LMOOC AND SELF-REGULATED LEARNING IN UNIVERSITY EDUCATION

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Dora Loizidou

Grenoble Alpes University (FRANCE), University of Cyprus (CYPRUS)

https://orcid.org/0000-0001-5746-957X

Abstract

Literature has discussed the importance of self-regulated learning skills in successful accomplishment of MOOCs (Kizilcec et al., 2017). In this paper, we are interested in students' self-regulated skills and therefore we analyse their participation in two LMOOCs (three different groups). This study is an action research conducted in three consecutive years. Third year students (Greek-speaking) at the University of Cyprus participated in this study as part of their blended learning training (French course for university purposes). For the analysis, we classified students' and teacher's actions in categories (content analysis). The goal of this study is to examine whether the integration of a LMOOC in an institutionalized training (formal learning) could contribute to the self-regulation of the learner.

Keywords: learning process, LMOOC, self-regulated learning (SRL).

1   INTRODUCTION

Self-regulated learning (henceforth SRL) skills in online learning environments have been extensively discussed and researchers shown their impact on learning (Zimmerman, 2008; 2015). The high dropout rate of learners who participate in LMOOCs seems to occur because of the lack of self-regulated learning skills (Amadieu & Tricot, 2020; Kizilcec et al., 2017). This paper proposes the integration of two LMOOCs in a university education and studies students' SRL skills. The aim is to examine whether there is an awareness of students' self-regulation.

This paper is organised as follows: first we briefly review the theoretical background of the current research, second, we describe the methodology of the research, third we present our results and fourth we discuss research's findings.

2   THEORETICAL BACKGROUND

In the context of e-learning, various forms of education appeared, with the latest MOOC phenomenon, making an explosion due to his massive and open capacity. Despite their fast development, the little research in this field showed that MOOC and its variants (xMOOC, cMOOC, iMOOC, LMOOC) faced a lot of challenges and have been criticised strongly, due to the high dropout rate (Aldowah et al., 2019; Bakki et al., 2015), as well as the "problems related with participants' satisfaction, learning support, technological environment and the quality of the learning experience" (Texeira & Mota, 2014: 35). Nevertheless, MOOCs are considered as an evolution of Open Educational Resources in which free and online access to teaching and learning material is available (Ferguson et al., 2018; Mangenot, 2017) and therefore similar issues have already been discussed in the literature. Certain research has shown that online education is intended for self-taught (Albero & Kaiser, 2009) and that the possibilities of learners' autonomy have been overestimated in digital learning environments (Linard, 2003). Moreover, human support is lacking in self-learning systems (Barbot, 2000) and other weaknesses have also been identified in digital learning environments, especially in written and oral production, because of the lack of teacher and/or tutor intervention for remediation, feedback and evaluation.

One of the major factors of unsuccessful completion of MOOC is the lack of SRL skills (Amadieu & Tricot, 2020; Kizilcec et al., 2017). Research on SRL has been conducted for years now on online education (Zimmerman, 2008; 2015) and, more recently, researchers are investigating learning processes in MOOCs (Kizilcec et al., 2017; Onah & Sinclair 2017). Considering that "[i]ndividuals with strong self-regulated learning (SRL) skills, characterized by the ability to plan, manage and control their learning process, can learn faster and outperform those with weaker SRL skills" (Kizilcec et al., 2017: 18), then SRL is critical in MOOCs. In fact, according to McAuley et al. (2010): "a MOOC builds on the active engagement of several hundred to several thousand 'students' who self-organize their

participation according to learning goals, prior knowledge and skills, and common interests." (op. cit., 2010: 4). A recent study of Kizilcec et al., (2017) regarding SRL strategies in MOOCs revealed that learners who perform well in online learning environments are the same who are competent in SRL. Conversely, learners who experience failures do not have the necessary competences for self-regulation because it seems that they underestimate the time and the effort needed to accomplish the online course in comparison to face to face course (Amadieu & Tricot, 2020).

