

COMPETENCY-BASED APPROACH IN HIGHER EDUCATION

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Abstract- The purpose of this article is to assess the effects of teaching methodologies in the context of higher education, particularly the competency-based approach (CBA), on the development of key skills. To this end, a survey was conducted with 104 students from different fields in Higher Normal Schools (HNS) and Higher School of Education and Training (HSET). The SPSS framework (Statistical Package for the Social Sciences) was the main tool used to analyse data. The results show that students have significantly developed various key skills, including creativity, teamwork, cooperation, communication, and problem-solving, as a consequence of using CBA. Moreover, the correlation between the 4Cs skills (creativity, collaboration, communication, critical thinking) of the HNS and HSET shows that the relationship between them is weak, meaning they are only loosely connected, except for a slight correlation between collaboration and communication, where it is observed that students with a better level of communication are more collaborative. The results of the comparison of these skills show that they do not follow the normal distribution. In conclusion, this article sheds light on the positive effects of CBA methods on the developing transversal skills among higher education students. This highlights the importance of promoting CBA in higher education programs to ensure better alignment between the skills acquired and the workplace needs.

Keywords: Teaching Methodologies, Competence-Based Approach, Higher Education, Key Skills, 4Cs.

1. INTRODUCTION

The knowledge that students get during their time in college is not just about the skills and knowledge they have learnt; it also helps them in a variety of difficult and varied professional situations after graduate. There are many demands from various social spheres for this education to meet these needs as efficiently as possible. In the workplace, we observe increasing pressure from professional guidelines and authorized institutions that seek to oversee and manage university curricula and teaching techniques methods often at the expense of development competencies and skills. A competency-based approach that emphasizes work-related learning and

so-called transversal abilities (also known as soft skills), like communication, teamwork, creativity or critical thinking, is becoming increasingly popular in professional domains [1-2].

These shifts are closely related to major changes that have reshaped many areas of life in recent decades, especially the labor market and higher education, which is a crucial component of social progress. In this context, higher education institutions must quickly modify their approaches to remain relevant and improve students' abilities, particularly their non-technical skills.

The proactive involvement of future businesses in training programs, particularly through the planning and facilitation of authentic internships, would significantly enhance students' preparedness for the workforce. Additionally, prioritizing problem-solving in educational curricula would be highly beneficial [3]. Traditional problem-solving techniques are increasingly insufficient in the face of rising demands for efficiency and innovation, driven by fierce competition, globalization, budgetary constraints, and especially for academic institutions, the decline in public funding for research [4]. To meet these demands, it is essential to supplement traditional learning, which includes early education, classroom knowledge, and individual work, with new competencies.

These include teamwork, multitasking, communication, initiative, lifelong learning, and adaptability, skills that have become vital for success in today's rapidly evolving professional environment. This shift in the workplace has influenced how organizations manage human resources, placing greater emphasis on both skills and knowledge. These developments are helping to bridge the gap between the modern labor market's evolving demands and the traditional skills taught in higher education [5]. It is widely acknowledged that higher education, particularly vocational and technical education, plays a vital role in national development strategies. It not only imparts foundational scientific knowledge but also fosters the acquisition of practical, job-relevant skills. In response to societal demands, education systems are evolving and modernizing, aiming to produce competent professionals with distinctive abilities [6], capable of approaching tasks creatively and making innovative decisions [7].

To meet the expectations of today’s digitally-driven labor market, skills training must undergo significant transformations [8]. Approaches such as field trips, professional immersion, and CBA help bridge the gap between academic and professional realms. Among these, CBA is particularly effective. It structures academic content and delivery around competencies that students can actively apply and manage, rather than relying on traditional content-based instruction. CBA allows students to leverage their experience, knowledge, and skills to complete courses, earn qualifications, and achieve their educational objectives [9]. Competence is often defined as a reflexive process involving the mobilization of structured internal resources and accessible external resources. This process entails selecting and combining resources in ways that are adapted to various contexts. Furthermore, CBA focuses on designing curricula not around subject content, but around the development of clearly defined learning outcomes and expected competencies [10]. Unlike traditional teaching, which centers on passive knowledge acquisition and emphasizes academic theory, CBA promotes a more exploratory, active, and student-centered approach. This shift has enabled universities to engage more effectively with their social and economic environments, aligning education with real-world demands.

