



Identification of student's initial representations for accompanying use : Exploratory factor analysis

Mustapha AKOUL¹; Saïd LOTFI²; Mohamed RADID³

1. Observatory of Research in Didactics and University Pedagogy (ORDIPU), Faculty of Science of Ben M'sik, Hassan II University of Casablanca, BP 50069, Ghandi, Morocco. akoulmustapha@gmail.com
2. Laboratory in Educations Sciences and Training Ingeneering, Assessment in Physical Activity and Sport (LMSEIF); (ESSBAP) Normal Superior School (ENS), Hassan II University of Casablanca, BP 50069, Ghandi, Morocco. [Mail: lotfisaïd@gmail.com](mailto:lotfisaïd@gmail.com)
3. Laboratory of chemistry of materials in Ben M'sik Faculty; Hassan II Casablanca University; Morocco. [Mail: m.radid@gmail.com](mailto:m.radid@gmail.com).

ABSTRACT

This study is conducted among students in training. Its objective is to analyse, through factorial exploration, students' perceptions of their levels of appropriation of academic competencies and their support needs.

To this effect, an exploratory factorial analysis is carried out using data from a survey composed of 12 dimensions and 62 statements. The latter measures 11 oral skills, 09 written skills, 08 practical skills and 12 parameters for asserting support needs. The factorial exploration determined 10 latent variables or factors. This was based on a sample of 147 participants F (n=53 ; 36.1%) M (n=94 ; 63.9%).

The factor structure was examined under SPSS 21 using a maximum likelihood extraction method with Varimax axis rotation assuming moderate inter-factor correlations (Elliot and McGregor, 2001).

Our results showed from this analysis the extraction of 10 factors explaining 74.38% of the total variance in the data on competencies required during training, as follows :

Written Production (WP). This factor (relating to written competence) explained 6.52% of the variance. The analysis expresses a discrepancy of the items by (-.746 and .512). Participants tend to be less appropriate for compliance with instructions when they are able to organise themselves alone during investigative work or document exploration.

Oral and Written Communication (OWC). This factor (relevant to oral competence) emerges with a 6.97% variance ratio and also included 2 items (Speaking in front of the audience, communicating ideas in writing to the teacher). The analysis expresses a variance indicated respectively by (.730 and -.711). The student's mastery of the oral situation does not therefore ensure the student's control of written expression or oral exchanges in a duel (student-teacher).

Intensity of Effort and Artistic Expression (IEA). This factor (relating to physical competence) accounted for 9.27% of the variance. The analysis expresses a

discrepancy between the items. It is indicated respectively by (-.747 and .645). As a result, the ability to express intense effort is not at all favourable for artistic expression. As a result, intense physical effort is not compatible with grace and artistic expression.

It has been found that the prior disparities between students (type of baccalaureate...) reveal pedagogical workcamps to be established later on during the readjustments of the different courses of study. According to these results, not all the participants have the same constraints or expectations in the curriculum of this training course.

The declaratives representations on the appropriation of the competences identified, grouped and analysed, affirm that the so-called "university" or less professionally oriented courses are generally considered to be of little interest according to the conclusions of the participants Mean $2.54 \pm sd .86$, i.e. 45% n=67 of the interviewees. The assertions expressed in the results give rise to a measure of action, which is that of reviewing the theoretical side of the training, making it adequate and up to date in the movement of university changes and more precisely in the sciences and techniques of physical and sports activities (STAPS).

Key words : accompaniment, competencies, factorial analysis, needs, representations.

1. INTRODUCTION

No one can reject the fact that effective training in any domain will depend mainly on knowledge of the target population for training. The latter will therefore essentially involve exploring the knowledge of the conceptions of the people targeted by these activities. This initial knowledge is the basis for a rigorous understanding of the social space in which the students' learning will take place.

Consequently, it would be utopian to claim to understand a population of students in a training programme without

adopting a scientific approach to this end. Making predictions about the conduct of learners will require the use of systematised analysis procedures that also allow for extensive and enduring monitoring.

New students in higher education experience a series of ruptures (gaining autonomy, group size, complexity and quantity of subjects, assessment methods, work planning, etc.).

To this end, special assistance seems obvious, and even highly recommended for a good majority of these university novices. For a long time our students have testified that, apart from their actual training, there are no other parallel activities that meet their real needs. It is therefore important to listen to their concerns and identify their usefulness so that the training is increasingly adapted and optimised to their expectations. It was this initial observation that generated the concern to find a scientifically reliable means of systematising their listening. But also to properly measure the correspondence of the verbalisations expressed mutually during this training. This was the unifying intention of this quantitative and exploratory study.