Differing from the various forms of MOOCs, a language MOOC design tends to consider human interaction, such as tutoring, forum discussions, peer review (Mangenot, 2017). However, LMOOC proves to be inappropriate for engaging learners in meaningful language learning (Rocha, 2018) due to insufficient human interaction and feedback to the learner's written and oral production. Undoubtedly, in order to learn and make progress in a foreign language, the learner needs not only to practice, but also to interact actively in a lifelong learning process and therefore expert's guidance is estimated crucial (Holec, 1981; Little, 1991; Nissen, 2012). Amadieu & Tricot (2020) examine if digital environments (including MOOCs) encourage learner autonomy and they conclude that in order to be autonomous, learners must be accompanied and guided. Along with these authors, Kizilcec et al. (2017) suggest, due to the lack of guidance and human support in MOOCs, to train learners to regulate their learning process in order to achieve their learning objectives.

Taking into consideration the need to support and guide learners who attend a LMOOC, in the current research we examine the integration of French LMOOC in a formal education setting at university level. Thus, we hypothesize that student SRL skills who participate in LMOOC are enhanced in a formal learning. The goal of this study is to examine whether the integration of a LMOOC in an institutionalized training, with its specificities and a guided pedagogical scenario, could contribute to the self-regulation of the learner. The research questions we attempt to answer in this study are the following:

1. During a learner's participation in a LMOOC, can we observe any traces of the conditions which favour his learning process?
2. What is the role of the teacher in this SRL?

Based on students' reflective journals, we analyse their discourse and examine whether there is an awareness of their self-regulation.

3   METHODOLOGY
3.1   Study context

The current study has taken place in three different sessions (2018, 2019, 2020) of a blended education French course for university purposes. The aim of the course was both to progress in language and to develop the competence of students to learn alone. Students of University of Cyprus (Department of French and European Studies) took part in this study (three different groups). All students were Greek-speaking, pursuing their Bachelor (third year students) and had French as their main subject in their university curriculum. The French language level of all groups was heterogeneous, mainly B1-B2[1], according to the Common European Framework of Reference for Languages (CEFRL).

As part of the training, students had to keep, on a weekly basis, a reflective journal shared with the teacher in which they had to write down different aspects of their evolution in learning process (for example positive and negative remarks, various problems and how they dealt with them, degree of difficulty of the various tasks and activities, as well as their assessment on overall). They also had to submit a summary of their weekly journal every month and a reflexive summary at the end of the semester. As a part of a blended learning training, classes were taken place in a computer room and at the same time on the university's platform (Blackboard).

Two French LMOOC[2] were integrated in three different group classes as follow:

1. Group 1: *défiDELF*, Lille 3 University's, session 2 in 2018 (henceforth "group 18"),
2. Group 2: *Study in France: French Intermediate course B1-B2*, École Polytechnique, Paris Saclay University, session in 2019 (henceforth "group 19"),
3. Group 3: *Study in France: French Intermediate course B1-B2*, École Polytechnique, Paris Saclay University, session in 2020 (henceforth "group 20").

Students' participation in the above LMOOC sessions was mandatory. In a preliminary study, session 1 of défiDELF was proposed to a group class in 2017. Students were free and encouraged to continue, but no follow-up was planned in the training. Despite the feedback and positive contributions from students, only one student accomplished it to the end. Thus, in 2018 we suggested a full

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[1] For detailed information on student level, cf. Table 2 in Appendices.

[2] For the specificities of the two studied LMOOCs, cf. Table 1 in Appendices.

integration in the university education. In 2019, *défiDELF* was not launched at the beginning of the semester and therefore a new French LMOOC was proposed.

3.2   Corpus and analysis

Considering that all the elements of the studied teaching and learning situation are interrelated, the change of one influence another or everything else. The study of such complex system needs a systemic approach (Rosnay, 1975). Hence, the present study is an action research conducted in three consecutive years; after studying the results of the first academic year, the following academic year we changed certain parameters in order to propose improvements to the teaching and learning system.

The research carried out in Spring semester of three different academic years (2018, 2019 and 2020). In total, 39 students attended the three courses (N=15 in group 18, N=11 in group 19 and N=13 in group 20[3]). Our corpus consists of:

1. student reflective journals (N=62, length: 39561 words, average 638 words/journal) and
2. observant participation notes of the teacher (three sessions).