Particularly in higher education, the CBA is a teaching strategy that prioritizes the development of specific skills over the mere accumulation of theoretical knowledge. It emphasizes the importance of equipping students with the essential abilities required to succeed in their future careers. Accordingly, CBA is considered one of the pedagogical approaches that place the student at the center of the learning process [11]. This approach was first developed in English-speaking countries in the 1970s and has gradually been adopted by other education systems, notably in Europe and French-speaking Africa. For example, CBA was introduced in Morocco in 2000 as part of the National Education and Training Charter (NETC), aiming to bridge the gap between what educational institutions offer and what civil society demands.

Moreover, Lever 4, Recommendation 3 of the Higher Council for Education, Training, and Scientific Research's (HCETSR) Report 5/2019 on strategic perspectives for higher education reform highlights that technical competencies alone are insufficient for professional integration and for driving national development. As a result, it is essential to also foster non-technical, or "soft skills", such as emotional intelligence, personal development, and language proficiency, as well as transversal competencies. The rapid and widespread implementation of the CBA has, however, revealed deep-rooted and long-standing challenges within educational systems, especially in higher education and vocational schools. Many educators and institutions struggle to develop and support the acquisition of the knowledge, skills, and attitudes required to recognize, formalize, communicate, transmit, document, evaluate, validate, and adapt these essential competencies. While the primary objectives of CBA is to produce graduates who are

equipped to meet the demands of an ever-changing world, the reality is that, despite reforms and initiatives, students still face significant personal and professional challenges. These are especially evident in a labor market that increasingly demands a broader and more diverse set of skills. These required skills align with the key competencies of the 21st century [12-13], which include creativity [14], collaboration, oral and written communication, multitasking, adaptability to change, leadership and entrepreneurship, information access and analytical thinking [15], imagination, curiosity, and critical thinking [16-17]. While some frameworks for 21st-century competencies focus on technological proficiency, others highlight values and attitudes [18]. Most, however, converge on critical thinking, learning, and communication skills, areas that are significantly more difficult to teach and master than simple memorization or repetitive tasks. Moreover, because these skills extend beyond factual knowledge, they also present greater challenges in terms of assessment [3]. This context gives rise to the central questions guiding our research:

- 1- Is there a relationship between the choice of academic major and the student's project?
- 2- What competencies are developed in higher education?
- 3- What is the difference between the skills developed by HSET and HNS students?

2. METHODOLOGY

2.1. Research Design

This study is quantitative in nature, using a questionnaire created with Google Forms and distributed via social media (Facebook, WhatsApp) and email over two months. It aims to analyze, compare, and examine the impact of CBA on the development of essential skills in higher education, specifically within the two schools, HSET and HNS. The research is purely quantitative for several reasons: the aim of generalizing results, the need for measurable data, the reluctance of students to answer open-ended questions or participate in interviews, and the challenges involved in assessing skill development. This study also followed the methodology shown in the diagram (Figure 1).

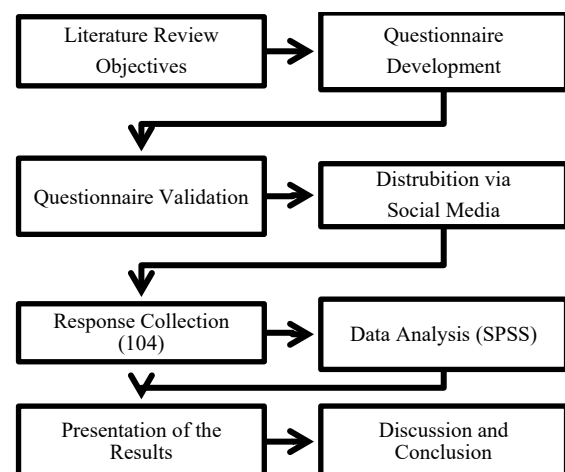


Figure 1. Diagram illustrating the methodology followed

2.2. Population

The target population for this questionnaire consisted of students from Moroccan higher schools of education and training, as well as higher normal schools, with 104 participants. Details about these respondents are presented in Figure 2.