It is for this reason that we have adopted "factorial analysis", which is a method of statistical processing aimed at synthesising data collected from the questionnaire administered to the students. A synthesis formulated in dominant trends, designated by factors with percentages of explanatory variances. The exploration of these data generates knowledge, which will help to describe the facts, to make decisions. It is also a means of explaining relationships and predicting future developments in a given activity. This is what we aimed for in this first stage of foreshadowing in order to develop a useful and effective support system for the students in the host training structure.

2. CONCEPTUEL FRAMEWORK

Increasingly and as a factor of change in university pedagogy, universities have set up support systems for students with adaptation difficulties. Some of these schemes have been set up on the basis of local initiatives initiated by motivated individuals, while others have been institutionalised without any real consideration being given to the scientific nature of their origins or their pedagogical effectiveness, let alone their efficiency. (Michaut, C., 2003). Attendance at support or assistance schemes is mainly a result of students' behaviour and relationship to their programmes. Attendance, changes in the appropriation of skills, personal working time and the nature of the difficulties encountered further explain the differences in the use of these systems. Tutoring or support in some universities has almost become an 'institution', while other institutions are content to set up a marginal system with no real use (Michaut C, 2003).

This is largely due to the fact that beginners have a perception of being left to their own devices and are

faced with a great deal of uncertainty, both about the content of this personal work and about how it should be organised. Their work therefore appears to be rather unrationalized and, more often than not, does not fit in with fixed, planned schedules. In many cases the imbalances between days, weeks or months are blatant, and students themselves report a poor distribution of their personal work in their timetables. (Faurie, et al, 2004).

Moreover, teacher education programmes do not necessarily meet students' expectations, regardless of where they are trained (Bozhuisen, Bromme & Gruber, 2004); (Leroux, 2011); (Montgomery, 2007). The latter would like to be better trained in order to take more account of students' diversity in terms of skills and gender as well as cultural diversity (Salazar Noguera & McCluskey, 2017) and to manage a heterogeneous group satisfactorily (Brault-Labbé et al, 2013).

Pre-service teacher education has a put a strong impact on teachers' entry into the profession and on their professional development (Lopes & Pereira, 2012). Future teachers' beliefs about teaching and learning influence the development of their identity as teachers (Stenberg, 2011), which can be compromised by lack of preparation and gradually lead to abandonment of the profession.

Therefore, identifying students' initial representations facilitates their quest for genuine training. They are often shared and they convey knowledge, potential for action and values relating to the world they model. From this point of view, we consider them with (Ruel, F. Désauels. J& Larochelle. M, 1997) as positions which are not reduced to a simple rational consensus among the actors but, on the contrary, put an ethical and epistemological commitment on their part when they take action, whatever their sphere of activity. For this study, therefore, student representations are an important element in the means of implementing an effective support system.

Survey tools for prospecting purposes are essential for getting to know students and consequently for providing them with the right support in the various requirements of the training programme. These investigations into students' representations and predispositions guide teaching and support staff in specifying the choice of increasingly innovative methods and support technologies.

That's why many initial and continuing university training courses today rely on systems that combine, to varying degrees, face-to-face and distance learning phases, supported by digital environments (Charlier, Deschryver & Peraya, 2012). Called hybrid training courses, they integrate two different training modalities characterised by the time allotted in each: a face-to-face modality carried out by face-to-face meetings with the teacher and a synchronous or asynchronous distance modality on a distance intervention platform.

Indeed, the transformations experienced by students in a hybrid training course can take place in the form of

human support which becomes a crucial element of the training and its engineering. Some authors such as (Hannoun, 1972) and (Clutterbuck, 2014) consider that the empowerment of the subject is the result of a non-directive approach. However, the combination with a directive stance on the part of the teacher and/or tutor remains necessary based on the needs of the learners (Berthiaume & Justeau, 2015); (Clutterbuck, 2014).

The concept of autonomy, which appeared in the 1970s (Holec, 1970), is defined as the ability to take charge of one's own learning and to take responsibility for different decisions : setting objectives, choosing strategies, finding individual answers, etc. (Holec, 1970). This capacity does not come about by chance, it is a global or even transversal skill that everyone can acquire under the impact of the environment.

