International Journal of Evaluation and Research in Education (IJERE)
Vol. 11, No. 2, June 2022, pp. 829~838
ISSN: 2252-8822, DOI: 10.11591/ijere.v11i2.21937

Main individual factors influencing the learning approaches: The first-year students' perspective

Omar Jiyed[1], Ouafae Idrissi Aydi[2], Anouar Alami[1], Nadia Benjelloun[3], Moncef Zaki[3], Mohammed Lachkar[1]
[1]LIMOME, Faculty of Sciences Dhar Mahraz, Sidi Mohammed Ben Abdellah University, Fez, Morocco
[2]SLLACH, Faculty of Sciences Dhar Mahraz Sidi Mohammed Ben Abdellah University, Fez, Morocco
[3]LISAC, Faculty of Sciences Dhar Mahraz, Sidi Mohammed Ben Abdellah University, Fez, Morocco

Article Info

Article history:

Received Jun 22, 2021
Revised Mar 4, 2022
Accepted Apr 3, 2022

Keywords:

Approaches to learning
Deep learning
First-year
Learning quality

ABSTRACT

Currently, the quality of student learning i.e. in-depth learning is essential in any planned reform. The massification phenomenon is one of the challenges facing this quality. This study explored the student characteristics influencing the learning process in an open access faculty, namely, the Dhar El Mahraz Faculty of Science in Fez, Morocco. Semi-structured interviews were conducted on 15 freshmen who enrolled in Earth and Universe Sciences and Life Sciences (EUS/LIS) program and presented a dominance of a surface learning approach. The main factors encouraging surface learning emerged were the learning habits and strategies, language competencies, motivational aspects and gender. The findings serve as an input for the design and implementation of actions to enhance deep learning.

Corresponding Author:

Anouar Alami
Engineering Laboratory of Organometallic, Molecular Materials and Environment (LIMOME), Faculty of Sciences Dhar Mahraz, Sidi Mohammed Ben Abdellah University
P.B. 2626, Fez 30000, Morocco
Email: anouar.alami@usmba.ac.ma

1. INTRODUCTION

To date, an emerging literature focuses on the pedagogy and learning of large groups, particularly in developing countries [1] like Morocco. Moreover, most students are entering the higher education environment, expressly the open access one, with strategies and learning approaches poorly built and not well adapted [2]. Therefore, they do not allow the deep learning particularly to vulnerable populations as the case of first-year university students [3].

Faced with these challenges gradually identified, improving training systems and education conditions has become a pressing concern. As a result, it becomes critical to understand how faculty can effectively meet the needs of a large and diverse student population without compromising the quality of teaching and student learning [4]. In Morocco, the quality of education is considered as the second dimension of the performance framework [5]. Also, the quality of learning depends on the efforts made to ensure in-depth learning [5], [6] instead of surface learning. Avoiding the latter is for several pioneer authors in education sited at the heart of all learning quality schedules [7] and it is even more likely to be associated with high academic performance [8]. Furthermore, understanding how students experience and approach their learning is a track in upstream for fostering the deep learning. This is measured by a long-term retention of knowledge, its integration and an ability to use it in both a personal and professional context.

Nowadays, it was possible to carry out and gather information about the deep/surface student learning experience via the student approaches to learning (SAL). The SAL are considered by Marton and Säljö [9] to be a specific reaction to the content of both the learning task and to the experience context. The SAL, as theoretic framework, are generated by the congruence between the motive (Why) and the strategy (How) in a learning task [10], [11]. To succeed in higher education, a student must develop a higher level of motivation and develop appropriate strategies to achieve their individual goals [12]. Two scenarios are presented generally: the learners can undertake their missions using a deep approach (DA) characterized by an intrinsic motivation and a deep meaning seeking. An understanding of the learning material is the result aimed. In the other side, the students can be motivated extrinsically and primarily driven to choose the failure avoidance. They therefore use routine memorization strategies simply to meet the requirements of assessments and restricted themselves to the minimum taught.

The approach adopted in this case is the surface approach (SA) [12]. Approaches to learning adopted by students appear to be an important factor in determining both the quantity and the quality of their learning [8]. Since the fact that the quality of learning requires an adoption of a DA and an avoidance of a SA [13], the researchers and education experts main objective is still to circumvent factors leading to the SA especially in academic open access institutions [10].

Those factors are well illustrated into another useful framework working as a system namely the 3P (Presage-Process-Product) model developed by Biggs [10], [13]. In this model, the characteristics of the students and those of the teaching context both considered as "presage" factors interact. Again, each of them acts in its right on the SAL designated as a learning "process". The "presage" and the "process" components react to produce finally the "product" (i.e., learning outcomes). The model then shows that these three components (3P) intermingle in a system and in a reversible manner with different weights. In the literature review, it has been proven that presage factors including the student's characteristics as input factors have an influence bulk on the SAL [10].

