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DIGITAL MARKETING SKILLS AND GRADUATE EMPLOYABILITY: HOW WELL DO UNIVERSITY COURSES ALIGN WITH THE LABOUR MARKET IN ALGERIA?

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Abstract. *Digital transformation is reshaping the skills required in marketing roles, heightening the risk of a mismatch between the skills developed through university education and those sought by the labour market. This study analyses the alignment between university-level marketing education and the requirements of digital marketing in the Algerian context, whilst also examining the role of institutional support in reducing the digital marketing skills gap. A sequential exploratory mixed-methods approach was adopted. The quantitative phase is based on a survey of 200 marketing students, supplemented by a qualitative analysis of the perceptions of lecturers and programme directors. The data were analysed using descriptive statistics, reliability tests, exploratory factor analysis, correlations and multiple regression. The results reveal a significant gap between the skills perceived to be taught and those considered to be required by the labour market. They also show that institutional support and teaching quality contribute significantly to reducing this gap. The convergence of students' and lecturers' views highlights the need for regular updates to the curriculum, the strengthening of lecturers' digital skills, and closer collaboration between universities and businesses. The study thus contributes to the debate on adapting Algerian higher education to the changes in the digital labour market.*

Keywords: *digital marketing; digital skills; university education; labour market*.

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Introduction

The digital transformation is profoundly reshaping marketing roles and, consequently, the skills expected of graduates. The rise of artificial intelligence, data analytics, social media and automation tools now requires a combination of fundamental marketing, technological, analytical and strategic skills. Grewal et al. (2025) thus emphasise the need to rethink course content and teaching approaches in order to prepare students for an increasingly digital and data-driven professional environment. This development is a continuation of a long-standing issue: the mismatch between the skills developed through university education and those sought by employers (Schlee & Harich, 2010; Royle & Laing, 2014).

However, the rapid pace of technological change is making this gap more complex. Artificial intelligence is not only transforming the tools used by professionals; it is also changing the nature of the skills required. Hadouga (2023) shows that the application of artificial intelligence

is positively associated with improvements in organisational performance and services, thereby illustrating the growing importance of mastering these technologies in professional environments. Consequently, the challenge for universities is no longer merely to impart technical knowledge, but to develop skills that enable future graduates to adapt to, analyse and make effective use of emerging technologies.

This issue is of particular importance in emerging economies. In Algeria, the growth of e-commerce, social media and digital acquisition strategies is gradually increasing the demand for digital marketing skills. Akhenak et al. (2025) highlight, in particular, the growing importance of content marketing, social media and search engine optimisation in the customer acquisition and retention strategies of Algerian service companies. At the same time, higher education is undergoing a digital transformation that continues to face institutional and pedagogical constraints. Bouriche et al. (2025) demonstrate, in the Algerian context, that institutional support is a key determinant of the perceived quality of distance learning, emphasising that digital transformation in higher education depends as much on organisational conditions as on the technologies themselves.

Despite these developments, research specifically addressing the alignment between the digital marketing skills taught at Algerian universities and those required by the labour market remains limited. This gap justifies the present study, which seeks to answer the following question: to what extent does Algerian university education in marketing prepare students for the digital skills currently required by the labour market?

The study has three objectives: (1) to identify the key digital marketing skills actually developed in university courses; (2) to measure the perceived gap between these skills and professional requirements; and (3) to examine the role of institutional support, as well as differences in perception between students and lecturers. By addressing these objectives, this research aims to contribute to the debate on adapting university curricula to changes in the labour market and to propose avenues for improvement tailored to the Algerian context.

Literature Review

The mismatch between academic skills and market requirements

Digital transformation has profoundly altered the skills expected in marketing roles. The growth of e-commerce, social media, data analytics, CRM and, more recently, artificial intelligence requires graduates to possess a combination of technical, analytical and behavioural skills (Royle & Laing, 2014; Wymbs, 2011). In this context, the "skills gap" refers to the discrepancy between the skills developed through education and training systems and those actually sought by employers (Jackson, 2010; Andrews & Higson, 2008).

