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# THE SPOC+ PLATFORM: EVALUATION AND PERSPECTIVES

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## ABSTRACT

Mobile artifacts are the objects that increasingly surround us in life. They provide us with the opportunity to engage in activities outside the traditional context and at our own pace. In this article, we present the results of the tests of our mobile application intended for the learning of the French language with the concept of SPOC with a methodology of teaching pedagogy by project founded based on MIRTO by using the NLP tools.

## KEYWORDS

SPOC, NLP, MIRTO, mLearning, SPOC+, FLE

## 1. INTRODUCTION

As part of our research, we have set up a new platform, SPOC+. This platform is a FLE (French language learning) system based on SPOC (Small Private Online Course) integrating NLP (Natural Language Processing) tools and the MIRTO<sup>1</sup> project (Antoniadis and Ponton, 2004) on mobile artifacts with a personalized follow-up for each learner. As described (Asgari and Antoniadis, 2021), our platform, SPOC+, is modular and allows for the incorporation of new features resulting from scientific progress in the field of NLP as well as technological innovations, such as virtual reality and augmented reality. We have developed the SPOC+ learner interface only on smartphones, to enable learning anytime and anywhere. SPOC+ covers all skills of language learning: listening, reading, speaking and writing. SPOC+ is based on the same principles that founded MIRTO (Antoniadis and Ponton, 2004), simplicity, modularity and user-friendliness. Simple, because NLP tools are designed for teachers who have little or no computer skills. Modular to be able to integrate new NLP functionalities as its tools develop. User-friendly because of the users who use our system, the generation of thumbs.

## 2. CONTEXT

In the test phase of our application, we tested SPOC+ with 25 non-French adult learners from Iran where French is not an official language. As Wang and his colleagues point out, gender and age variants of learners have no impact on mobile learning (Wang et al., 2009). We do not distinguish gender differences in the selected learners. We limited the number of learners per class to allow the teacher a personalized follow-up, which is one of the significant differences between MOOC and SPOC (Asgari and Antoniadis, 2020). According to the study conducted by Lui and colleagues, prior knowledge in SPOC does not influence SPOC usage and learning performance (Lui et al., 2017) by new learners. The 25 learners had never been used or participated in SPOC courses.

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<sup>1</sup> In French Multi-apprentissages Interactifs par des Recherches sur des Textes et l'Oral

We defined two selection criteria. The first criterion for selecting the 25 learners is based on their level of knowledge of French language. The learners in our system, in this phase, have all previously reached level B1 according to the CEFR (Europarat, 2011) global scale. Our second selection criterion concerns the learners' mobile artifact. Our mobile application is available for smartphones with an operating system from Android 5 and IOS 11, our learners all had a smartphone with an Android operating system higher than version 5 with an internet connection.

As presented (Asgari and Antoniadis, 2020), our system consists of two websites and a mobile application. Our survey is formed of 30 questions and sent to all 25 learners who were using our mobile application. They had followed courses for 8 weeks (at a frequency of one session per week). During these 8 weeks, we covered the verbs in the imperfect tense and possessive adjectives for level B2 according to the CEFR (Europarat, 2011) global scale with the main theme, the Louvre Museum. With an interval of two weeks after the last lesson, the learners received a notification on their smartphone to participate in our survey. The questionnaire could only be validated and sent if all questions had been answered. All learners answered our questionnaire. We present our analysis results in detail in the following sections.

### 3. METHODOLOGY

Our questionnaire is divided into two sections. The first section consists of 10 questions related to learners' subjective views and ease of use of SPOC+. The second section of the survey asks learners 20 questions about their satisfaction with using SPOC+ in their French language learning process. In order to obtain correct answers, we translated the questionnaire into the learners' native language. As Sharples advocates, the assessment of mobile learning is not inherently different from other forms of learning, in that we want to understand the individual and collective processes of knowledge acquisition and the resulting changes in knowledge, skills, and experience. Learning that is both initiated and structured through the use of mobile technologies can be assessed in different ways, including Likert scale questionnaires (Sharples, 2009). Cronbach's alpha test (Cronbach, 1951) was used to assess the reliability of the questionnaire. As recommended by Kline (Kline, 2015), the Cronbach's alpha coefficient of our questionnaire with a threshold of 0.94 confirms sufficient reliability of our questionnaire. Our questionnaire consists of two sections. The first part contains 10 questions to assess the satisfaction and ease of use of SPOC+ and the second part to measure learners' satisfaction with using the SPOC+ app on their smartphones for online French language learning. We present our approach in the following sections. In order to analyze the first section of our questionnaire, we use Brooke's method (Brooke, 1986) and for the analysis of the second section, we use the statistical analysis software SPSS.

#### 3.1 Section One

In order to collect learners' opinions on the usability of our system, we chose the System Usability Scale (SUS) satisfaction questionnaire, as it is practically technology-neutral (Brooke, 2013). This questionnaire is easy to understand, fairly short with easily interpretable scoring. The SUS scale consists of 10 items in the affirmative form, so every other item is reversed (the answer requires answering the opposite of the previous item). The goal is to have learners read each question and make an effort to think about whether they agree or disagree with it (Brooke, 2013). Scoring starts from 1 to 5, with 1 representing "strongly disagree" and 5 representing "strongly agree." As Brooke points out, SUS yields a single number, representing a composite measure of overall satisfaction with the system under study, so the scores of individual items are not significant in themselves (Brooke, 1996) and we cannot analyze them individually. The SUS score for SPOC+ is 79.8 out of 100. Using a 0-100 scoring system typically leads to a percentage interpretation, which is not the case with SUS (Brooke, 2013). We interpret the SPOC+ SUS score in three different forms. First, using the six adjectives proposed by Bangor and colleagues (Bangor et al., 2009), second, with the five grades presented by Sauro in this research (Sauro, 2018), and third using a degree of acceptability consisting of three different levels from the scientific work of Bangor and colleagues (Bangor et al., 2008).