Successful coaching is based on a strategy in which the coach responds to learners' needs and knows how to withdraw gradually as their autonomy develops (Adinda & Marquet, 2017). According to (Clutterbuck (2014), coaching postures that promote learner autonomy are non-directive, insofar as these postures put the learner at the centre of his or her learning, thus developing his or her analytical and critical thinking skills. Coaching strategies that do not fit this description are referred to as sponsorship mentoring. It has been shown that a non-directive posture is conducive to student empowerment, and that a directive posture is necessary based on student needs. That said, the reality shows that some teachers still, most of the time, exercise a directive stance in supporting the development of learner autonomy. Non-directive intervention in a support system can only take place through the production of prospective knowledge of students' needs and expectations during a course. This prospecting is the result of a systematised approach using standardised and valid tools. The Exploratory Factor Analysis (EFA) method is used for this work, in order to highlight the latent structure of the data obtained from the first version of the questionnaire. This with the intention of identifying a certain number of factors (or underlying dimensions) which will subsequently make it possible to explain why some of our variables are inter-correlated, while other variables are not.

3. RELEVANCE OF THE STUDY

While we are aware that being a student can be a potential source of pressure, stress and even fatigue, we wanted to build on this preliminary work to set up a support team for new students. The implementation of individual and collective support mechanisms will emerge from these types of exploratory surveys, which are likely to be called upon later in a wide range of education and training professions.

4. METHODOLOGY

4.1 Questionnaire

A survey entitled "analysis of students' training needs". It is composed of 12 dimensions which were measured using 62 items) all grouped into three main blocks of variables : one relating to practical skills; then another relating to oral skills and a final one relating to written skills. Each block presents a series of closed-ended, multiple-choice questions with an order of preference. The items chosen for this questionnaire have been processed from a corpus of the competences targeted in the training repository of the students questioned. They were shared and validated by teacher-researchers who took part in the design of the training programmes of the sectors interviewed. Responses were received on a type preference scale (Totally satisfactory - Somewhat satisfactory - Rarely satisfactory - Not at all satisfactory). Or on another question as an example, the choice is on a scale of mastery (I am in perfect control of the situation - I find the requirements affordable - I have a perception of the difficulties that are accumulating - I am drowning in major shortcomings). We administered 250 copies of Google forms to the students in the first and second year of training and we only obtained 147 usable answers in this work.

All ethical measures were respected. The study reveals the main results obtained for all the dimensions measured by the survey.

4.2 Participants

The profiles of the students who made up the sample for this study are heterogeneous in terms of physical profiles, as is the case for the types of previous training followed. There were 147 volunteer students with an average age of (17±21) years (F n=53 ; 36.1% ; M n=94 ; 63.9% ; n=147 ; 100.0%). They were studying in two different courses at the Ecole Normale Supérieure (ENS) University Hassan IICasablanca.

4.3 Data analysis

The Exploratory Factor Analysis (EFA) method is used to highlight the latent structure of the data obtained from the first version of the questionnaire.

The factor structure was examined under SPSS 21 using the "Maximum likelihood" extraction method with Varimax-type axis rotation presuming moderate inter-factor correlations (Elliot and McGregor, 2001), which makes it possible to study the factor structure of the data collected without reference to predetermined dimensions. We have voluntarily retained as many interpretable factors as possible. The KMO index (Kaiser-Mauer-Olin) and the Determinant of the correlation matrix (Table 2).

For the selection criteria of the items per factor, only those items with a saturation greater than 0.40 and only

those factors with an eigenvalue higher than 1 were selected.

5. RESULTS

5.1 Satisfaction of the needs and areas of accompaniment desired by the students

In the area of satisfaction of training needs : Do you consider that all the modules of the training course provide you with everything you need to practise the teaching profession ?

The answers showed a convergent distribution of scores on the three scales : "I have a perception of the difficulties that accumulate 3.15±1.23" ; "I have a good grasp of the requirements 2.41±0.73" ; "I am in perfect command 3.54±0.92."

On the area of identification of needs: Do you think you identify the needs for practising the teaching profession that you are preparing?

The answers given showed the following breakdown : Totally identified 2.20±0.90 ; Somewhat identified 3.44±0.92 ; Very confused 3.20±1.26.

As a result, the study reveals the absence of significant correlations on several target variables illustrated below on the (Table.1 / Satisfaction of needs). The cross-check targeting the postulate of the existence of correlations is invalidated. That's because of the variables which missed this correlation.

Indeed we can see that on the question of the relevance of the training modules to the expectations of the profession of PES teacher (Mean & sd 2.54±.86), the nature of initial training has no correlation with the participants' responses. However, the students who perceive of progress in the curriculum are those who believe perfectly well in the relevance of the modules, considering them very useful in the training curriculum.

For those who are lost in the difficulties "I feel the difficulties accumulating", do not believe in the adequacy of all the training modules, considering them useless or with little relevance in the curriculum.