In open and distance learning, Albero (2000) distinguished two different cases: in the first one the learning system is designed by considering that autonomy is an intrinsic quality of the individual and then it is a prerequisite for attending the training. In the second, the learning system integrates autonomy into the design of the system. In trainings similar to our context, this author suggests to follow the second case as an increase of learners' autonomy is possible. Consequently, Albero (2000) identifies extremely diverse skills in seven areas of application of autonomy which can be integrated into training: cognitive, informational metacognitive, methodology, psycho-affective, social, technical. Nissen (2007) proposed to add the 'language' category for language trainings. For our analysis, we are based on these categories in order to classify students' and teacher's actions.

Our research is descriptive and relies on a qualitative empirical-inductive approach. We used a bottom-up/top-down approach to classify journal texts (content analysis). We used Nvivo 11 to code our data in different types of autonomy, as mentioned above.

4   RESULTS

In the current study, seven (out of eight) types of autonomy emerged. Data analysis showed that 38 out of 39 students revealed SRL skills in different autonomy application areas. Levels of each student SRL skills were identified as well as teacher's actions that contributed to this process. In this section, we present first the teacher's role in this learning process and then the autonomy application areas in which student SRL skills appeared.

4.1   Teacher's role

Each studied LMOOC was integrated in a blended education course: the teacher adjusted course's content on the weekly LMOOC's schedule to guide and help students in this learning process. In this study, we identified the various actions of the teacher and we classified them in seven areas in which it is possible to increase students SRL skills. Table 1 details all actions revealed in teacher's observation notes. We observed not only proactive, but also reactive actions according to students' needs. Teacher explains that according to the results of previous years, she was acting more in a proactive way; for example, as a lot of technical problems were identified in group 18, she decided to explain how the platform works at the beginning of the LMOOC before any problem appears.

Table 1. Teacher's actions: possible student autonomy application areas

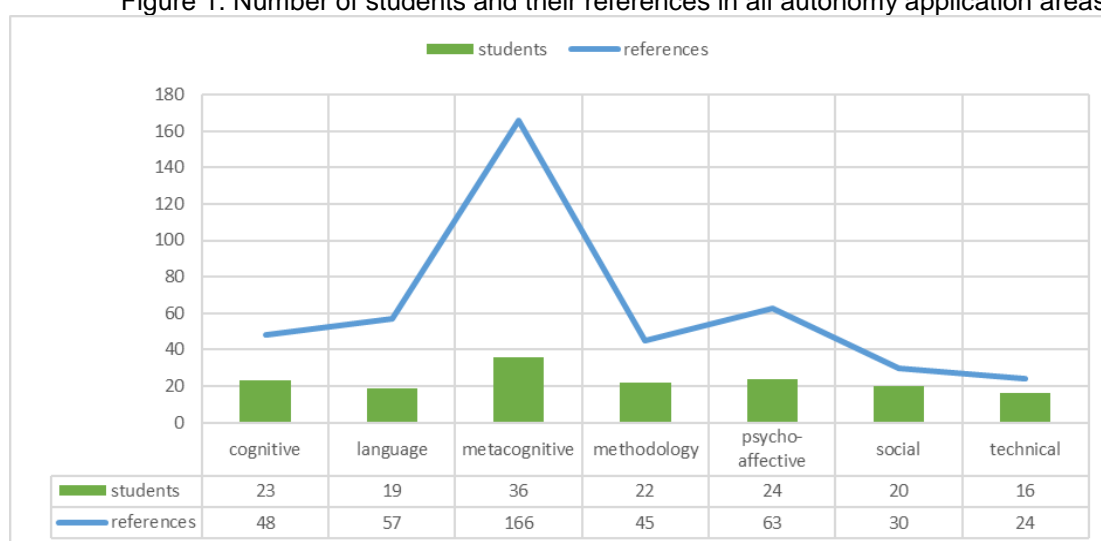| Teacher's actions	Possible autonomy application areas
- Encouraging student to learn more about the subject - Provide more information on proposed content	**Cognitive**
- Develop a linguistic issue - Guide student to find the relevant help (dictionary, grammar, etc.) - Guide student to improve his work - Help student cope with his difficulties	**Language**

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[3] In group 20, we eliminated from our corpus five students: two students who had French as mother tongue and three repeaters because they were already included in group 18 or group 19 corpus.