Moreover, individual characteristics have been already studied as variables to examine their influence on the promotion or discouraging the deep learning. These characteristics have sometimes been reported supporting the surface approach [14], but in the other hand the evidence was not found [15]. In fact, studies having explored SAL based on the gender are very inconclusive. While some works admitted a higher significant difference concerning females' DA scores compared to the males ones [16], [17]. Other study have not stated this significant difference [18]. Also, the factors influencing the SAL had been studied in terms of educational background, initial learning approach [19] and age [20], they all had been found conclusive. Additionally, one's motivation also has an indirect effect on students' approaches to learning through the perceptions of the content, in particular through the students' perception of a lack of information [21], [22]. Also in recent study, the correlations between approaches to learning and self-efficacy were both in the same direction [23]. Moreover, the student personality, depending on whether it is extroverted or introverted, is another additional factor to explain the acquisition of SA and DA respectively [24].

All things equal otherwise, this investigation aimed to diagnose and treat various difficulties inherent to the students that may promote and encourage surface learning at the expense of deep learning. Having an idea on this may allow feedback that can induce a discussion within the academic community about some aspects of effective teaching and can correct the student's way of learning [25]. To our best knowledge, among Moroccan first-year scientific students in a mass academic institution, studies into the quality of learning related to the surface learning were never addressed. Accordingly, this investigation intends to answer, based on the data already gathered and provided that the freshman population are adopters of SA (VS in-depth learning), the subsequent principal question: "From the first-year students view, what are the main individual factors that influence the surface learning (discouraging the deep one) in a scientific open access environment?" Resulting sub questions were requested as: i) What are the main factors influencing the student's SA and being specific to the Moroccan context?; ii) Do they match and describe the dominant learning approach (i.e., SA)?; and iii) Since those factors are context dependent, to what extent they converge with the international contexts?"

2. RESERCH METHOD

It is important to note that most of the previous studies were conducted in a quantitative way based on different settled self-report questionnaires. Nonetheless, to achieve the general goals and specific objectives of this study, the design is at its base incorporating a sequential explanatory mixed method [26] in which quantitative and qualitative data are collected and analyzed sequentially. Indeed, the qualitative data (interviews in this case) had shed light on many areas that were not possible only by reading the self-reporting results [26]. That is said, this study is a continuation of a quantitative stage which started at Dhar El Mahraz Faculty of Science (Fez, Morocco) and involved the first-year students all enrolled in a common

program named Earth and Universe Science/Life Science (EUS/LiS). One of the famous measuring instruments used was the Study Process Questionnaire (SPQ) [11] and even more with its latest revision the revised two-Factor Study Process Questionnaire (R-SPQ-2F) [25]. We translated and validated an Arabic version according to the standards.

We chose to base our study on this last version for several reasons. Our theoretical framework is based on the SAL as defined by the designer of the instrument. The R-SPQ-2F is less bulky in its current form [25] and it has shown a great importance and a global use [27] in different contexts. The SAL quantitative data of 150 students (99 males and 51 females) taken randomly were analyzed and evaluated during the beginning of the second semester of 2018. The results concluded the hypothesis that is the dominance of surface learning approach scores (SA=40.06; SD=1.24); (DA=28.28; SD=1.26). To meet and explore the research question about student factors that affect the surface approach, a sub-sample of 15 students (all with SA scores tendency) from the initial population was selected as presented in the Table 1.

Table 1. Demographic data of the qualitative sub-sample

Numbers	Gender	Age	Study level	Program
10	Male	19-22	S2*	EUS/LiS**
5	Female	19-21	S2	EUS/LiS

*S2=Second semester of the first year
**EUS/LiS=Earth and universe science/Life science

Those students were subjected to face-to-face semi-structured interviews during the middle of the second semester of 2018. With the native students' language, the interviews revolved around the major question. Given the vastness of the field and its subfields that could be marked in the free narrative, probing questions were included to get further detail about responses. One's individual characteristics as a factor can encompass his skills, his motivations, and his way of studying. So, starting by gaining the view around the patterns of the student SA adopted, we also used a few questions that were put in a context during the interview like "how do you usually study?", "have you planned a goal in your life?", "so, you have a time management calendar, don't you?", "how can the instruction language influence your study strategies?". Again, some other instantly coaching questions were intersecting the students' answers like "what makes you till that? and "how can you explain that".

After having got permission and consent, all interviews were recorded and transcribed. Each participant was coded by a number from 1 to 15 followed by the acronym of his/her gender (i.e., M=male or F=female) (example: student 1 M, student 13 F). Keywords stood out are highlighted from participants' responses and were coded. As the coding process progressed, the wording of the codes was revised to include new data cases and/or differentiate between codes avoiding at the maximum overlapping clusters. After a final review, the factors associated with the students' characteristics that seemed predicting the surface approach were grouped together by themes (factors) and sub-themes (sub-factors) [26]. We have described the themes as important based on the number of participant contributions and iterations [26]. We made a great effort to balance points of view so that each group of opinions could be adequately represented.

3. RESULTS AND DISCUSSION

This study, given the surface learning approach dominance, answers the basic research question which explores their point of view on the individual factors as a part of presage factors to explain this dominance. In this section, we should mention that to illustrate the respondents' statements belonging to their respective themes, we limit ourselves to one or two extracted transcripts for each sub-theme. The main themes (factors) emerged are shown in Table 2. Thus, the influence of these factors is represented either by a lack of or ignorance and/or misuse of the factors concerned, or by the way of perceiving these factors. Sometimes they are even represented in terms of candidates' demographic characteristics (i.e., the gender).