And finally on the area relating to the perception of the need for support (Table 1 / Satisfaction of needs). The answers raised respectively the following scores and variations (Q3 2.51±1.02 and Q4 2.26±1.03). The result is the identification of a generalised tendency towards the needs of students for sustained and targeted support. Even students who are in full control of the training situation approve of this need, but in particular areas. (Table.1)

On the other hand, students, in order of preference, mainly wish to be supported in a work that targets transversal skills and tools for better personal development during their training. (Table. 1 / Desired areas of support); Work on transversal skills (81.6% n=120). They also wished to receive support to improve their access to tools for improving their professional writing; Professional writing (61.2% n=90) Table.1. They also responded that they would like to receive support in language development; Language development (57.1% n=84) Table.1.

The type of baccalaureate in initial training revealed a positive correlation with the desire for support in professional writing. Chi 2=59,461, df=40 P=0,008 ; Bac SVT 12.9% < Bac PC 30.6%; Table.1.

Students with a science baccalaureate (PC option) show higher demand compared to other types of baccalaureate, in this case the SVT baccalaureate. A desire for support to improve professional writing.

At the end of this phase, it became clear that the disparities between students in the profiles of the different types of baccalaureate revealed that there are pedagogical projects to be developed at a later stage during the readjustment of the different courses. According to these results, not all students have the same constraints or expectations in the curriculum of this training.

Table 1. Satisfaction of needs and areas of accompaniment preferred by students : Effect of gender, type of initial training baccalaureate and perception of progress.

Satisfaction of needs	Mean ±sd	Type of baccalaureate	Effect of the perception of progress
			P value
Do you consider that all the modules in the training give you all that you need to practise teaching ?	2,54±.86	ns	0.003*
Do you feel that you can identify your needs for the next teaching profession you are preparing for ?	2,20±.90	ns	0.003*
Do you have a perception of the need for support in overcoming shortcomings during your training ?	2,51±1,02	ns	0.005*
Do you also consider the programming of a coaching sessions to be beneficial at the current stage of your training ?	2,26±1,03	ns	0.004*
Preferred areas of accompaniment	% (n)	Type of baccalaureate	Effect of the perception of progress
Speaking in front of the audience	54,4% (80)	ns	ns
Adaptation to university programmes	55,1% (81)	ns	ns
Physical training methods	38,8% (57)	ns	ns
Perfecting your language skills	57,1% (84)	ns	ns
Mental preparation and stress control	34,0% (50)	ns	ns
The use of the body in communication	33,3% (49)	ns	ns
Work on appropriate soft skills	81,6% (120)	ns	ns
Professional writings	61,2% (90)	0,008*	ns

ns : not significant
 (*) : Khi 2= n-value, df= n-value P= n-value

5.2 Factorial analysis of competencies

The (Table.2) presents the measure of the KMO (Kaiser-Mauer-Olin) index and the Correlation Matrix Determinant are two indices of the existence of correlation patterns between all the items of the scale to be validated. The KMO is recommended to have a high value, which indicates relatively compact correlation patterns allowing to clearly distinguish factors (value <0.70) (Neuville, Bourgeois and Frenay, 2004), our results show that this index is just satisfactory for the EPMS scale globally (0.61) and specifically for the sub-scales (=0.82). Whereas the Correlation Determinant requires a reduced value for everything being different from zero (Durand, 2003). This is the case of our results, this index is very low with a significance of .002.

Table 2. KMO Index and Correlation Determinant

Indice KMO (1) et test de Bartlett		
Kaiser-Meyer-Olkin index for measuring sampling quality.		.399
Bartlett Kht-square	sphericity test approx.	374,604
	ddl	231
	Signification	.002

(1) : Precision measurement of Kaiser-Meyer-Olkin sampling.

The factor analysis extracted 10 factors explaining 78.38% of the total variance in the data on competencies required during training with eigenvalues greater than 1 (Table.3). Thus, the factor matrix shown summarizes the saturation coefficients of each item on the 10 factors. Each factor includes two, three or four items. The degrees of significance of the links are expressed by the KMO indicator on two trends, either positive (converging) or negative (diverging).

These factors are formulated and generated in terms of fields of action that will serve as reference or framing points in a global competencies base.

Genesis of Written Production (GWP). This factor N°1 explained 6.52% of the variance and comprised 3 items (Respecting the imposed writing instructions, Organising free documentary research, Writing documentary summaries). The analysis expresses a divergence of one item from the two others indicated respectively by (-.746; .512 and .541). This means that the participants tend to be less appropriate in terms of compliance with the instructions. This is the case when they are able to organise themselves during investigative work or document exploration. Working in free enquiry provides opportunities for them to express their autonomy and they find it more interesting.

