"Active pedagogy in university e-learning for the construction of Social and Emotional Skills"

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Abstract

In the digital age, digitization impacts many domains, specifically education, which is considered a pillar of economic and social development. In fact, e-learning enables the integration and use of new technologies and generates working methods based on active teaching methods, thus implying innovation in the learning practices adopted by students. However, university teaching presents many difficulties in developing and constructing students' social and emotional skills such as collaboration, creativity, and analytical skills which are necessary for learning and guaranteeing successful integration into the labor market. This quantitative study aims to identify the main activities and active teaching methods used to develop social and emotional skills and focuses on the impact of student active practices in university e-learning on the development of these key skills. To ascertain this, we distributed a questionnaire to Education Sciences students in Rabat and carried out a correlational analysis between active e-learning practices and the construction of social and emotional skills. Our results reveal significant correlations between active pedagogy in university e-learning and the development of social and emotional skills of students. Therefore, our work can contribute to innovative teaching and learning practices, adopting the appropriate active pedagogy for the construction of key competencies.

Keywords: Social and emotional skills - university e-learning - active pedagogies - pedagogical innovation - educational technologies.

I. Introduction

With the advent of digitalization, higher education is undergoing considerable change in terms of the use of technological tools and the adoption of new learning methods. Indeed, higher education is the sub-sector with the highest adoption rate of digital technologies, with online management platforms replacing the campus. The use of data analytics has become increasingly important in education management. Technology has made available a wide range of informal learning opportunities (UNESCO, 2023). In its action plan for digital education, the European Commission (2021) states that digital technology is reshaping society and should offer personalized, flexible, student-centered, collaborative, and creative learning. In this approach, teaching practices are designed to enhance the acquisition and construction of a range of disciplinary and specific skills, with particular emphasis on students' social and emotional competencies. The OECD (2021) survey report, highlights that these competencies are strong predictors of school grades across students' backgrounds, age cohorts, and cities. Additionally, Greater student achievement is linked to student-centered, activating instruction, including generic skill development (De Justo et al., 2015; Ito et al., 2015). Generic skills include transversal, soft, or social and emotional skills. These different nomenclatures refer essentially to the transferable nature of these skills, which are used in personal and professional contexts. Generic working life skills have been viewed as important learning goals, because of their significant role when an individual transfers from higher education to the labor market (Grosemans et al., 2017). Despite this focus on social and emotional skills, a few studies have been carried out to examine the development of social skills and communication skills or of meta-competences, such as critical thinking or higher-order thinking skills. Therefore, the more generic skills, those not bound to any specific profession, were given the least attention (Hartikainen et al., 2019). Studies linking data on teachers and students suggest that teachers have an impact on student's social and emotional skills. Teachers and schools are expected to raise student performance, as measured through Pisa and other tests, and provide emotionally supportive environments that contribute to students' social and emotional development (Blazar and Kraft, 2017; Pianta and Hamre, 2009). However, university teaching practices present many difficulties in developing and building students' social and emotional competencies, such as collaboration, creativity, and analytical skills, which are necessary for learning and ensuring successful integration into the labor market. With the increasing importance of e-learning and technology-assisted learning, a fundamental research question arises: does active pedagogy in university e-learning enable the construction of social and emotional skills? The hypothesis suggests that active digital learning can contribute to the construction of these skills. The aim of this quantitative study is to identify the teaching methods and activities that promote building social and emotional skills in an academic context.

II. Theoretical background

Digital education is an umbrella term for various technologies and pedagogical practices in which online learning, distance learning, and blended learning are particularly highlighted in the EC action plan (European Commission, 2021). Lee et al. (2011) defined e-learning as "an information system that can integrate a wide variety of instructional material (via audio,

video, and text mediums) conveyed through e-mail, live chat sessions, online discussions, forums, quizzes, and assignments". Other researchers use the concept of e-learning to refer to technology intervention in the learning process (Sun et al., 2008). Other researchers consider it a network for educational content (Tuul et al., 2016) and collaborative learning (Lyashenko and Frolova, 2014) or extol its versatility to accommodate online or offline students (Vagarinho, 2018). These teaching methods involve learner activity during the learning process, thus Bonwell and Eison defined active learning as "instructional activities involving students in doing things and thinking about what they are doing" (Bonwell and Eison, 1991). Learning is the result of a process of construction, so constructivism can be and has been used as a guide for developing teaching strategies aimed at improving deep understanding (Windschitl, 2002; Richardson, 2003). Active learning as an instructional approach can include different forms of activation, such as increased physical activity, interaction, social collaboration, deeper processing, elaboration, exploration of the material, or metacognitive monitoring (Markant et al., 2016).