Table 2. Main student factors promoting the surface approach

Main factors	Sub-factors
Learning habits and strategies	Processing and organizing information strategies
(Lack of or misuse)	Assimilation process strategies
	Study time management.
Low linguistic competencies	Low competences levels of understanding, writing and communicating
Demographic characteristics	Gender
Motivational aspects	Lack in one's skills confidence and learning task perception.
(Lack of or low intrinsic motivation)	Lack of setting objectives and perception of the future
	Program choice perception and low interest in the course.

3.1. Learning habits and strategies

All evocations have confirmed the influence of learning strategies in grade upstream and downstream on the learning approach at the first-year students. Statements like "I am so limited on my study time", "I bother with memorizing and I have to memorize", "I am not in control of my study schedule", "in the exam I try to memorize the handout" and so on, are the claims iterated in the interviews. The transcripts showed that most of the students were very committed to using the information for further reproduction. They indicated that they opted for recalling content as the primary mode and strategy for learning. According to the participants, the strategies encouraging this imbalance are diverse. We have recorded their lack of adherence to time management, to information processing, its organization and its acquisition. At the same time, we have captured a nonexistence of alternative strategies or misuse of the appropriate ones. The main subthemes (secondary factors) emerged belonging to this main factor are formulated as:

3.1.1. Processing and organizing information strategies

It was appeared that most of the students (13/15) were struggling to take notes during the classes and they found a strain to organize and synthesize the material studied. Besides, the habit of "spoon-feeding" was their willingness. The following excerpt stated witness to this:

> *"But because of our school system, we're so used to the teacher giving us everything, and I like to find everything on the table (smiling). I'm not so good at taking notes. When I take notes, I would like to have some additional course material from the teacher… It is a good source for the exam."* (Student 11 F)

3.1.2. Assimilation process strategies

Regarding this factor, many students (10/15) highlighted the habit of usual memory techniques. Their statements focused on the repetition techniques added to some accommodated methods they have used in their high school studies. Two excerpts attest to this:

> *"I read and I reread the course (the notes and the handout), paragraph by paragraph, I finally try to memorize. To end I do a little layer, nice strategy, isn't it? Besides, that is what I did in high school."* (Student 13 F)
> "*To memorize well, I highlight, I use a lot of color, I even try to rewrite the handout content. But we still have a problem of forgetting, so I have to redo several passages to memorize well."* (Student 14 F)

3.1.3. Study time management

Most of the students questioned found high difficulties to manage their school time. They said they still suffer from the employability of their time before, during and after their class sessions. So, they confirmed by the majority (12/15) that they managed the school schedule with a certain lightness. This situation was reported as mediated by certain factors. Mainly they mentioned the workload (lessons, tutorials, practical work, out-of-class work) and the lack of effective time management strategies. Therefore, their revisions usually were intensified before exams. The testimonies corroborate the proposed findings:

> *"In fact, with lack of time, I find myself sometimes unfocussed, sometimes I do not know how to start. The work is over loaded and diverse. I could not manage my time well (time management)."* (Student 9 M)
> *"I never made a schedule for study work, my revisions are done from time to time during the studies, but my greatest concentration occurs just before the exam period."* (Student 3 M)

The students' evocations about the influence of the learning habits and strategies, go in the same alignment with international research in France [2], Australia, and China [28]. The lack of study skills can lead to what could be called the minimalist perspective defined as being restricted at the minimum stipulated [2]. We share the same view regarding the SA. We think that the students are confronted with new teaching context and methods, once they are at the university, and without regular guidance as in secondary school, they have to "learn how to learn" in words of Boyer *et al*. [29]. This situation therefore acts along their learning process by providing a dominant surface approach. Indeed, one of the main strategies identified as making the difference in our tertiary system, but also difficult for newcomers, is concerning the information processing particularly the note-taking technique. The first-year students have for a long time used to follow just what is given by their teachers in their prior school. So, as already confirmed, these students cannot take notes and at the same time struggle with the teacher explanation and understand the course mediated by a

foreign language. Note-taking can be done then in several ways: in one hand the student tries to transform into notes in verbatim mode the entire taught speech. On the other hand, one makes an intentional selection of important elements and alternate taking notes and moments of inattention. This poor information processing way lead certainly to poor course material organization.

We agree some studies stated that many students have a difficulty to identify the essentials they should note consequently they don't know what should be taken in mind in their revisions [30]. These considerations in our opinion affect the "assimilation process" which will be converted to literary memorization and highlight the adoption of the surface approach. This state leaves an ambiguity to the students and pushes them to limit themselves to organize the notes into fragments superficially and finally to seek an essential SA feature. In doing so, they demonstrated an examination focus, essentially. In regard with the study management (planning, time organization), the students showed an intention to organize their study time but they missed strategies or used wrong methods. They often recognized a poor distribution of their personal work along the study period. The trouble of time organization is evident in the university experience of scientific freshmen [29]. As a result, students deploy an exam-oriented planning which is, as seen, an important aspect of the SA. It revealed that under a time pressure, the emphasis is conveyed to the bare essentials. Once again, it what was summarized in this quote:

> *"In the first semester session, as I had not a lot of time, I memorized at primary the teacher's handout, I returned to the previous years' exams, then I reviewed the notes taken during the course…. I was lucky, some questions were as I expected."* (Student 8 M)

Certainly, in concordance with this planning disorganization, the strategies described by the respondents can lead essentially to the memorization and mechanical encoding of new information. This is shown as international state [2], [31], [32]. So, we could also and easily state that the degree of mastering the study management may have a great influence on the way to undertake the learning process and the embracing of one of the two learning approaches. In quantitatively wording, one recent Indonesian study found that the "lack of studies organization" was one of the factors influencing positively the surface approach and represented 29% of the student self-reports [32]. This confirmed the iteration frequencies reported in the interviews. As seen, the learning habit as main factor is in turn mediated by many other influential aspects that conjointly lead to the SA adoption.