Nature of Resources Mobilised (NRM). Factor N°2 explained 9.27% of the variance and included 3 items (Follow the intensity of the practical sessions, support an

endurance effort, support intense efforts in short periods). The tendency could also be formulated by a divergence between the nature of the efforts mobilised and which are not similar. A divergence of the two items indicated respectively by (.827; -.677 and .765). As a result, the maintaining of enduring effort significantly interferes with the high intensity of action.

Maitrise Technico-Temporal (MTT). This factor N°3 mentioned 8.39% of the variance, it also included 2 items, namely (progress in learning techniques, managing time properly during practice). The configuration of the score recorded is respectively (.774 and -.732). The two items expressing two competences grouped in this factor, but totally different or even opposable. The appearance of the two items expresses that the progression in technical learning of specific skills does not facilitate the construction of a transferable know-how : that of spatiotemporal management in a physical practice.

Taking Notes to Rebuild the Course (PNRC). A variance score of 8.20% explained the representation of factor N°4 in the global analysis. (Taking notes during the conference, using his draft, digitalizing and organizing his lessons on his own). Two items seem to be opposable with a third, with the indices displaying respectively (.739; -.708 and .675). This fourth factor thus expresses the difficulty in discerning a fit between the items that we initially thought were in close accordance. Students manage to adapt their course collections to the numerical mode of organisation.

Intensity of Effort and Artistic Expression (IEA). Factor N°5 showed a 9.27% variance ratio and also included 2 items (Supporting intense strength exercises, leading an artistic activity in a group, composing acrobatic figures alone). The analysis also expresses a divergence for 2 out of 3 items grouped together. It is indicated respectively by (-.747; .645 and .587). The ability to express intense effort is not at all compatible with the trainee's ability to compose a production of artistic expression. The trend shows a divergent evolution. The better the mastery of artistic expression production, the less the ability to be effective during intense effort. The capacity for collective or individual composition of figures diverges significantly from the capacity to express an intense effort.

Concentration and Use of Media (CUM). This factor N°6 explained 7.61% of the variance and thus included 2 items (Listening and concentrating during the lessons, using multimedia during oral presentations, able to follow the lessons digitally). The analysis expresses a divergence indicated respectively for the two items out of the three cited (-.541; .417 and .563). The ability to communicate orally and to master the tools of new technologies do not converge with the ability to listen and to concentrate. The two items relating to digital use in writing and speaking are convergent and present in the competencies declared as mastered.

Oral and Written Communication (OWC). Factor N°7 emerges a 6.97% variance ratio and comprises 3 items, two converging positively and a third relating to the exchange with the teacher, diverging with the two oral skills (speaking in front of the audience, communicating

ideas in writing to the teacher, showing interest in speaking in a group). This otherness of the items is indicated respectively by (.730; -.711 and .654). Consequently, the student's mastery of the oral situation does not guarantee him/her the control of written expression or oral exchanges in a duel (student-teacher).

Memorization and Argumentation (MA). Factor N°8 distinguished in the flow of the analysis a 6.59% variance ratio and also included 2 items (Memorize course notions, argue ideas through course notions). The analysis also expresses a very significant divergence of the two items. This otherness of items is spread respectively by (.801 and -.524). As a result, the capacity developed in memorization of notions does not favour the capacity to use and argue with the notions learned by rote. Even more, the anchoring of performance in memorization is significantly opposed to the capacity of argumentation and intelligent reasoning of the notions to defend a coherent reasoning in written writing. The tendency is to move away from antinomic and interfering links to useful and lasting acquisitions.

Affinity and Collective Production (APC). This factor N°9 emerges from its turn a ratio of 6.48% of the variance and included 4 items, namely: (Making presentations in groups, being accepted by others in the group, getting along well in the group, easily integrates other affinities). However, in contrast to the other factors, the analysis here expresses a very significant convergence between the items. This concordance of items expresses the links of suitability of the abilities to produce with a group and the perception of acceptance by the group.

Indeed, the perception of acceptance and belonging to a small group stimulates a positive transfer that facilitates the success of the students' collective productions. The perception of being a useful member of the group is as much as the perception of collective success is strongly accessible to the group.

Recapitulation capacity (CR). And finally for this last factor N°10, a ratio of 6.85% of the variance appears and included 3 items, namely: (Elaborate a synthesis production, make a summary mental map, schematise the syntheses digitally). The analysis of this factor thus expresses a very significant variance between the items. This otherness of items is reported respectively by (-.759; .617 and .653). The capacity to perform in synthesis production is therefore significantly opposed to the capacity to elaborate mental maps and to schematise digitally. Indeed, we can consider that the perception of being efficient and performing in written synthesis production does not automatically guarantee the mastery of the realisation of mental maps which are in reality schematic tests on digital supports. Synthesis is disparate to the extent that it affects two fields of student skills: that of schematising on a computer and that of synthesising linguistic expressions.