Teacher's actions	Possible autonomy application areas
- Encourage student to properly explain/justify his learning choices - Propose a reflexive activity (maintain a weekly journal)	**Metacognitive**
- Encourage student to set his goals according to his needs - Follow student's work (journal and in class) - Propose means to achieve the objectives set - Remind deadlines for work submission	**Methodology**
- Emphasis on the need for regular work - Encourage student to take initiatives - Give student the freedom to carry out the activities according to his/her needs - Encourage student progress: positive comments	**Psycho-affective**
- Encourage student to participate in discussion forums - Encourage student to help his classmates and share his knowledge and know-how - Facilitate classroom discussions	**Social**
- Explain how the platform works - Help student resolve a technical difficulty	**Technical**

4.2 Student SRL skills

The results indicate development of learner autonomy in the following areas: cognitive, language, meta-language, methodology, psycho-affective, social, technical. In total, we identified 433 references in 56 out of 62 student reflective journals as follow: 15 in group 18, 21 in group 19 and 20 in group 20. We observed that all students except one showed SRL skills in the above areas[4]. In particular, the vast majority of students showed development of SRL skills in metacognitive area (36 students), followed by psycho-affective (24 students), cognitive (23 students) as well as methodology (22 students) and finally social (20 students), language (19 students) and technical (16 students). Similarly, regarding the number of references detected in students' reflective journals, metacognitive area of application of autonomy is also the highest (38,34%, 166 out of 433 references). A considerably lower level of SRL was detected in the four following areas: psycho-affective (14,55%, 63 references), language (13,16%, 57 references), cognitive (11,09%, 48 references) and methodology (10,39%, 45 references). The lowest level was found in social (6,93%, 30 references) and technical area (5,54%, 24 references) (cf. Fig. 1).

Figure 1. Number of students and their references in all autonomy application areas

	cognitive	language	metacognitive	methodology	psycho-affective	social	technical
students	23	19	36	22	24	20	16
references	48	57	166	45	63	30	24

[4] For detailed information per student, cf. Table 2 in Appendices.

A closer analysis of the findings per year shows higher SRL of the group 19 and the group 20 than the group 18 in metacognitive and language area of autonomy (cf. Fig. 2). A striking observation is the high number of SRL in psycho-affective area in group 20 compared to group 18 and group 19. It is remarkable to add that this area is in second position for group 18 and group 20. As regards to cognitive and methodology area, the results show that the level of SRL is higher in group 19 than group 18 and group 20. Another remarkable observation concerns the level of SRL in social and technical area; we noticed that those two areas are at the bottom for group 19 and group 20 compared to group 18 in which they are in third and fourth position, even if the difference is not significant.

Figure 2. Number of references in all autonomy application areas per group
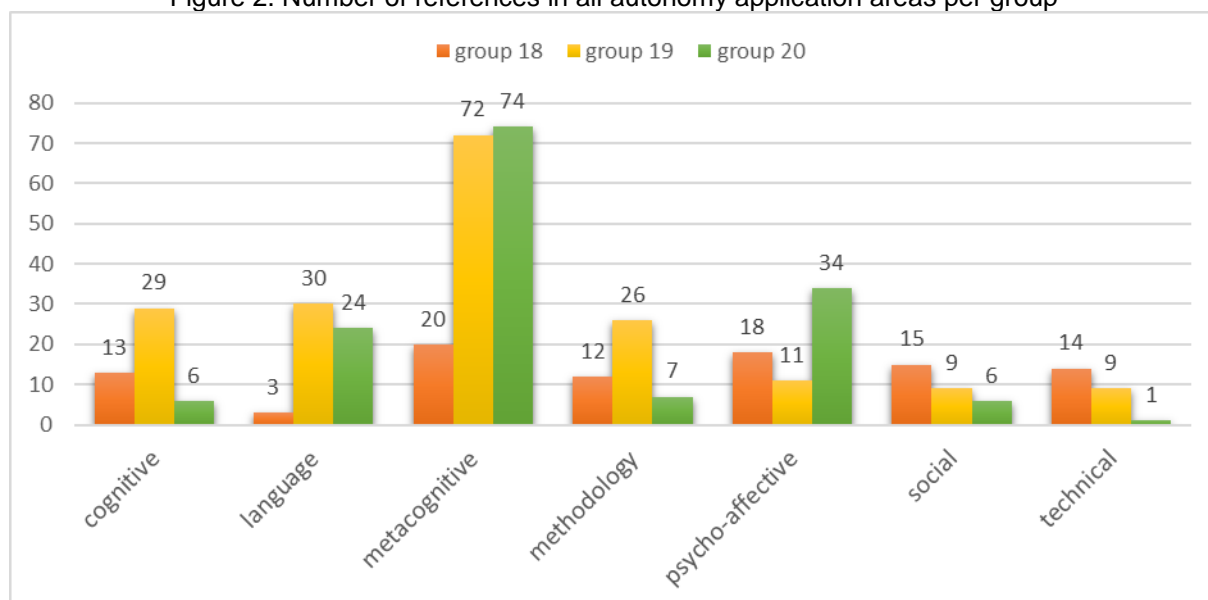