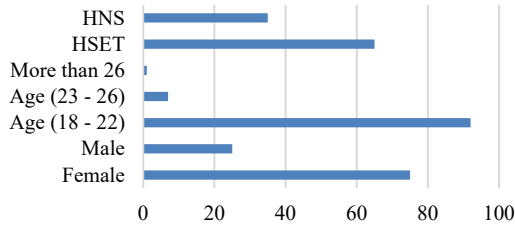


Figure 2. Demographic information of the population

Among the 104 participants, 78 were female students, accounting for 75% of the sample, while 6 were male students, representing 25%. This gender distribution suggests that the study may have generated greater interest among women. The vast majority of participants (92.3%) were between 18 and 22 years old, primarily corresponding to undergraduate students. Additionally, 91.3% of respondents were enrolled in a Bachelor of Education program, indicating a strong inclination toward teaching careers. In terms of institutional affiliation, more than half of the students (54.8%) were enrolled at HSET, while remaining participants were distributed across HNS.

2.3. Instrument

The questionnaire was developed and validated by two higher education professors and demonstrated acceptable reliability, with a Cronbach's alpha of 0.77. It comprises five sections. The first section collects demographic information from respondents, including age, gender, academic stream, and degree type. The second section explores the factors influencing the choice of academic stream, such as the primary motivations, the selection process, and the level of satisfaction with the decision. The third section includes a range of items addressing topics such as class size, the perceived value of higher education, and teaching methods. Responses in this section are rated on a scale of 1=often, 2=never, and 3=always. The fourth section focuses on the competencies developed during the program. Finally, the fifth section examines correlations and comparisons between selected competencies of students from HNS and HSET.

2.4. Procedure and Data Collection

Following the design and validation of the questionnaire, Cronbach's alpha value of 0.77 was obtained, indicating satisfactory reliability. The questionnaire was then distributed over a period of two months using Google Forms. It was shared randomly with students from Moroccan universities through online platforms such as Facebook and WhatsApp, resulting in 104 responses. The collected data were subsequently analyzed using descriptive statistical methods, including percentages and frequencies, employing both SPSS and Excel software.

3. RESULT

The primary findings of this study include students' decisions to pursue specific fields in higher education, as presented in Table 1. Secondly, the perceived usefulness of higher education is illustrated in Figure 3, followed by the instructional methods used in their courses, shown in Figure 4. Table 2 presents the competencies acquired by students during their university education. Finally, Tables 3 through 7 display the correlation and comparison of 21st-century skill scores between students from the HSET and HNS, as well as the correlations between specific skills among students from both institutions.

3.1. The Main Reasons that Led Students to Choose their Fields of Higher Education

Students' professional ambitions appear to be the primary factor influencing their choice of academic field, cited by 93% of respondents. This is followed by personal interest in the subject (71%). Other factors, such as parental support (34%) and a desire to learn new things (31%), also play a role. However, a smaller percentage of students reported enrolling without a clear career goal (21%) or by default (23%) (Table 1).

Table 1. The main reasons why students choose this field of study

	Percentage
Family encouragement	34%
Learn new things	31%
By default	23%
Students' career plans	93%
Interest in the field	71%
Job	21%

3.2. The Usefulness of Higher Education

The findings reveal diverse perspectives on the value of higher education, which can be grouped into categories reflecting both individual and practical objectives. Students place a high value on the professional aspects of higher education: 59% view it as a pathway to obtaining a degree and securing a career, while 54% aim to specialize in a specific field in order to pursue a profession. Additionally, 40% see higher education as an opportunity to develop their social skills, and 53% consider it a means of enhancing their intellectual capabilities. Notably, 24% of students report that fulfilling their parents' expectations is a significant factor in their decision to pursue higher education (Figure 3).