Table 3. Matrix combining mobilized competencies and variance factors

Variance explained : 78.38 %										
10 factors explaining 78.38% of all items										
Mobilised competencies	GWP	NRM	MIT	PNRC	IEA	CUM	OWC	MA	APC	CR
	6.32%	9.27%	8.39%	8.20%	7.50%	7.61%	6.97%	6.59%	6.48%	6.85%
Observe the required writing instructions										
Organising free documentary research										
Writing documentary summaries										
Follow the intensity of the practical work session				.827						
Supporting an endurance effort										
Support intense efforts over a short period of time										
Progress in learning techniques										.714
Managing time properly during practice										-.732
Take notes during the conference										.739
Use your draft for the written course										-.708
Digitising and organising your courses on your own										.675
Support intense strength exercises										-.747
Leading an artistic activity in a group										.645
To compose acrobatic figures alone										.587
Listening and concentrating during the course										-.541
Using media during the oral										.417
Able to digitally follow-up on lessons										.563
Speaking to the audience										.730
Communicate your views in writing to the teach										-.711
Manifest interest in speaking in a group										.654
Memorize course notions										.801
Argument of ideas through course notions										-.524
Making presentations in groups										.778
To be accepted by others in the regroupings										.664
Gets on well with the group										.567
Easily integrates other relationships										.686
Elaborate a synthesis production										-.759
Making a summary mind map										.617
Drawing up digital summaries										.653

Extraction method: Principal component analysis.
Rotation method: Varimax with Kaiser normalization.
a. Convergence of the rotation in 12 iterations.

6. DISCUSSIONS

These results showed that student disparities are recorded at several levels. These differences reveal pedagogical projects that need to be developed as a matter of urgency. This will mainly concern readjustments of the different streams within the physical education department.

The introduction of specific training, calling for a different paradigm of conduct, will be an indicator of the professionalisation of content where the student is placed at the crucial centre of interest. This structural innovation will give growing interest to possible support systems with a practical aim, useful and accessible to all. It is therefore impossible to neglect the "learning" student because "cognitive activity, however perfectly theorised, cannot do without the energy of desire that gives it life and strength". Legrand. L & Meirieu. P (1988). Especially in the preparation of a practical intervention profession.

The subject-based approach, i.e. that centred on the objectives of knowledge, is also indispensable yes, but is insufficient because an objective never says anything about the method of achieving it. The method of our choice in this respect involves listening to the students' feelings. It is a questioning of the training activities through the identification of the representations of the students who have experienced the assimilation of the transformation subjects (from objectives to contents).

These representations would be for us "a primary form of knowledge of the context: each individual decodes the environment, objects, situations, in a way that is

particular to him" (Jodelet. D 2009). If we contextualise these remarks in relation to our students in this training context, we can say that each person constructs their own representation in a personalised experiential, where they retain what they want. If a multitude of contents is given during each module, each student feeds his representation of the activity by making a subjective selection of the usefulness and relevance. This is what our study has revealed through the disparities in responses, which are sometimes very difficult to group into a single trend.

In any case, these declarative representations on the appropriation of the competences identified, grouped and analysed, affirm that the so-called "university" or less professionally oriented courses are generally considered uninteresting according to the conclusions of the participants Mean $2.54 \pm sd .86$ or 45% $n=67$ of the interviewees. The affirmation expressed in the results gives rise to a measure for action, which is that of reviewing the theoretical side of training to make it adequate and feasible in the light of the changes that the entire university landscape is undergoing, and more specifically in the sciences and techniques of physical and sports activities (STAPS).

If the results show that students are keen to learn more about soft skills in support, this will encourage them to orient their curricula towards the introduction of cross-disciplinary training.

Indeed, the evolution of technologies, particularly digital technologies, and the rise of collaborative platforms in a university with a digital trend are shaking up the initial training landscape in this type of institution. This will effectively serve to set up support systems that evolve through a progressive continuum from proximity and face-to-face to distance and with very little frequency towards total autonomy. Akoul. M & Lotfi. S & Radid. M (2019).

7. SUGGESTIONS

If the students participating in this survey confirm results in which they do not have the same constraints or expectations in this training programme.