Table 3 presents in more detail the SRL skills that emerged from student reflective journals.

Table 3. SRL student skills presented by autonomy application areas

Autonomy application area	STUDENT SKILLS
Cognitive	- Analyse observed elements (find indices, create links, categories, compare, discriminate, synthesise) - Building linkages between new and stabilised elements - Understand the content offered as part of the training
Language	- Acting in a foreign language - Use aids (dictionaries, grammars, etc.) - Work in reception/production activities at its own pace
Metacognitive	- Adapt learning strategies depending on conditions - Clarify what is acquired and what is not - Critical review of approaches adopted - Reflexive activity on the efficiency of selected learning modalities - Self-evaluate its performance: identify its strengths and weaknesses
Methodology	- Be aware of the time and effort required to carry out a task - Knowing how to set your own educational goals - Plan and regulate its activity - Organise work according to objectives
Psycho-affective	- Analyse error and make it a source of learning - Assume its share of responsibility in training - Being capable of initiative - Demonstrate efficient perseverance - Overcoming discouragement, fear of not succeeding, anxiety related to judgment - Update a positive self-image and effectiveness

| Autonomy application area	STUDENT SKILLS
Social	- Communicate to learn - Co-operate, exchange, share information - Develop an attitude of openness, tolerance, empathy towards the interlocutors - Soliciting the teacher / tutor / a classmate for help
Technical	- Adapting to the diversity of tools and media - Mastering digital technologies used

Fig. 3 shows the number of autonomy application areas by student. First, the results indicated that the majority of students proved SRL skills in four areas (31%, 12 students out of 39), followed by six areas (23%, 9 students). Second, a considerable number of students showed SRL skills in two (18%, 7 students) and five areas (15%, 6 students). Third, only one student proved SRL in all seven areas. We observed also that the majority of students who proved SRL skills in four areas are mostly in metacognitive (12 students), psycho-affective (8 students) and cognitive area (7 students).

Figure 3. Number of students developed SRL skills in number of areas of autonomy
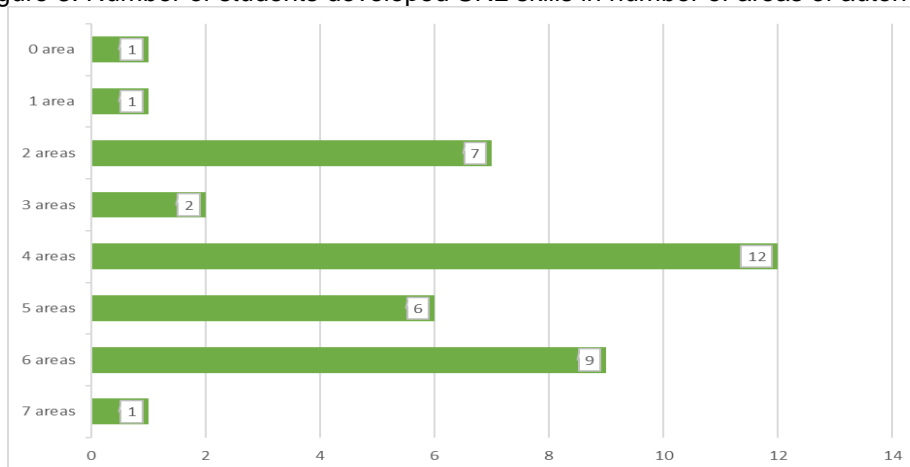
More precisely, Fig. 4 points out the development of SRL skills per student level. The majority of students are students of B1 level (16 students for B1 and 12 for B2). The 10 students who developed SRL skills in most of areas (9 students in six areas and 1 student in seven) are all students of at least B2 level, except two that were highly motivated and made a remarkable progression (g18-11 A2 and g19-4, B1, teacher's notes). It is remarkable that also A2 students proved development of SRL skills (8 students in total).