Research into digital marketing shows that companies are placing increasing importance on skills in data analysis, digital technologies, social media and digital strategy (Schlee & Harich, 2010; Schlee & Harich, 2013; Wedel & Kannan, 2016). Royle and Laing (2014) distinguish, in particular, between technical skills − SEO, SEM, social media, content marketing, web analytics and CRM − and cross-functional skills such as creativity, agility and strategic thinking. Langan et al. (2019) also highlight the value of experiential learning approaches in bridging the gap between university education and professional realities.

This trend is now being reinforced by artificial intelligence. The automation of certain tasks does not necessarily diminish the importance of human skills; on the contrary, it enhances the value of creativity, critical judgement, adaptability and ethics (Huang & Rust, 2021). An academic study also confirms that the application of artificial intelligence can contribute positively to the development of organisational performance and services (Hadouga, 2023). Thus, the challenge is no longer simply to master digital tools, but to develop the ability to utilise them in an analytical, strategic and responsible manner.

Digital marketing and the Algerian context

In Algeria, the gradual digitalisation of businesses, the growing use of social media and the development of e-commerce are driving up demand for digital skills. Digital marketing is now a key driver of visibility, customer acquisition and customer relations (Kannan & Li, 2017; Chaffey &

Ellis-Chadwick, 2022). This trend is consistent with various published studies on marketing in the digital age, which show that social media, digital technologies and changing consumer behaviour are transforming marketing practices (Prdic & Kostic, 2023).

With this in mind, companies are increasingly seeking candidates who can combine proficiency in digital tools, data analysis and strategic skills. However, Algerian academic literature remains primarily focused on the effects of digital marketing on businesses and consumers, whilst the alignment between the skills taught by universities and those demanded by the labour market remains understudied. This gap is particularly significant in a context where technological transformations are accelerating the obsolescence of skills (Dahl et al., 2018).

Digital transformation of higher education and the role of institutional support

The digital transformation of higher education is not limited to the introduction of new technologies. It also involves adapting teaching practices, training lecturers, updating curricula and establishing a supportive institutional environment (Bond et al., 2018; Henderson et al., 2017; Selwyn, 2016). In particular, the Technology Acceptance Model − TAM (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology − UTAUT (Venkatesh et al., 2003) models show that the adoption of technologies depends on their perceived usefulness, facilitating conditions and the institutional environment.

This aspect is particularly important for digital marketing courses, where tools and practices are evolving rapidly. A relevant university course therefore requires regular updates to the curriculum, appropriate digital infrastructure and ongoing professional development for teaching staff. In the Algerian context, Bouriche et al. (2025) show that administrative and institutional support has a positive influence on the perceived quality of distance learning, thereby highlighting the importance of organisational conditions for the success of digital transformation.

Summary and positioning of the research

The literature thus allows us to identify three key findings. Firstly, marketing professions are undergoing rapid change, which is increasing the demand for digital, analytical and cross-disciplinary skills (Royle & Laing, 2014; Wedel & Kannan, 2016). Secondly, artificial intelligence and new technologies are accelerating this change and making it necessary to continuously update skills (Huang & Rust, 2021; Hadouga, 2023). Thirdly, universities' ability to meet these requirements depends not only on the content of their teaching programmes, but also on institutional support, infrastructure and staff training (Bond et al., 2018; Bouriche et al., 2025).

Despite these advances, research specifically focusing on the alignment between the digital marketing skills taught at Algerian universities and the requirements of the labour market remains limited. This study therefore addresses this gap by simultaneously analysing the level of skills alignment, the role of institutional support, and differences in perception between students and lecturers.

On this basis, the following hypotheses are formulated:

H1: The digital marketing skills taught on marketing/management degree programmes at Algerian universities are perceived as being insufficiently aligned with the requirements of the labour market.