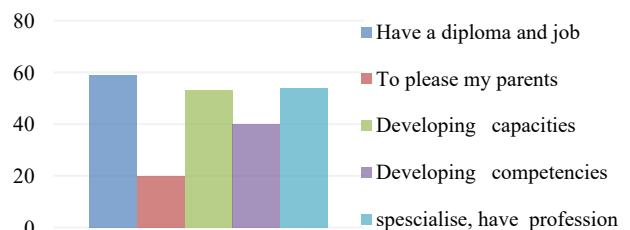


Figure 3. The percentage of usefulness of higher education

3.3. Teachers' Classroom Practices

By analyzing the frequency of specific instructional practices, these findings shed light on the teaching methods employed in the classroom. According to respondents, 46% of teachers frequently use real situation as examples to explain concepts, indicating an effort to connect course material to familiar contexts and facilitate comprehension. A substantial majority (65% always, 33% frequently) report that their teachers consistently link new information to prior knowledge, a strategy that promotes deeper learning. Additionally, group projects, which encourage collaboration and the development of social skills, are supported by most educators, with 51% doing so frequently and 34% always.

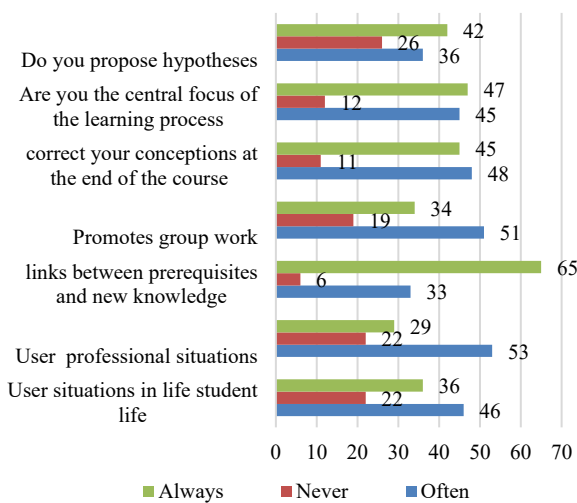


Figure 4. Level of satisfaction with teachers' classroom practices

To foster critical thinking, many teachers regularly (36%) or consistently (42%) encourage students to formulate hypotheses, although 26% of students report never engaging in this activity. Most students perceive themselves as being at the center of the learning process, with 45% stating this occurs regularly and 47% consistently. Finally, following instructions, 43% of students report always correcting their misconceptions, while 46% do so frequently (Figure 4).

3.4. Competencies Developed During University Studies

The majority of the competencies acquired by the survey respondents are professional in nature, including communication, teamwork, time management, and a sense of responsibility. The results indicate substantial development in team spirit (70%) and a strong sense of accountability (66%), along with effective time management (59%). Problem-solving skills (57%) and communication abilities (54%) are also reported to be well developed. However, notable gaps remain in areas such as collaboration (33%), innovation (36%), entrepreneurship (16%), and anticipation (13%). As indicate in Table 2, these findings highlight the need to strengthen instructional approaches that foster autonomy, creativity, and innovation, while also placing greater emphasis on teamwork.

Table 2. Percentage of competency development

Competence	Percentage
Group spirit	70 (%)
Autonomy	38 (%)
Anticipation	13 (%)
Critical thinking	39 (%)
Time management	59 (%)
Sense of responsibility	66 (%)
Entrepreneurship	16 (%)
Creativity	36 (%)
Problem-solving	57 (%)
Communication	54 (%)
Collaboration	33 (%)

3.5. Comparison of Students' 21st-Century Skills Scores between two Schools, HSET and HNS

A normality test was performed (Table 3) to determine whether the data were normally distributed, enabling a comparison of student scores from two schools across the four essential learning competencies known as the 4Cs.