3.2. Low linguistic competencies

Another limiting factor most repeated during the transcripts' analysis was about their French language levels related to the teaching/learning environment. We have to recall that the teaching in Morocco is presented in Arabic from primary to secondary school while studies in the scientific higher education are delivered in French. Most students interviewed mentioned that the change of the instruction language in higher education and the low French competencies presented a great obstacle for following and understanding the courses. They made a relationship between the importance of the language factor and the quality of understanding or assimilating the content presented to them. Otherwise, this situation influences their note-taking strategy (9/15), hinders communication in class (8/15) and promotes a literary memorization (11/15). Furthermore, several students (8/15) reported finding a great difficulty in understanding or concentrating on fast-flowing teacher speech. Good examples are taken up by the following extracts:

> *"Now we study in French whereas before we studied in Arabic. Teachers are aware of this problem, but they are used to giving courses in French, I find that it difficult to follow the teacher, sometimes it's hard to understand…. So, I try to memorize literally when preparing the exams."* (Student 2 M)
>
> *"… Yes, in the exam, because of the language I can learn excerpts verbatim to understand the issues and can answer."* (Student 11 F)

Moreover, it was clear, from repeated interviewees' statements, that French as an instruction language at the university had a great influence on students' learning. In terms of language abilities, new enrolled students were thus faced with a serious problem, that of not knowing how to interact in a particularly demanding Scientific university environment and of missing the capacity to understand courses completely. A previous study in Moroccan context showed that the lack of linguistic competence is ranked at the top of nine elements and factors hindering the learning of geology concepts among first-year students [33]. We also found that the complaints of targeted students regarding their linguistic competencies were transversal and various (processing, organizing, assimilating, using and recalling the information). Namely, they concerned among other things about a powerlessness to take notes, difficulties to interact and communicate in classes and a hindrance in formulating their exam answers. Those issues probably contribute to a SA adoption.

The same contention was revealed in Chinese quantitative study [34]. It reported that English as a medium of instruction versus Chinese as a mother tongue could limit the student ability of reading and writing and finally forced them to use that surface strategy. We argue following the testified statements that many students when they miss the ability to self-formulate the teacher speech and miss the written skills they move toward to the rote process. They memorize the definitions and the concepts in the same French words and limit themselves to the essential. Students who have a difficulty in understanding therefore try to learn small sections or reproduce verbatim. In the same target, we could affirm that a low French communication ability for a student in reception position leads to a poor information process at that time to a missed meaning construction. This construction is seen at the heart of in-depth learning as aforementioned.

3.3. Student's demographics factor

It is important to note that some sub questions were addressed to collect some demographic features identified in the literature like having an influence on the SAL, namely the origin of the student, the family situation, the social style and the economic situation. Those aspects have not been or less reported influencing the interviewees SA. However, gender factor is perceived by students as part likely to impact the way to start the learning and the way to act on a task. The interviews' data provided some differences in the way that students of both sexes approached their learning. Except that with questions of incentives, some male students (4/10) testified that their female classmates being more active, participating in group work and discussions in class compared to them. Also, they reported that females are more diligent about their work and attendance in the classroom. The females (3/5) themselves feel to be fairly more motivated. They described this state by saying that they keep lending their notes to their passive male colleagues and used to ask more questions in class. The following statements describe this situation.

> *"When the teacher, sometimes, asks, a silence reign…. Generally, they are the girls who take part, and the same thing happens when the teacher offers group work, the girls are the first to get started."* (Student 7 M)
> *"My friends and I try to be present in the classes, we interchange the notebooks … we form a group to prepare exams. We girls have a good memory better than boys."* (Student 14 F)

The results revealed that the females were pretty more assiduous and regular in the course attendance and showed an intention to participate in the amphitheater a bit more than their male peers. Finally, we can advance that the result can be explained by a higher females' motivation. Previous research [35] recorded as well as our previous findings that statistically females despite their SA adoption, showed deep scores a bit higher than males.

3.4. Motivational aspects

The motivations of the respondents were essentially extrinsic. It was evident that the respondents were only interested in doing the bare minimum according to the motifs behind. Those motivational aspects are diverse and were reiterated implicitly and explicitly. The extract of these factors was fairly more complex since they affect several elements at the same time.

3.4.1. Confidence in one's skills and task perception

Many opinions (11/15) blamed the students' personal profiles and stated a confidence lack in their ability to learn. Also, the same category illustrates the devaluation given to the proposed task. Sometimes, according to the transcripts, they felt as having lost control over the learning tasks.