The survey's assessment framework defines social and emotional skills as "individual capacities that can be manifested in consistent patterns of thoughts, feelings and behaviors" (Kankaraš and Suarez-Alvarez, 2019). The term "skills" has been widely accepted, building on contemporary knowledge of the development of these skills (Specht et al., 2014). Social and emotional skills are malleable. They are partly shaped by environments such as families, schools, peers, life events, and individual actions and perceptions. They can also be shaped through learning and tend to change with age (Kautz et al., 2014; Chernyshenko et al., 2018).

III. Data collection and analysis methodology

The authors have developed a questionnaire to analyse the degrees of mastery of students' social and emotional skills, based on active learning in a digital environment. The five learning practices are inspired by the Hy-sup research carried out by a European collective (2009-2012), and aimed at diversifying teaching practices and pedagogical approaches in a techno-pedagogical environment (Deschryver et al., 2012). The questionnaire targeted students in the Faculty of Education at Mohammed V University in Rabat, 154 students were solicited online, with a 58.44 % return rate. The items are made up of three components: respondent demographics, active digital learning practices, and perception of mastery levels of the four social and emotional skills (3 items: gender, age, level/field of study), the active digital learning practices (5 items: work according to a training project; use of technologies in courses; active involvement in courses; self-management of learning resources; and collaborative learning activities), according to a frequency scale with 5 modalities (never, rarely, sometimes, often, and always) and finally (4 items) on the Students' perceptions of mastery of social and emotional skills according to a 6-modality Likert scale ranging from not at all mastered to very well mastered. A statistical treatment of the collected data was performed with SPSS version 26 to ensure the reliability and internal consistency of the data collection tool and obtained a Cronbach's Alpha value of 0.897, which indicates a good internal consistency of the questionnaire.

IV. Summary of main results

1. Frequency analysis

1.1 Student profile

70% of respondents are women and 30% are men, 61.1% are aged between 18 and 25 years old. The average age of students is 25 years old.

1.2 Social and Emotional Skills

Four Social and Emotional skills were analysed: conversational and expressive skills (SES1); self-reflection and abstract thinking skills (SES2); innovative and creative skills (SES3); and teamwork skills (SES4). The results of the frequency analysis based on students' perceptions of their mastery degrees are presented in Table 1.

Table1. Percentage of students 'mastery degrees of social and emotional skills

Social and emotional skills	Percentage of mastery degrees (mastered, well and very well mastered)
SES1	54.4%
SES2	53.3%
SES3	55.5%
SES4	68.8%

More than half of the respondents report mastering the four social and emotional skills examined, with 68.8% stating they have mastered teamwork skills.

1.3 Active digital learning practices

The results of the descriptive analysis of the students' e-learning practices are as follows:

