom."

"I think that the space helps role playing and learning especially cultural issues. It also increases motivation and the meaningfulness of the classes, and it's nice to have variety."

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