> *"… I don't know how I can express that? But sometimes I feel unable to face the subjects taught when in the Amphitheater. Is it the fear? Is it another thing? I do not know. Sometimes, I do not find pleasure and passion for what is assigned. I'm trying to do my best."* (Student 7 M)

3.4.2. Setting objectives and perception of the future

The majority of students' comments (13/15) recorded strongly an extrinsic motivation (surface motive) vis-à-vis to the studies. In one hand, the interviewees expressed not having set any tangible studies goals (15/15). In the other hand, various students (9/15) found themselves with a lack of clear long-term objectives or with no well-established ones. Although they told having known their career or future vocations. Indeed, the quotations indicated a concern only about the final marks and degrees.

"I don't set any objectives before starting the courses, neither in the learning process after classes nor in exam session as you referred to me. But I point the grade I will reach. Frankly, what matters for me is to validate the modules and have a bachelor degree, then I will see what I have to do." (Student 4 M)

"Well, basically, my vocation is to follow the biology field, I like some courses very much in this common program. I don't hide my concern about marks and exams, my aim is having high grades. You'll have to get good grades to be selected in different competitions, or even if you want to continue your studies in master classes, etc. … The concern arises at the start of the study, you should therefore concentrate on getting good grades…" (Student 15 F)

3.4.3. Perception of the program choice and the interest in the course

Several students (10/15) claimed that the choice of their academic discipline (program) had a negative impact on their intrinsic motivation. With low results at high school, they were not allowed to be admitted at good institutes or limited access universities. They chose then to be oriented towards studies at public universities to obtain any degree. This therefore led to a poorly adapted choice of the program and induced a selective interest in the courses belonging to. According to the students' opinions, the curriculums in the EUS/LIS program are not equal at the same level of students' interest.

"I do my best in studying the program … but if I study in an engineering school, I will double the effort, the future is clear and visible… Now I have enrolled in this common EUS/LIS program, I don't know which field I will follow in the second year (Biology or Geology), so my interest to the courses is selective." (Student 2 M)

"For me, some courses are overloaded and were not as I expected. I feel like I'm learning based on my interest in the course. I think I remember much more when I care." (Student 9 M)

We can easily notice following these statements that the lack or decrease of the intrinsic motivation feature (DA motive) were less recorded as recurring aspects, but the extrinsic motivation (SA motive) was. In a quantitative study low motivation was found a factor supporting SA and represented 19% of student responses [32]. Our results indicate that the motivational characteristics are multidimensional and of different types. Previously, it was proven that an individual student's level of motivation may depend upon his or her background, perspective and perception of the world around them [12] which create an emotion connection. When emotions run negative, the SA emerges and the learning is weakened or completely disturbed [36].

Many students admitted a lack of confidence in their abilities to learn and sometimes lost the value given to the proposed task. Several studies showed that a good self-perception with respect to the competence to accomplish a task is tended to encourage the use of in-depth learning strategies and less expose to the use of the SA [37]. Effectively, these beliefs influence the SAL, they impact the choice and the initiation of learning activities (the motives) similarly they affect the effort and the cognitive involvement (the strategy) in the tasks' learning. Also, we confirm that student's beliefs and one's judgement on the self-ability to solve a task (self-efficacy) could determine the student orientation towards one type of learning objectives which proved having an influence on the SAL [38]. In this regard and in line with this study results, participants expressed not having well-set objectives but they find themselves focused on avoidance of the threat. The latter became the main objective. Indeed, the avoidance objectives defined as to avoid failure's humiliation and incompetence in the student community redirect to the weakness of intrinsic motivation as opposed to the achievement objectives [38]. We conclude that this conception of the avoidance is merged in the student process of learning and consequently tend to be correlated with their SA. That means these facts are considered as implicit and unconscious objectives when no well-established ones exist.

Regarding the perception of the future factor, we were convinced of the relationship between academic persistence and positive attitudes and perceptions toward students' futures and careers. That seems to push them to have a greater motivation and to be more engaged in deep learning. This is connected with the finding of a past research [12]. Lacking these persuasive perceptions and with an unpromising future, the students questioned expressed, on the contrary, pragmatic aspirations linked to extrinsic motivation, the main pattern of surface learning. The respondents reflected on their surface motivations for commencing undergraduate studies and selecting a scientific degree. They quoted having worked to achieve minimal standards learning and course requirements to obtain just a diploma and degrees. They only want to guarantee access to the offered opportunities (competitions, master degree). Their responses strongly underpin the educational system expectations, and agreed the institutional and academic access system based on high marks and/or higher-level degrees' selection.

In addition to a blurred future and the lack to formulate concrete personal objectives, the development of the SA patterns seems to be influenced by the program choice perception added to the interest given to the courses. The students had no issues but to join the available disciplines at the scientific

public faculties. Consequently, they oriented their choice to such program pragmatically according to the benefit got afterward. This choice leads students to shorten their studies to what can be functioning immediately after their graduation and therefore to be limited to the basics that meets this need. As among French, students a strong interdependence was found between minimalist characteristics (similar to SA features) and the pragmatic choice [2].