- **Work according to a training project (P1):**

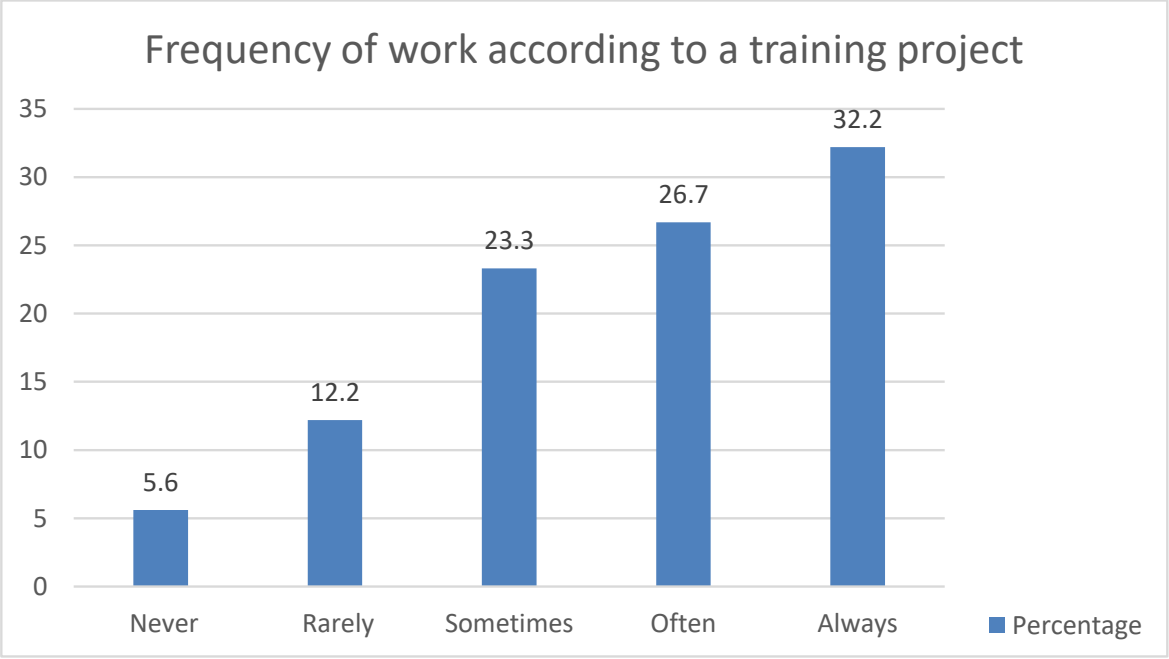

Figure 1: Frequency of work according to a training project of students

The figure 1 indicates that 58.9% of students claim to be working according to a training project.

- **Use technologies in courses (P2)**

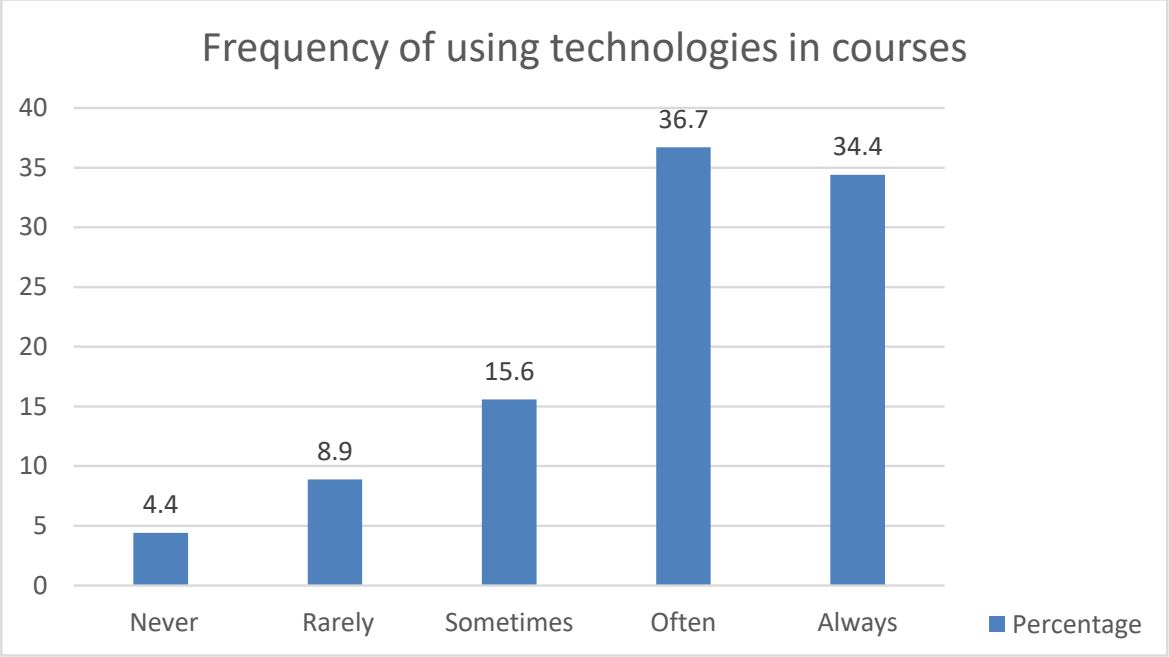

Figure 2: Frequency of using technologies in courses by students

The figure 2 reveals that 71.1% of students are using technologies in e-learning courses.