Table 3. Kolmogorov-Smirnov normality test of the 4Cs competencies

	School	Kolmogorov-Smirnov ^a		
		Statistic	df	Sig.
Critical thinking	HSET	0.433	69	0.000
	HNS	0.360	35	0.000
Creativity	HSET	0.425	69	0.000
	HNS	0.390	35	0.000
Collaboration	HSET	0.440	69	0.000
	HNS	0.404	35	0.000
Communication	HSET	0.373	69	0.000
	HNS	0.345	35	0.000

The significance values of 0.000, lower than the 0.05 threshold for all competencies (4Cs), indicate that the data do not follow a normal distribution in either HSET or HNS. Therefore, it is necessary to use non-parametric statistical tests, such as the Mann-Whitney U test, to compare the two groups (Table 4).

Table 4. Mann-Whitney test of 4Cs competencies between two schools

	Critique thinking	Creativity	Collaboration	Communication
Mann-Whitney U	937.000	1127.000	1126.500	1111.500
Wilcoxon W	1567.000	1757.000	1756.500	3526.500
Z	-2.198	-0.668	-0.686	-0.765
Asymp. Sig. (2-tailed)	0.028	0.504	0.493	0.444

Table 4 shows that the p-value for the critical thinking competency is $p = 0.028 < 0.05$, indicating a significant difference between students from the two schools regarding of this competence. This means that students from the two institutions do not have the same level of critical thinking. Table 5 shows that HSET students (*Mean Rank* = 56.42) have a higher level than HNS students (*Mean Rank* = 44.77). However, the p-values for the other competencies are above the significance threshold (0.05), indicating no significant difference between students from the two schools. This suggests that the levels of these competencies are similar across both schools.

Table 5. Ranks of critical thinking in two schools

		N	Mean Rank	Sum of Ranks
Critical Thinking	HSET	69	56.42	3893.00
	HNS	35	44.77	1567.00
	Total	104		

3.6. Correlation between the Skills of Students from Two Schools

This section analyses the correlation (*r*) between the four learning skills (the 4Cs) of the 21st century. Since the data do not follow a normal distribution, the non-parametric Spearman's rho correlation test was employed.

The Spearman's rank correlation coefficient (*rho*) was used to evaluate the strength of the relationship between the 4Cs across the two schools. Spearman's rho (*r*) ranges from -1 to 1, where a positive value signifies a positive correlation between variables, and a negative value indicates an inverse relationship. A value of *r* = 0 implies no correlation between the independent and dependent variables. The magnitude of the correlation was interpreted based on the scale established by Wuensch and Evans (1996) [19]. Table 7 shows the interpretation of Spearman's rho (*r*) correlation, and Table 6 presents the results of this analysis.

Table 6. Correlation between the 4Cs of the 21st century skills

			Critical Thinking	Creativity	Collaboration	Communication
Spearman's rho	Critical thinking	Correlation Coefficient	1.000	0.222*	0.235*	-0.003
		Sig. (2-tailed)	.	0.023	0.016	0.976
		N	104	104	104	104
	Creativity	Correlation Coefficient		1.000	0.296**	-0.037
		Sig. (2-tailed)		.	0.002	0.708
		N		104	104	104
	Collaboration	Correlation Coefficient			1.000	0.193*
		Sig. (2-tailed)			.	0.050
		N			104	104
	Communication	Correlation Coefficient				1.000
		Sig. (2-tailed)				.
		N				104

Table 7. Interpretation of the Spearman correlation *r*

Value of <i>r</i>	Interpretation
± 0.80 to ± 1.00	Very strong relationship
± 0.60 to ± 0.79	Strong relationship
± 0.40 to ± 0.59	Medium relationship
± 0.20 to ± 0.39	Weak relationship

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

The results of Table 6 show:

- That there is a weakly positive and significant correlation at the 5% threshold between critical thinking and creativity ($r = 0.222, p = 0.023$) and also with cooperation ($r = 0.235, p = 0.016$). This means that students from two schools with good critical thinking skills can be more creative. However, this relationship remains weak. Moreover, creativity was weakly associated with collaboration.
- The correlation between critical thinking and communication was almost zero ($r = -0.003$) and not significant ($p = 0.976 > 0.05$). In addition, creativity and communication were virtually null ($r = -0.037$) and insignificant ($p = 0.708 > 0.05$). This implies that there is no relationship between critical thinking and communication, and also between creativity and communication.
- A weak ($r = 0.296$) and highly significant ($p = 0.002$) positive correlation at the 1% threshold between creativity and collaboration. This suggests that the more creative students gave less priority to collaboration.
- A weak ($r = 0.193$) and significant ($p = 0.050$) positive correlation at the 5% threshold between collaboration and communication. This indicates that the more cooperative students also had a better level of communication, although this relationship remained weak.