We could identify a larger iteration positively correlating between the narrow objectives that students seemed to project in the future, the choice and the perception of the program and the surface approach to learning. We thoroughly join some studies on motivation that students who enroll in a course chosen out of a desire to learn show a high intrinsic motivation [36]. One prior work, when investigating scientific students' attitude and motivation, revealed that "Students will feel happy and happy to learn a subject if students like the subject" [35]. If not, they will demonstrate a surface motif and subsequently get involved in the subjects superficially. As well, we conclude that the surface approach does not fully indicate a lack of interest to some courses themselves. Some contents in the first-year scientific EUS/LIS common program were perceived as peripheric to the future interests of the new students (i.e., biology VS geology orientation). The concentration is provided then at the minimum to those peripheric courses.

It is clear that from the variety of empirical individual factors, most are quantitatively investigated among many contexts. Some of them were simple and clears (e.g., gender, age, language competencies) but others have a large meaning (e.g., low motivation, lack or organized studying, personality) and are of a multitude of elements. Accordingly, the priority of influence and factor categories are diverging from study to study. We can finally confirm that the specific main factors to prioritize to decrease the SA features in our Moroccan context as listed in the Table 2.

It appears that the individual characteristics emerged overlap and jointly contribute to the use of the surface approach. It was not easy for us to nuance between the different themes and/or subthemes. We can see, for example, a relationship between the influence of language competence and learning strategies (i.e., processing, organizing and assimilating information strategies), between these strategies and motivational aspects. Similarly, the relationship is seen within sub-factors themselves (e.g., the motivational aspects). Regarding this, the meaning given to "the study" (i.e., course perception and interest) implies objectives (study objectives) that, when clear and explicit, have a direct positive impact on in-depth learning. Also, the motivation to learn depends on both the objectives set and what is perceived when performing a task. Moreover, several factors may encourage the adoption of surface approaches to learning directly or indirectly through students' perceptions of the context and the context its self (teaching, teacher).

4. CONCLUSION

The study revealed that the main individual characteristics as factors encouraging the SA found are the habits and the maladaptive learning strategies, weak language skills, the lack or the lower intrinsic motivation and to some degree some demographic characteristics (i.e., gender). These findings contribute to enhance the quality of learning namely the deep learning. This study brings out that the Moroccan freshmen should develop appropriate learning strategies and well-set objectives in agreement with and under the university context.

Be focused on supporting the student for adapting to the current choice of their program with an effective manner and to be encouraged to make sense and to find an interest in the content, independently of their choices. Likewise, an integration of a supporting program about learning methods and strategies in the curriculum is highly expected. Act on this means helping students to recover the shortfall detected in the intrinsic motivation and in the self-confidence and consequently enhancing deep learning. This study presents a strong point residing in the adoption of the qualitative method. The mixed analysis can otherwise operate to project new researches that complement the investigation of these phenomena. Also, it is suggested as an input to manage the design and implementation of further actions to improve quality learning. But as such as this study presents some limitations. In fact, it is a preliminary study and it limited to the context of a faculty. We therefore recommend carrying out further studies with other stakeholders maybe to explore other factors in order and fully grasp the processes and additional elements of the surface approach, especially in an extended Moroccan context.

REFERENCES

[1] D. J. Hornsby, R. Osman, and J. De Matos-Ala, "Teaching Large Classes," in *Large-Class Pedagogy Interdisciplinary perspectives for quality higher education*, Sun Press, 2013, pp. 7–17.
[2] S. Paivandi, *Apprendre à l'université*. Louvain-la-Neuve: De Boeck Supérieur, 2015.
[3] R. J. Elson, S. Gupta, and J. Krispin, "Students' perceptions of instructor interaction, feedback, and course effectiveness in a large class environment," *Journal of Instructional Pedagogies*, vol. 20, pp. 1–19, 2018.