- **Active involvement in courses (P3):**

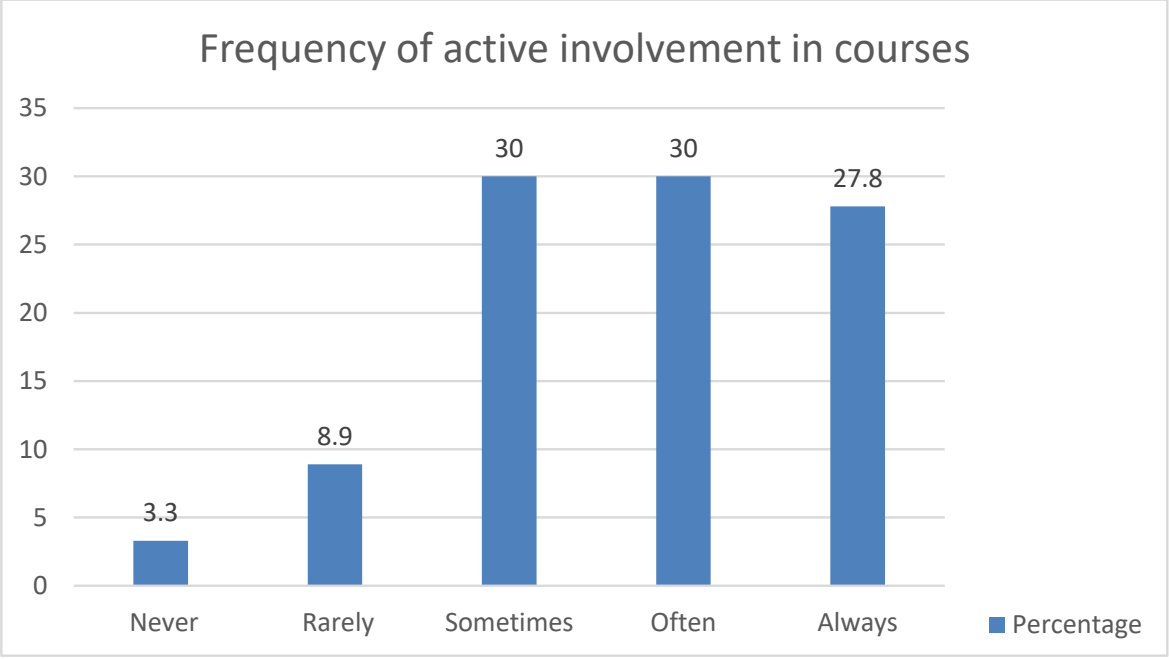

Figure 3 : Frequency of student active involvement in courses

57.8% Of students actively participate in courses as shown in figure 3.

- Self-management of learning resources (P4):

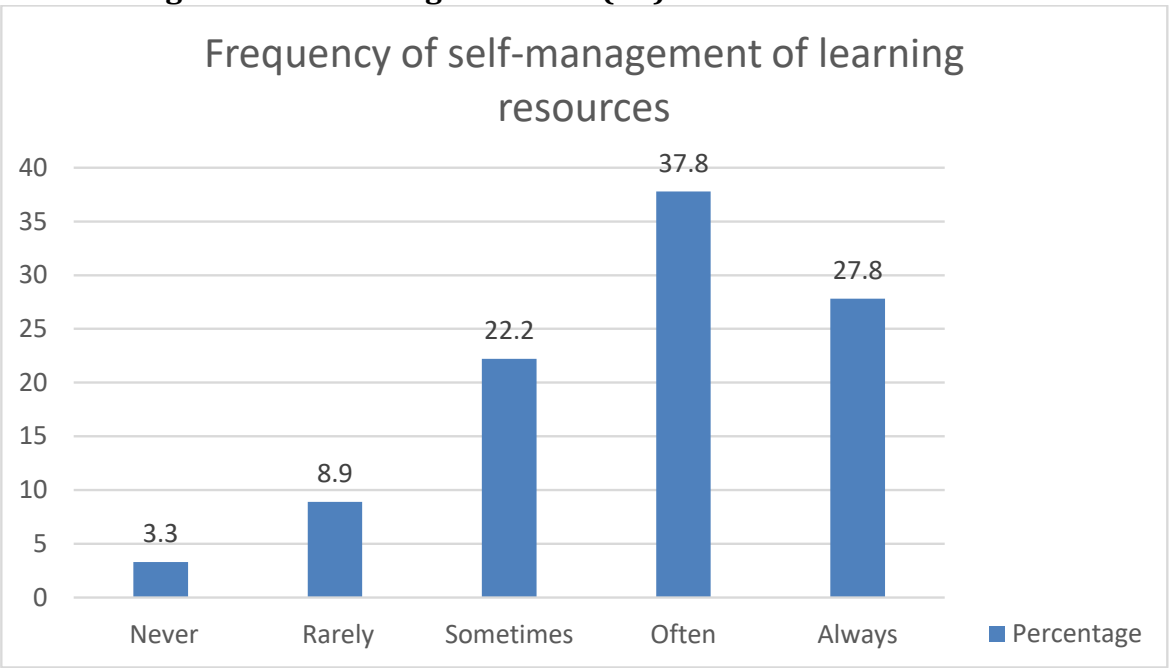

Figure 4: Frequency of student self-management of learning resources

The figure 4 indicates that 65.6% of respondents have a self-management of learning resources.