Figure 4. Development of SRL skills per level
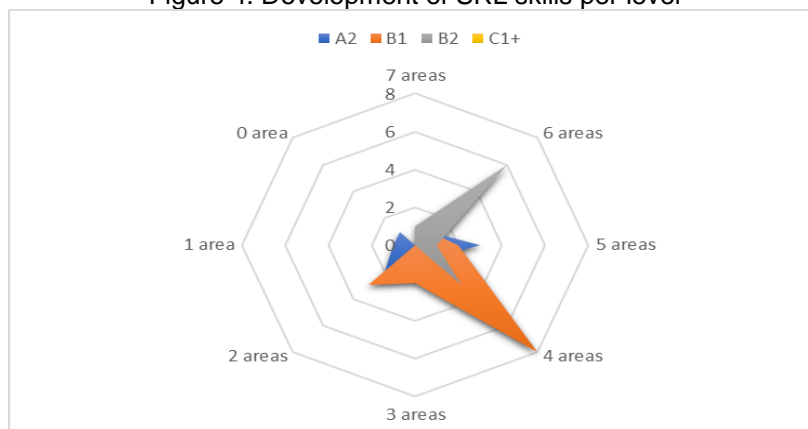
5   DISCUSSION

The findings of the current research revealed a remarkable development of student SRL skills after participation in the three LMOOCs under study. Despite of the fact that advanced level students

showed higher number of SRL skills than the lower level students, it is remarkable that all students showed a development of SRL skills. Our analysis showed that the students have become aware of the conditions that favour their learning process: they managed their personal learning, they proved that they are able to monitor, regulate, organise and evaluate their learning (Zimmerman, 2015).

Considering the systemic approach of our study, a possible explanation may be related to various interrelated factors. First, the demanding nature of LMOOCs with their weekly schedule (pedagogical scenario, deadlines for activities, discussion forums etc.). Second, the mandatory participation in LMOOC within the framework of a formal learning transformed this self-learning system into a collaborative class with a common goal to achieve. Third, the activity of keeping a reflective journal on a weekly basis helped students to become more active in their learning process, which is mainly explained by the high number of psycho-affective SRL skills that students developed. And fourth, human support in face-to-face classes by the teacher. The findings of group 18 revealed some issues on technical level that they were only resolved with the guidance of the teacher.

On overall, the attention is given, inter alia, on the tasks to accomplish in the learning system; the new learning system gives a new perspective in the class atmosphere and as a result this may awake students' interest and/or motivation for the French language. Along with the high number of metacognitive SRL skills, we assume that because course learning objectives were met through this learning system of the LMOOCs. In addition, teacher's role has definitely changed. We estimate that teacher's intervention is essential in LMOOC not only for feedback to the learner's writing and oral production, but also for guiding them well to their learning choices because she knows well students' strengths and weaknesses, as well as their personality. The study showed that the teacher contributes to supporting learner's engagement and improve learning strategies. Besides, researches point out the importance of guidance in order to help student to achieve learning objectives (Amadieu & Tricot, 2020; Kizilcec et al., 2017). We consider that the teaching approach learn to learn helped students to become aware of their learning process and that LMOOC is suitable for heterogenous classes because every student works at his own pace and according to his needs.

6 CONCLUSION

In this paper, we studied the development of students' self-regulated skills while they participated in two French language MOOCs. After analysing the actions of three different groups, as well as their teacher's, we confirm our hypothesis that students who participate in LMOOC, integrated in a formal learning, could enhance their SRL skills. Considering that human support in face-to-face classes seems to be critical for the successful participation of the LMOOCs, the current study contributed to the reuse of LMOOCs for language learning; the findings conclude a twofold benefit in a university education: online open access to language material within a pedagogical scenario and an awareness of student self-regulation learning.