4. DISCUSSION

Students' academic and professional futures are greatly impacted by their choice of study, making it a critical moment in their lives. Although exciting, this process is often complicated and unpredictable. It is essential for them to thoroughly evaluate their academic strengths and career interests. To align their choice with their identity and long-term objectives, introspection is crucial. Furthermore, having access to pertinent and understandable information is essential. Students need to learn about the skills required, the employment opportunities in each sector, and the growth prospects in their area of interest. Labor market surveys, for instance, can be used to determine which occupations are in high demand and how they may evolve, especially in a society where economic and technological change is constant.

According to the study's findings, this choice was influenced by three factors: first, learning new facts about the chosen field of study; second, family support and encouragement; and third, personal interest throughout the study. The main reason remains students' career plans, as evidenced by 96 out of 104 students who admitted that their love for the field inspired them to pursue it. This research is valuable because it sheds light on a factor that is essential to students' intrinsic motivation, perseverance, and academic performance. Being interested in a certain topic and considering it as a means of achieving their own goals, students tend to perform exceptionally well in addition to continuing their education. This natural desire motivates students to participate fully in the educational process, enhances their capacity to assimilate knowledge, and ultimately leads to greater fulfilment in their academic and professional pursuits.

However, the study also emphasizes the important role of the family in this process. Although often considered a minor factor, the impact of the family is substantial. The fact that 35 participants reported receiving family support attests to the positive effects of family capital. This support includes parental involvement, encouragement, and psychological assistance, all of which are essential for students' academic achievement and personal development [20]. By providing students with a sense of security and validation that strengthens their self-confidence, family capital contributes to the development of a supportive learning environment. Additionally, it can influence students' career advancement and orientation choices. Students may benefit from proactive guidance from their family members, helping them overcome obstacles, gain new perspectives, and envision career paths that align with their values and aptitudes.

This support includes not only financial assistance for education, particularly common in middle- and upper-class families, but also psychological and moral support [21]. While specialization in a particular field of study is important, the primary goal of a college education is often seen as earning a degree and securing employment. Intellectual growth is also considered a major objective, although some place less emphasis on it. Interest in meeting parental expectations, which can influence teenagers' academic choices and social skill development, is viewed as a secondary motivator. Additionally, the results indicate that the practical and professional aspects of higher education are prioritized over social or personal goals.

Most students exhibit strong abilities in time management, teamwork, and accountability, along with the development of social and professional competencies [1]. However, since skills are acquired gradually rather than instantly through educational activities, it appears that future-oriented competencies such as critical thinking [22], entrepreneurship, creativity, collaboration [23-24], and anticipation are not being sufficiently developed. This study highlights a form of training that places greater emphasis on specific technical skills, often at the expense of creative abilities and other essential job-related competencies. As the tasks used to assess content knowledge primarily take the form of quizzes or exams, they are generally straightforward to design, evaluate, and adapt. Therefore, it would be wise to incorporate targeted activities or specific modules into university programs to strengthen these competencies, while also adopting assessment methods that actively support their development. Evaluating theoretical knowledge remains a relatively straightforward approach to generating interest in assessing other dimensions of competency [3]. However, self-assessment alone is not sufficient to effectively measure the development of these skills. It is, thus, necessary to use alternative techniques and strategies based on authentic learning situations and assessments that closely reflect real contexts. Student must choose and combine their resources, as well as develop, justify, and evaluate their activities. Exams, whether final or post-module, comprise a variety of assignments such as course

questions and problem-solving activities that constitute a thorough assessment of concepts, knowledge, and their applications [25].