- **Collaborative learning activities (P5):**

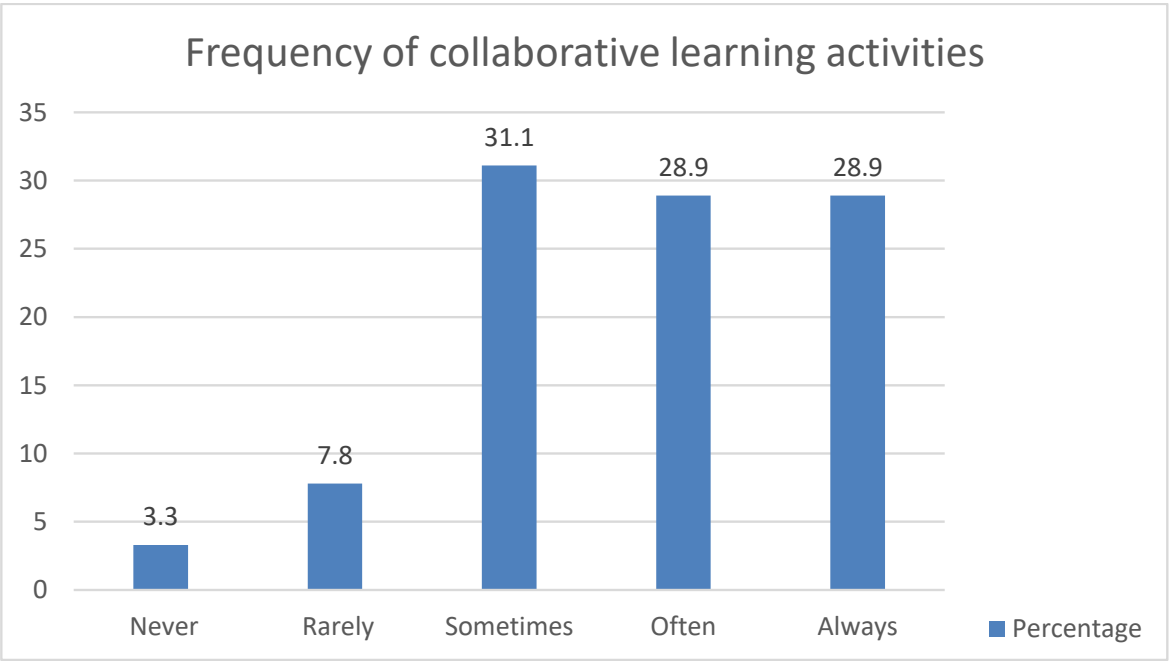

Figure 5: Frequency of student collaborative learning activities

57.8% of students claim to do collaborative learning activities as shown in figure 5.

2. Correlational analysis

The authors carried out a correlational analysis between the five active e-learning learning practices and the four social and emotional skills selected for the study, to confirm or refute the hypothesis formulated previously. The questionnaire includes ordinal qualitative variables that are measured by two scales: the frequency scale to assess the active learning practices perceived by students, and the Likert scale to assess students' perception of their mastery degrees of social and emotional skills. The Kendall's Tau-B correlation coefficient, which measures the association between variables and enables the significance test to be carried out to test the null hypothesis, which assumes the absence of an associative relationship between the pairs of variables tested. The results are presented in Table 2.

Table 2: Bivariate correlation of perceived mastery of social and emotional skills and active e-learning practices

			Conversational and expressive skills (SES1)	Reflection and abstract thinking skills (SES2)	Innovative and creative skills (SES3)	Teamwork skills (SES4)
Kendall's Tau-B	**Work according to a training project (P1)**	Correlation coefficient	0,378**	0,417 **	0,389**	0,310**
		Sig. (Bilateral)	0,000	0,000	0,000	0,000
	Use of Technologies (P2)	Correlation coefficient (Bilateral)	0,224**	0,308**	0,275**	0,206*
		Sig. (Bilatérale)	0,010	0,000	0,002	0,018
	Active Involvement (P3)	Correlation coefficient	0,493**	0,502**	0,492**	0,338**
		Sig. (Bilateral)	0,000	0,000	0,000	0,000
	Self-management of learning resources (P4)	Correlation coefficient (Bilateral)	0,376**	0,448**	0,450**	0,344**
		Sig. (Bilatérale)	0,000	0,000	0,000	0,000
	Collaborative learning Activities (P5)	Correlation coefficient	0,236**	0,311**	0,297**	0,259**
		Sig. (Bilateral)	0,006	0,000	0,001	0,003
		N	**90**	**90**	**90**	**90**

* Correlation is significant at the 0.05 level (two-tailed).
** Correlation is highly significant at the 0.01 level (two-tailed).