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APPENDICES

Table 1. Specificities of studied LMOOCs

LMOOC	défiDELF (session 2 in 2018)	Study in France: French Intermediate course B1-B2
Institution	Lille 3 University	École Polytechnique, Paris Saclay University
Goal	Preparation for DELF B2	Preparation for studies in France
Platform	Moodle	Coursera
Certificate	Yes, free	Yes, paid
Validation	Mandatory and optional activities	Quiz
Duration	6 weeks	6 weeks
Content	Pedagogical scenario: - Topics adapted to B2 level (CEFRL) - Self-corrective activities (oral and written comprehension) - Activities for oral and written expression	Pedagogical scenario: - Topics related to French language and culture and French higher education system - Self-corrective activities (oral and written comprehension, grammar and vocabulary) - Activities for oral and written expression

	- Forums (help and discussion) - Collaborative tools (peer review)	- Forums (help and discussion) - Collaborative tools (peer review)
Distance tutoring	Yes Tutored oral and written production activities	No

Table 2. Number of SRL skills references per student and per autonomy application areas

Group	Student	Level (CEFRL)	Number of references in all areas	Cognitive	Language	Metacognitive	Methodology	Psycho-affective	Social	Technical	Total number of areas
Group 18	g18 - 1	B2	13	4	3	1	2	0	1	2	6
	g18 - 2	B1	8	0	0	1	2	3	2	0	4
	g18 - 3	B2	6	1	0	1	1	1	1	1	6
	g18 - 4	B2	13	1	0	3	4	3	1	1	6
	g18 - 5	C1+	2	0	0	0	1	0	1	0	2
	g18 - 6	B1	7	1	0	3	0	3	0	0	3
	g18 - 7	B2	6	0	0	1	0	1	2	2	4
	g18 - 8	B1+	6	1	0	1	0	0	2	2	4
	g18 - 9	B1	5	0	0	1	0	1	2	1	4
	g18 - 10	A2	0	0	0	0	0	0	2	0	0
	g18 - 11	A2	10	2	0	3	1	1	1	1	6
	g18 - 12	A2	3	0	0	2	0	1	0	0	2
	g18 - 13	B1	4	1	0	1	0	1	0	1	4
	g18 - 14	B1	4	1	0	0	0	3	0	0	2
	g18 - 15	A2	8	1	0	2	1	0	1	3	5
Group 19	g19 - 1	B2	24	1	3	9	3	4	3	1	7
	g19 - 2	B1+	17	3	0	8	2	0	0	3	4
	g19 - 3	B1	11	2	0	6	2	1	0	0	4
	g19 - 4	B1	18	0	5	9	1	1	1	1	6
	g19 - 5	B2	24	4	4	8	5	1	0	2	6
	g19 - 6	C1+	16	2	2	4	3	2	1	0	6
	g19 - 7	B1	18	4	7	4	1	0	0	1	5
	g19 - 8	A2	12	1	1	4	5	0	1	0	5
	g19 - 9	B2	25	5	3	12	1	0	2	1	6
	g19 - 10	A2	9	1	3	3	2	0	0	0	4
	g19 - 11	A2	12	3	2	5	1	1	0	0	5
Group 20	g20 - 1	B1	5	0	1	4	0	0	0	0	2
	g20 - 2	B2	2	0	0	1	0	0	1	0	2
	g20 - 3	B1	3	0	0	2	0	0	1	0	2
	g20 - 4	B1+	15	0	3	5	0	7	0	0	3
	g20 - 5	A2	6	0	0	3	0	3	0	0	2
	g20 - 6	B2	18	1	1	10	1	5	0	0	5
	g20 - 7	B1+	10	0	3	4	2	1	0	0	4
	g20 - 8	B2	16	0	2	6	2	3	2	1	6
	g20 - 9	B2	36	0	3	20	2	11	0	0	4

Group	Student	Level (CEFRL)	Number of references in all areas	Cognitive	Language	Metacognitive	Methodology	Psycho-affective	Social	Technical	Total number of areas
	g20 - 10	B1	22	1	5	11	0	3	1	0	5
	g20 - 11	A2	1	0	0	1	0	0	0	0	1
	g20 - 12	B2	5	1	2	1	0	1	0	0	4
	g20 - 13	B1	13	2	4	6	0	0	1	0	4