It is therefore more judicious to optimise the fields and the amount of time devoted to their support systems. By also focusing on the acquisitions and initial preludes they have at their disposal. Deficiencies in certain fields of training will undoubtedly increase if the necessary adjustments are not made. Through these results, the students expressed a real need to take action with targeted measures to gradually improve the way in which students are represented.

Flament. C (2009), suggests that two cases of transformations of representations are possible : - The brutal transformation : it is a break with the past, and results from a practice in clear contradiction with the initial representation. Temporary constitutions will allow the contradiction of updating to be supported for a time by the meeting of the representation and the actual practice of the novelties. But when the contradictions become too numerous, they create an incoherence from

which there is no way out. Hence the need to optimise the constraints of changes in student support systems.

- Progressive transformation : this results from the increase in the frequency of practices which will progressively lead to a change in the level of activation of peripheral schemes.

Consequently, the project of transforming action of these initial representations has not emerged from a vacuum. It is on the basis of a methodical and structuring analysis (factorial analysis) of students' verbal data that we identified the facts of the representations to be processed and transformed.

With Roussel-Gillet, I. & Van Poppel, S. (2010), we consider two different challenges: 1) to provide the student with a background of academic knowledge and generic training competencies in the long term; 2) to accompany him/her in the field to apply the academic knowledge, understand professional uses and guarantee his/her employability. Most of the time, these two objectives converge and the student draws his or her personal and professional path by integrating and appropriating knowledge in both the educational and professional worlds.

In addition to the construction of knowledge and competences, there is also the construction of identity. This involves enabling students to identify the expectations implicit in a professional situation, to identify with potential roles in the profession they are preparing for, and also to encourage them to become aware of their own aspirations and values in order to make an informed choice, to learn to think, to situate themselves and to act autonomously and responsibly. This responsibility is stimulated through the exchanges we have built up during this study and is made concrete by taking into consideration the representative opinions of the students.

8. CONCLUSION

The study attempted to raise interest in taking into account the representations of students in university training, their perceptions of training methods, their support needs and their adaptation constraints. It also aimed to collect descriptive but also prospective data and pedagogical decisions.

In order to achieve this intention, we requested exploratory factor analysis to delimit the factors underlying a set of variables which we found to be broader.

In fact, it was on the basis of the responses to the questionnaire by a sample of 147 participants that the factorial analysis summarised 10 factors explaining 74.38% of the total variance in the data relating to the skills required during training. These factors are formulated and generated in terms of fields of action that will serve as reference and framing points in decisions to readjust a global competencies base.

The result is an understanding of the basis for optimising the fields and time volumes devoted to the targeted support systems. By focusing on the acquisitions and initial preludes available to students. Deficiencies in certain fields of training will undoubtedly increase if the necessary adjustments are not made. Through these

results, the students also expressed a real need to act with systems centred on the "person" for a better progressive transformation.

These representations, identified and grouped together through factor analysis, would be a preliminary way for us to gain a good understanding of the social context in which the training interventions will take place. It should also be added that a multitude of contents are given during each module, each student feeds his or her representations of the training by making a subjective selection of usefulness and relevance. This is what our study revealed through the disparities in responses, which are sometimes very difficult to group into a single trend.

Finally, the implementation of real accompaniment devices requires systematic foreshadowing actions based on a knowledge base of the target students. The diversification and exploration of these analysis tools will give more rationality to decisions in this direction. Deciding on the pedagogical choices of a course therefore requires scientific manoeuvres both upstream and downstream. This is what we have also tried to highlight in this study and it will undoubtedly guide our future trials in this fast-moving field.