The results reveal significant and highly significant correlations between the five active e-learning practices and the four social and emotional skills, stating a correlation and an association relationship between these variables.

- **Work according to a training project (P1):**

Conversational and expressive skills have an almost positive association and highly significant correlation: correlation coefficient (r=0.378) with working according to a training project. For self-reflection and abstract thinking, there is a positive association and highly significant correlation: the correlation coefficient has an R-value of 0.417. For innovative and creative skills (r = 0.389) and for teamwork skills (r= 0.310) which attest to a highly significant correlation.

- **Use technologies in courses (P2):**

Conversational and expressive skills, self-reflection and abstract thinking, and innovation and creativity skills are positively and highly significantly correlated: the correlation coefficients (r=0.378; r=0.308; r=0.275) with the use of technologies in courses. For teamwork skills, the correlation coefficient (r=0.206) shows a weakly significant correlation.

- **Active involvement in courses (P3):**

Measurement of the correlation coefficient shows that the conversational/expressive skills, self-reflection/abstract thinking, and innovation/creativity skills have a positive strong correlation and are highly significant: the correlation coefficients (r=0.493; r=0.502; r=0.492) with active involvement in courses. For teamwork skills, the correlation coefficient (r=0.338) indicates a weak highly significant correlation.

- **Self-management of learning resources (P4):**

The correlation coefficients indicate that self-reflection and abstract thinking skills, as well as innovation and creativity skills, have an almost strong positive correlation and are highly significant: the correlation coefficients (r=0.448; r=0.450) with self-management of learning resources. For conversation and expression skills and teamwork skills, the correlation coefficients
(r=0.376; r=0.344) indicate a weak and highly significant correlation.

- **Collaborative learning activities (P5):**

Measurement of the correlation coefficient indicates that the conversational/expressive skills, innovation/creativity skills, and teamwork skills have a positive weak correlation and are highly significant: the correlation coefficients (r=0.236; r=0.297; r=0.259) with collaborative learning activities. For self-reflection and abstract thinking, the correlation coefficient (r=0.311) reveals a weak highly significant correlation.

V. Discussion and conclusion

Descriptive analysis reveals that more than half the students claim to have mastered the four social and emotional skills examined. During courses, teamwork is highly emphasized due to the collaborative nature of group activities involved in the learning process. The use of e-learning technologies is the most frequently adopted learning practice. This is perfectly explained by the techno-pedagogical environment involving the use of technological resources. This is perfectly in line with the literature cited above: "Digital technologies offer such personalized, collaborative opportunities" (European Commission, 2021).

Correlational analysis shows an association between all study variables. The skills dealt with in the study can be categorized into two groups: personal skills oriented more towards know-how, such as self-reflection and abstract thinking skills; innovative and creative skills; and social skills, such as conversational and expressive skills; teamwork skills expressing a broad range of know-how. The results enable us to identify correlations between active teaching-learning practices in a technological and academic environment. Active involvement in courses encourages students to mobilize personal skills such as self-reflection and abstract thinking skills, as well as innovative and creative skills. This also

applies to the self-management of technological learning resources, which enables the development of both social and emotional skills. Indeed, motivating learners enables them to get involved and take an active part in the learning process. Thus, on the one hand, to clearly specify the competencies targeted by the teacher during lessons, whether personal/emotional or social skills and on the other hand, to choose the appropriate activity to carry out with students to develop and build disciplinary competencies in harmony with social and emotional skills. Active pedagogy in a university context facilitates the acquisition and construction of social and emotional skills because it creates situations where these skills are mobilized in the learning path of disciplinary skills. Figure 6 summarizes the main findings on the construction of social and emotional skills in university e-learning through the specification of active learning practices. The study can therefore contribute to the development of these key skills.

Figure 6 Summary of findings on building social and emotional skills in university e-learning

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