[4] T. Dean, A. Lee-Post, and H. Hapke, "Universal Design for Learning in Teaching Large Lecture Classes," *Journal of Marketing Education*, vol. 39, no. 1, pp. 5–16, Apr. 2017.
[5] Instance Nationale d'Évaluation, "Cadre de Performance du suivi de la vision stratégique à l'horizon 2030," 2019.
[6] M. Leiva-Brondo *et al.*, "Study Approaches of Life Science Students Using the Revised Two-Factor Study Process Questionnaire (R-SPQ-2F)," *Education Sciences*, vol. 10, no. 7, p. 173, Jun. 2020.
[7] M. Baeten, E. Kyndt, K. Struyven, and F. Dochy, "Using student-centred learning environments to stimulate deep approaches to learning: Factors encouraging or discouraging their effectiveness," *Educational Research Review*, vol. 5, no. 3, pp. 243–260, 2010.
[8] C. K. Jayawardena, T. N. Hewapathirana, S. Banneheka, S. Ariyasinghe, and D. Ihalagedara, "Association of Learning Approaches With Academic Performance of Sri Lankan First-Year Dental Students," *Teaching and Learning in Medicine*, vol. 25, no. 4, pp. 334–341, Oct. 2013.
[9] F. Marton and R. Säljö, "On qualitative differences in learning: I-outcome and process," *British Journal of Educational Psychology*, vol. 46, no. 1, pp. 4–11, Feb. 1976.
[10] J. Biggs, "Student Approaches to Learning and Studying," *Australian Council for Education Research*. p. 145, 1987.
[11] S. Sarzoza, "Aprendizaje desde la perspectiva del estudiante: Modelo teórico de enseñanza y aprendizaje 3P," in *Acción Pedagógica*, vol. 22, no. 1, 2013, pp. 114–121.
[12] Q. H. Mazumder, "Student Motivation and Learning Strategies of Students from USA, China and Bangladesh," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 3, no. 4, pp. 205-210, 2014.
[13] J. B. Biggs, "From Theory to Practice: A Cognitive Systems Approach," *Higher Education Research & Development*, vol. 12, no. 1, pp. 73–85, Jan. 1993.
[14] F. McDonald, J. Reynolds, A. Bixley, and R. Spronken-Smith, "Changes in approaches to learning over three years of university undergraduate study," *Teaching & Learning Inquiry*, vol. 5, no. 2, p. 65, Sep. 2017.
[15] K. F. Mehboob Ali and K. F. Rizvi, "Comparing The Learning Approaches Using Biggs Revised Study Process Questionnaire (R-SPQ-2F) Among Dental Undergraduates," *Journal of the Pakistan Dental Association*, vol. 28, no. 02, pp. 68–73, May 2019.
[16] J. M. Carpenter, "Effective teaching Methods for Large Classes," *Journal of Family and Consumer Sciences Education*, vol. 24, no. 2, pp. 13–23, 2006.
[17] O. Jiyed *et al.*, "Preliminary Evaluation of Student Approaches to Learning in Moroccan Context," *British Journal of Education*, vol. 8, no. 2, pp. 22–30, Feb. 2020.
[18] S. Altıntaş and İ. Görgen, "The Effects of Pre-service Teachers' Cognitive Styles on Learning Approaches," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 7, no. 4, p. 285, Dec. 2018.
[19] J. Biggs, "What the Student Does: teaching for enhanced learning," *Higher Education Research & Development*, vol. 18, no. 1, pp. 57–75, Apr. 1999.
[20] W. Lake and W. Boyd, "Age, Maturity and Gender, and the Propensity towards Surface and Deep Learning Approaches amongst University Students," *Creative Education*, vol. 06, no. 22, pp. 2361–2371, 2015.
[21] Å. Diseth and Ø. Martinsen, "Approaches to Learning, Cognitive Style, and Motives as Predictors of Academic Achievement," *Educational Psychology*, vol. 23, no. 2, pp. 195–207, Mar. 2003.
[22] E. Kyndt, F. Dochy, K. Struyven, and E. Cascallar, "The direct and indirect effect of motivation for learning on students' approaches to learning through the perceptions of workload and task complexity," *Higher Education Research & Development*, vol. 30, no. 2, pp. 135–150, Apr. 2011.
[23] K. J. Herrmann, A. Bager-Elsborg, and V. McCune, "Investigating the relationships between approaches to learning, learner identities and academic achievement in higher education," *Higher Education*, vol. 74, no. 3, pp. 385–400, Sep. 2017.
[24] Q. Xie and L. Zhang, "Demographic Factors, Personality, and Ability as Predictors of Learning Approaches," *The Asia-Pacific Education Researcher*, vol. 24, no. 4, pp. 569–577, Dec. 2015.
[25] J. Biggs, D. Kember, and D. Y. P. Leung, "The revised two-factor Study Process Questionnaire: R-SPQ-2F," *British Journal of Educational Psychology*, vol. 71, no. 1, pp. 133–149, Mar. 2001.
[26] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 4th ed. Thousand Oaks: SAGE Publications, 2014.
[27] W. Lake, W. Boyd, and W. Boyd, "Understanding How Students Study: The Genealogy and Conceptual Basis of A Widely Used Pedagogical Research Tool, Biggs' Study Process Questionnaire," *International Education Studies*, vol. 10, no. 5, p. 100, Apr. 2017.
[28] J. Biggs and C. Tang, *Teaching for Quality Learning at University. What the Student Does*. McGraw-Hill Education, 2007.
[29] R. Boyer, C. Coridian, and V. Erlich, "L'entrée dans la vie étudiante. Socialisation et apprentissages," *Revue française de pédagogie*, vol. 136, no. 1, pp. 97–105, 2001.
[30] A. Coulon, "Le métier d'étudiant: L'entrée dans la vie universitaire," *Educacao e Pesquisa*, vol. 43, no. 4. pp. 1239–1250, 2017.
[31] A. Boulet, L. Savoie-Zajc, and J. Chevrier, "Les stratégies d'apprentissage à l'université," *Collection ES*, no. 6. p. 201, 1996.
[32] S. Lindblom-Ylänne, A. Parpala, and L. Postareff, "What constitutes the surface approach to learning in the light of new empirical evidence?" *Studies in Higher Education*, vol. 44, no. 12, pp. 2183–2195, Dec. 2019.
[33] A. Chakib, Z. Ghalem, J. Ghalloudi, M. Talbi, H. AKRIM, and A. Sayad, "Évaluations de l'apprentissage des étudiants de la filière SVTU (Faculté des Sciences Ben M'Sik, Casablanca, Maroc)," *Arabian Journal of Earth Sciences*, vol. Vol. 1, pp. 24-33, Jan. 2014.
[34] L. Gow, D. Kember, and R. Chow, "The Effects of English Language Ability on Approaches to Learning," *RELC Journal*, vol. 22, no. 1, pp. 49–68, Jun. 1991.
[35] J. Jufrida, W. Kurniawan, A. Astalini, D. Darmaji, D. A. Kurniawan, and W. A. Maya, "Students' attitude and motivation in mathematical physics," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 8, no. 3, p. 401, Sep. 2019.
[36] S. J. Schmidt, "Exploring the influence of course elements and emotional connection to content on students' approaches to learning in an introductory food science and human nutrition course," *Journal of Food Science Education*, vol. 19, no. 2, pp. 59–73, Apr. 2020.
[37] L. Coertjens, G. Vanthournout, S. Lindblom-Ylänne, and L. Postareff, "Understanding individual differences in approaches to learning across courses: A mixed method approach," *Learning and Individual Differences*, vol. 51, pp. 69–80, Oct. 2016.
[38] Å. Diseth, "Self-efficacy, goal orientations and learning strategies as mediators between preceding and subsequent academic achievement," *Learning and Individual Differences*, vol. 21, no. 2, pp. 191–195, Apr. 2011.