### 3.2 Section Two

The second section of our questionnaire is based on the work done by Sulaiman and Dashti (Sulaiman and Dashti, 2018), consisting of 19 questions with a yes or no answer and 1 question with the possibility to give us possible feedback from the learners. These 20 questions concern technological aspects (communication and interaction tools, app usability, availability), didactic aspects (content and resources, teaching and tutoring, course organization, clarity of learning objectives, assessment methods), and overall evaluation of the user experience (originality compared to traditional courses and pedagogical methods, learner satisfaction, other positive/negative aspects that we may not have anticipated, as well as suggestions for improvement).

## 4. RESULTS

According to Bangor and colleagues' classification (Bangor et al., 2009), the score of 79.8 is above "good" but not yet "excellent." According to Sauro's research (Sauro, 2018), with the results we obtained, SPOC+ has a grade of "C". As shown in the work of Bangor and colleagues (Bangor et al., 2008), a score above 70 is "acceptable," which is the case for SPOC+. Figure 1 represents the SPOC+ SUS score in three different forms of interpretation that we have discussed.

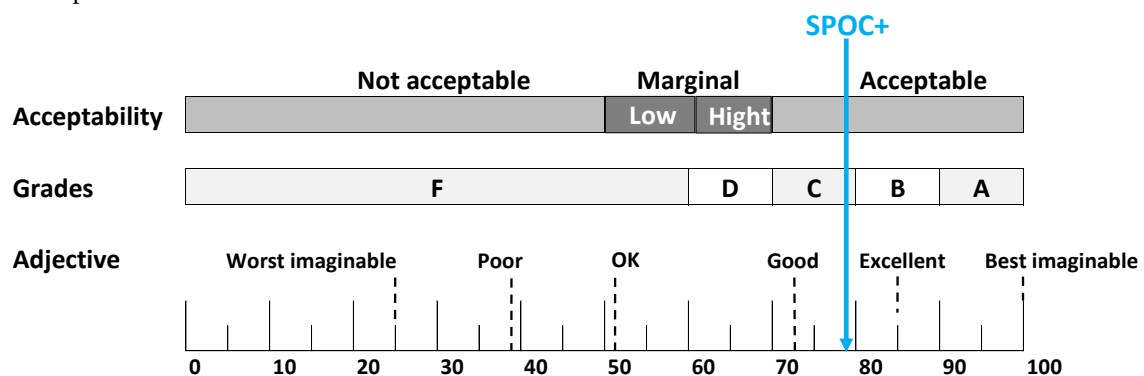


Figure 1. SPOC+ SUS Score rating scale, from (Brooke, 2013)

On the 6 questions of the scope of the tools made available in the SPOC+ application, the distribution of the answers reveals that 30.7% of the learners were dissatisfied, while 69.3% expressed their satisfaction regarding these tools, which may indicate the level of satisfaction of the learners regarding the tools made available in the SPOC+ application. To improve learner satisfaction with our tools, it is important to properly integrate tools that are closer to the tools that the learner's generation are used to using.

According to the learners' responses to the 5 questions about "mobile artifacts", it was found that 30.4% of the learners were not satisfied with the use of mobile artifacts in teaching while 69.6% expressed satisfaction. This shows that mobile artifacts are overall appreciated in the learning process.

According to the learners' answers to the 8 questions, it was found that 29% were not satisfied with this type of training while 71% expressed satisfaction with this type of training. Although SPOC is a new learning method, we found that with a satisfactory percentage, learners enjoyed this new method that we integrated on their smartphones through our SPOC+ application.

As it is previously presented, the last question of the second questionnaire is open-ended. This question allows us to have the learners' opinions, gives them the means to express their opinion about the SPOC+ application and the French language learning process. We did not require a minimum or a maximum number of characters for the comments in this question. All 25 learners responded with different degrees of length.

One answer among the 25 is not usable and we cannot conclude any result. This is the case of learner number 16, his answer "سپاس", which is translated into French as "remerciement" (Parsayar, 2005) does not allow us to clearly rule his point of view towards our system. In Iranian culture, this word does not reflect agreement or disagreement. Learner number 11 states that he has no idea about the SPOC+ application, we consider the response of learner's numbers 11 and 16 as neutral. Among the 25 learners, 19 learners are satisfied with the SPOC+ application and have demonstrated their satisfaction with the use of the SPOC+ application in

learning the French language. They described SPOC+ as a practical and interesting application that allowed them to discover a new learning method. According to the answers to this last question and the analysis of the other 19 questions of our 2nd section questionnaire, it was found that in general learners were satisfied with the SPOC+ application in the process of learning the French language on their smartphone.

## 5. CONCLUSION

We were able to test SPOC+ with a group of 25 French language learners. As the analysis of the results of our questionnaire shows, with a SUS score of 79.8 according to two interpretive scales, learners' satisfaction with SPOC+ is "good" and "acceptable". Using a questionnaire with sufficient reliability, more than 70% of these same learners showed their satisfaction with the use of SPOC+ in the French language learning process. The results of our test showed us that the implementation of an online FLE course on smartphones with the SPOC concept is possible. In order to better analyze the satisfaction of learners with SPOC+ it would be useful to have the results of a larger number of learners in our future tests.

On the technological aspect, we will have to improve our chat and forum tools to allow better collaboration between the teacher-learner and the group of learners. On the didactic side, we can improve our pedagogical content through better cooperation with teachers. To better realize project-based learning, we are considering integrating GeoLearning on our platform.

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