H2: Institutional support − notably continuing professional development for lecturers, digital infrastructure and curriculum updates − contributes significantly to reducing the gap between the skills taught and those demanded by the labour market.

H3: Students and lecturers hold significantly different perceptions regarding the nature and extent of the digital marketing skills gap.

Methods

Design and sample

This research adopts an exploratory sequential mixed-methods approach (qualitative → quantitative), enabling the relevant dimensions of the digital marketing skills gap to be identified first, and then examined quantitatively. The qualitative component is based on semi-structured interviews conducted with ten lecturers and programme directors in marketing and management.

The quantitative component involves 200 third-year undergraduate and Master's students enrolled at several Algerian universities.

The sampling is non-probabilistic and purposeful. The choice of students nearing the end of their degree programmes is justified by their proximity to entering the labour market and their ability to assess the alignment between the education they have received and the demands of the market.

Instrument and variables

The qualitative interviews focused on four dimensions: the skills currently taught, changes to the curriculum, institutional constraints, and the need to adapt training programmes. The results of this phase helped to shape the structure of the questionnaire.

The quantitative questionnaire comprises four sections: (1) individual and academic characteristics; (2) digital marketing skills perceived to be taught; (3) skills perceived to be required by the market; and (4) institutional support and teaching quality. The items are measured on a five-point Likert scale. The skills gap is calculated based on the difference between the skills required and those perceived to be taught.

Procedure and data analysis

The quantitative data were analysed using Statistical Package for the Social Sciences (SPSS), employing descriptive statistics, Cronbach's alpha, exploratory factor analysis, Pearson's correlations and multiple linear regression. ***H1*** was tested using a t-test for paired samples; ***H2*** using multiple regression; ***H3*** using triangulation of qualitative and quantitative results.

The interviews were subject to thematic coding to identify areas of convergence and divergence between teachers' and students' perceptions. The instruments demonstrated satisfactory to excellent reliability, with alpha coefficients ranging from 0,87 to 0,93.

Results

Sample profile and descriptive statistics

The sample comprises 200 students, of whom 54 per cent are women and 46 per cent are men. Third-year undergraduates account for 39,5 per cent of the sample, compared with 33,5 per cent in the first year of their Master's degree and 27 per cent in the second year of their Master's degree. Furthermore, 60,5 per cent reported having completed a work placement, whilst only 36 per cent had undertaken additional training in digital marketing.

The descriptive results show a marked gap between the skills perceived to have been taught (M = 2,81; SD = 0,61) and those considered to be required by the market (M = 4,29; SD = 0,47). The average gap thus stands at 1,48 points. Institutional support scored an average of 2,97, whilst the quality of teaching scored 3,18.

Table 1. Descriptive statistics and reliability of constructs

Variable	Number of items	Mean	Standard deviation	α
Skills taught	10	2,81	0,61	0,91
Skills required by the labour market	10	4,29	0,47	0,93
Institutional support	10	2,97	0,69	0,89
Quality of teaching content	5	3,18	0,65	0,87
Average skills gap	10	1,48	0,54	0,90

Source: Collected and reorganized by authors

The alpha coefficients, ranging from 0,87 to 0,93, indicate excellent internal consistency of the scales.

Construct validation

Exploratory factor analysis confirms the suitability of the data (Kaiser-Meyer-Olkin index) KMO = 0,901; Bartlett's test: X^2 (435) = 2836,47; $p < 0,001$). Four factors emerge, explaining 73,95% of the total variance: taught skills, required skills, institutional support and teaching quality. The principal factor loading are greater than 0,80, with low cross-saturation, which supports the convergent and discriminant validity of the constructs.

Table 2. KMO index and Bartlett's sphericity test

Statistic	Value
KMO index	0,901
Bartlett's approximate chi-squared	2 836,471
Degrees of freedom	435
Significance (*p*)	< 0,001

Source: Collected and reorganized by authors

Hypothesis testing

H1 – The existence of a digital marketing skills gap.