BIOGRAPHIES OF AUTHORS

Omar Jiyed is a Doctoral candidate, Center of Doctoral Studies "Sciences and Technology" in the Engineering Laboratory of Organometallic, Molecular Materials and Environment (LIMOME), Faculty of Sciences Dhar Mahraz, Sidi Mohamed Ben Abdellah University (USMBA), Morocco. He was graduated as an agriculture state engineer in 1996. He joined the greatest society of Agriculture Development as a pedagogical trainer and tutor of the recruited youngers. His research is focused on the teaching learning paradigm. He keeps teaching and training the personal development and pedagogy (training of trainers, accelerated learning, coaching and consulting). He can be contacted at email: omar.jiyed@usmba.ac.ma

Ouafae Idrissi Aydi is teacher-researcher at the Faculty of Sciences Dhar El Mehraz Fez, Morocco. She is associate member of the Laboratory of Engineering of Organometallic, Molecular and Environmental Materials (LIMOME). Her field of research are: Didactics, teaching of French (FOU, FLE), semiology, pragmatics, techniques of expression and communication). She can be contacted at email: ouafae.idrissiaydi@usmba.ac.ma.

Anouar Alami is a member of Engineering Laboratory of Organometallic, Molecular Materials and Environment (LIMOME), Faculty of Sciences Dhar El Marhaz, Sidi Mohammed Ben Abdellah University, Morocco. He studied Chemistry at Montpellier II University, France. He received his Ph.D. in 1991. He then joined in 1992 at the Department of Chemistry at the FSDM, USMBA, Fez, Morocco. He prepared his state doctorate thesis degree in Organic Chemistry in 1997 at USMBA. His research is focused in various fields: Heterocyclic chemistry, molecular biology, science education, applied research in pedagogy, Educational Technology. He can be contacted via email: anouar.alami@usmba.ac.ma.

Nadia Benjelloun is Professor of Physics at the Dhar El Mahraz Faculty of Science of Sidi Mohamed Ben Abdellah University in Fez and a member of the Research Laboratory in Computer Science, Automation, Signals and Cognivitism (LISAC). Her research in physics didactics and pedagogical engineering focuses mainly on three main areas. The first axis concerns the study of misconceptions and misrepresentations among pupils and university students in the fields of mechanics, optics, electricity. The second axis concerns the experimentation and evaluation of the integration of information and communication technologies in teaching. The third axis focuses on the study and evaluation of the impact of e-learning and artificial intelligence on teaching and learning. Her email is: nadia.benjelloun@usmba.ac.ma.

Moncef Zaki is Professor of Physics at the Dhar El Mahraz Faculty of Science of Sidi Mohamed Ben Abdellah University in Fez and a member of the Research Laboratory in Computer Science, Automation, Signals and Cognitivism (LISAC). He obtained two doctorates in mathematics from the University of Strasbourg in France and from the University of Mons Hainault in Belgium. He joined the Department of Mathematics of the Faculty of Sciences of the University of Fez, as a professor in January 1993. Currently, his research concerns still relate to the didactics of mathematics and science in general, for which he continues to supervise doctoral students. He can be contacted at email: moncef.zaki@usmba.ac.ma.

Mohammed Lachkar is Professor of Chemistry at the University Sidi Mohammed Ben Abdellah in Fez (Morocco) and the Director of Engineering Laboratory of Organometallic, Molecular Materials, and Environment (LIMOME). He obtained his PhD in 1988 from the University Louis Pasteur of Strasbourg (France). From 2007 to 2012, he was the Head of the Chemistry Department at the Faculty of Sciences of Fez. He was the coordinator of the pole of research of medicinal and aromatic plants of the University Sidi Mohamed Ben Abdellah from 2015 to 2019. His specialized area is macrocyclic and coordination chemistry, phosphates and phosphites chemistry, organic-inorganic hybrids materials, biomaterials, and natural products chemistry. He can be contacted at email: mohammed.lachkar@usmba.ac.ma.