REFERENCES

- [1]. Adinda. D & Pascal Marquet. P, (2017) " Les stratégies d'accompagnement vers l'autonomie : le cas d'une formation hybride de réorientation des néo-bacheliers à l'université ", Revue internationale de pédagogie de l'enseignement supérieur ; DOI : <https://doi.org/10.4000/ripes.123>
- [2]. Akoul. M & Lotfi. S & Radid. M (2019). Trial of modeling of accompanying postures in the training environment : Spatio-temporal analysis. Revue Scientifique Internationale de l'Education et de la Formation Vol. 4, N° 1, ISSN : 2550-5246 - July 2019 p 125.
- [3]. Berthiaume, D. & Justeau, S. (2015). Using mentoring to develop teaching expertise, In Berthiaume, D., Rege-Colet, N. (Eds). La pédagogie de l'enseignement supérieur : repères théoriques et applications pratiques. Bern. Peter Lang, 169-183
- [4]. Blanchard.P & Patou.C, (2003) " Les usages de l'analyse factorielle dans les revues de sciences sociales ", in : Blanchard Philippe, Ribemont Thomas (dir.), Méthodes et outils des sciences sociales. Innovation et renouvellement, L'Harmattan, collection Cahiers Politiques, Paris, 2003, pp. 85-110.
- [5]. Boshuizen, P. A., Bromme, R. & Gruber, H. (Ed.) (2004). Professional Learning : Gaps and Transitions on the Way from Novice to Expert. Dordrecht : Kluwer Academic Publishers.
- [6]. Brault-Labbé, A., Deaudelin, C., Lacourse, F., Maubant, P. Lépine, M., Boulé, C., Auclair-Tourigny, M., Morin, A., Savaria, M. & Laroche-Provencher, J. (2013). Étude de la réalité professionnelle des enseignants du primaire et impact perçu sur la persévérance et la réussite des élèves : perspectives comparées d'enseignants novices, en mi carrière et seniors. Research report. Concerted Action Program. Fonds de recherche société et culture (FRQSC).
- [7]. Clutterbuck.D (2014) the complete handbook of coaching ; second edition : Cox. E ; Bachkinova. T ; Clutterbuck.D. SAGE edition .London.
- [8]. Faurie.I & Almudever, Brigitte. Hajjar, Violette. (2004) Les usages d'internet des étudiants : facteurs affectant l'intensité, l'orientation et la signification des pratiques. Educational and professional orientation.
- [9]. Flament. C, (2009). Structure and dynamics of social representations. In D. Jodelet, Les représentations sociales, Collection Sociologie d'aujourd'hui, PUF, pp. 224-239.
- [10]. Hannoun, H. (1972). The non-directive attitude of Carl Rogers. Paris : Les éditions ESF. Cited by Adinda and Marquet, (2017) in "Les stratégies d'accompagnement vers l'autonomie" ; Revue internationale de pédagogie de l'enseignement supérieur ; DOI : <https://doi.org/10.4000/ripes.123>
- [11]. Holec, H. (1979). Autonomy and foreign language learning. Strasbourg : Council of Europe. Cited by Adinda and Marquet, (2017) in "Les stratégies d'accompagnement vers l'autonomie" ; Revue internationale de pédagogie de l'enseignement supérieur ;DOI : <https://doi.org/10.4000/ripes.123>
- [12]. Jodelet.D, (2009). Les représentations sociales, Collection Sociologie d'aujourd'hui, PUF 2 Le Petit Larousse 2011.
- [13]. Legrand. L. Meirieu. P (1988). Learning, yes, but how ? In : Revue française de pédagogie, volume 83, 1988. pp. 112-114 ;
- [14]. Leroux, M. (2011). Mémoire sur la professionnalisation de l'enseignement au Québec. Montreal, Canada : Association québécoise des enseignantes et des enseignants du primaire (AQEP).
- [15]. Lopes, A. & Pereira, F. (2012). Everyday Life and Everyday Learning : The Ways in Which Pre-service Teacher Education Curriculum Can Encourage Personal Dimensions of Teacher Identity. European Journal of Teacher Education, (35) ,17-38.
- [16]. Michaut Christophe (2003). L'efficacité des dispositifs d'aide aux étudiants dans les universités. In : Recherche & Formation, N°43, 2003. Entrance to university. Le Tutorat méthodologique. pp. 101-113 ; doi : <https://doi.org/10.3406/refor.2003.1852>
- [17]. Montgomery C. (2007). Reflective discourse of strong and weak teaching trainees. Nouveaux cahiers de la recherche en éducation, 10(2), 89-110.
- [18]. Peraya. D, Charlier. B, Descheryver. N. (2014). Une première approche de l'hybridation. Education et Formation, 2014, no. e-301, p. 15-34.
- [19]. Roussel-Gillet, I. & Poppel (D), S. (2010). Chapter 18. Accompanying a student with professional partners. In : Benoît Rauce éd. accompanying students : Which roles for the teacher ? Which devices ? What implementations ? (pp. 471-501). Louvain-la-Neuve, Belgium : De Boeck Supérieur. <https://doi.org/10.3917/dbu.rauce.2010.01.0471>
- [20]. Ruel.F, Désautels.J, Laroche.M, (1997). Enseigner et apprendre les sciences : représentations sociales des futurs enseignants et enseignantes Didaskalia - n° 10 - 1997 - pages 51 to 73
- [21]. Salazar Noguera, J. & McCluskey, K. (2017). A case study of early career secondary teachers' perceptions of their preparedness for teaching : lessons from Australia and Spain. Teacher Development, 21(1), 101-117.
- [22]. Stenberg, K. (2011). Working with Identities - Promoting Student Teachers' Professional Development. Helsinki : University of Helsinki, Faculty of Behavioural Sciences.