Lastly, some of the primary aspects of their importance and benefits include the application of theoretical knowledge, the development of soft skills, and integration into the professional environment. Internships in higher education are crucial for preparing students for the workforce, as they increase their chances of success in the workplace, enhance their interpersonal skills, facilitate professional integration, and help them build technical and professional competencies.

The correlation between the 4Cs skills is weakly related or non-existent between them, as both schools have the same program and the Ministry of Higher Education wants to merge these two schools (HSET and HNS) in the coming years. The comparison of these competencies reveals that they are independent and develop separately from one another [26]. This highlights the need to mobilize various resources in order to connect them, notably through significant changes in teaching methods and university curricula. It, therefore, becomes essential to teach and assess them in an integrated manner.

5. CONCLUSION

The findings of this study indicate positive developments in the education sector, particularly in higher education, due to the adoption of teaching practices such as CBA, which fosters the development of practical, theoretical, emotional, and professional competencies. This approach aim to prepare more autonomous and versatile students who can meet the needs of the professional world. However, it remains essential to establish a more harmonious balance between theoretical, practical, and creative skills and the demands of the labor market, to prepare graduates capable of adapting to an ever-changing professional environment. Furthermore, integrating teaching methods that promote innovation and critical thinking is crucial to fostering student autonomy and versatility, traits increasingly required by today's workforce. In conclusion, this article demonstrates that competency-based learning approaches help college students develop essential skills such as teamwork, accountability, communication, task organization, and problem-solving, all of which are highly valued in the job market.

These findings underline the importance of further promoting CBA in higher education curricula to ensure a better alignment between the skills acquired and the needs of the professional world. It also allows for effective theoretical, technical, and professional skills, and assessment methods to ensure the development of these skills during students' training based on CBA.

To meet the increasing demands of the professional world and the intricate dynamics of learning processes, this research proposes a revision of teaching methods by emphasizing the acquisition of vital skills for both teachers and students. Beyond technical proficiency, the skills being addressed include critical abilities like problem-solving, collaboration, communication, and flexibility.

This research encourages teaching that is more in line with contemporary realities and expectations by emphasizing a clear connection between educational approaches and the demands of the professional world. What sets this research distinctive is its capacity to rethink competency-based teaching, based on factual knowledge and strong approaches. Prior studies have mostly employed qualitative or descriptive methods, but this study uses a quantitative approach that allows for an accurate evaluation of how instructional strategies affect students' skills.

HCETSR

The results obtained can be used to inform university program planning by integrating interdisciplinary modules that enhance communication, project-based work that promotes collaboration, and practical exercises that stimulate critical thinking. Innovation spaces, such as creative workshops, can further encourage student creativity. These competencies should also be assessed as complementary to theoretical knowledge. Ultimately, the use of collaborative digital tools would support the development of these skills in blended learning environments. It is essential that the Moroccan Ministry of Education organize continuous professional development programs for higher education instructors, focusing on learning sequences that promote the CBA. It is also important to strengthen the links between universities and the professional world by establishing practical internships. These internships will enable students to become familiar with the job market and develop the skills required for success in their professional careers.

6. RECOMMANDATION AND LIMITATION

In the context of this research, it is essential to recognize certain limitations that will need to be considered in future studies to improve the generalizability and reliability of the results:

- It would be interesting to conduct similar studies with a larger number of students from various streams and universities.
- The research used the quantitative method to collect data. However, it would be interesting to incorporate other methods, such as interviews and observations, although these may introduce a degree of subjectivity into the results.

This research recommends that researchers conduct further research and studies on the implementation of the competency-based approach at different educational stages, as well as on other subjects and in other universities in Morocco.

This study recommends that the relevant authorities at the Ministry of Higher Education, Scientific Research and Innovation:

- Align curricula and teaching activities with competencies
- Train teachers in the skills-based approach.
- Have the tools needed to teach and assess students' skills effectively.

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NOMENCLATURES

CBA	Competence-based Approach
HNS	Higher Normal school
HSET	Higher School of Education and Training
SPSS	Statistical Package for the Social Sciences
	Higher Council for Education, Training, and Scientific Research's

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