The paired t-test reveals a highly significant difference between the skills perceived to be taught (M = 2,81) and those required by the market (M = 4,29), t (199) = 31,84, $p < 0{,}001$. The average gap of 1,48 points therefore confirms ***H1***. Students consider that their course does not adequately cover the skills expected in digital marketing.

H2 – Role of institutional support.

The multiple regression explains 51,6% of the variance in the skills gap (R^2 = 0,516; F(2,197) = 107,14; $p < 0{,}001$). Institutional support is the most significant predictor ($\beta = -0{,}551$; $p < 0{,}001$), followed by teaching quality ($\beta = -0{,}276$; $p < 0{,}001$). The Variance Inflation Factor (VIF) values of 1,69 rules out a significant problem of multicollinearity. Thus, a more favourable institutional environment is associated with a smaller perceived skills gap, confirming ***H2***.

H3 – Convergence of perceptions.

Triangulation reveals a strong convergence between teachers and students. Both groups highlight the lack of advanced digital skills, the need to update the curricula, the lack of infrastructure and the need to strengthen partnerships with businesses. Teachers place particular emphasis on the underdevelopment of SEO, marketing analytics, digital advertising and generative AI. This convergence confirms ***H3***.

Table 3. Summary of hypothesis tests

Hypothesis	Analysis	Main result	Decision
H1	**Paired t-test**	Mean taught = 2,81; Mean required = 4,29; t = 31,84; $p <$,001	Confirmed
H2	**Multiple regression**	β support = −0,551; β quality = −0,276; R^2 = 0,516; $p < 0{,}001$	Confirmed
H3	**Triangulation**	A strong convergence between students/teachers	Confirmed

Source: Collected and reorganized by authors

Overall, the results confirm the existence of a significant skills gap in digital marketing and highlight the central role of institutional support in addressing it.

Discussion

The results confirm the three hypotheses and highlight a mismatch between university education and the demands of the digital marketing market in Algeria. The main contribution of the study lies in the simultaneous identification of the skills gap and its institutional determinants.

A persistent digital skills gap

The first finding reveals a significant gap between the skills perceived to be taught and those considered necessary in the job market. This finding echoes the observations of Royle & Laing (2014) and Schlee & Harich (2010), who have already highlighted the difficulty university courses face in keeping pace with the rapid evolution of digital practices.

In the Algerian context, this disconnect seems particularly evident when it comes to the most up-to-date skills, notably marketing analytics, SEO, digital advertising and generative artificial intelligence. The rapid evolution of these technologies creates a time lag between professional innovation and the institutional revision of curricula. The problem therefore stems not only from insufficient content, but also from a structural difficulty in updating training programs quickly.

Institutional support as a determining factor

The second finding represents a significant contribution of the study: institutional support is the main predictor of the reduction in the gap ($\beta = -0{,}551$). Digital infrastructure, continuing

professional development for teachers and the updating of curricula thus appear to be complementary conditions rather than independent factors.

This finding is consistent with that of Bouriche et al. (2025), who highlight the importance of institutional support for the quality of digital teaching in the Algerian university context. It suggests that the modernization of marketing programs cannot be achieved solely by modifying teaching content. It also requires an environment that enables teachers and students to access contemporary tools, resources and professional practices.

This conclusion is particularly relevant in a field where technologies are evolving rapidly. Universities must therefore prioritize an approach of continuous updating rather than occasional revision of the curricula.

Convergence between stakeholders and implications

The strong convergence between teachers' and students' perceptions reinforces the consistency of the findings. Both groups identify the same priorities: updating curricula, improving infrastructure, developing teachers' skills and forging closer links with businesses.

This convergence is in line with the recommendations of Royle & Laing (2014) and Langan et al. (2019), who emphasize the value of training that is more experiential and geared towards directly applicable skills. It also confirms the value of a mixed-methods approach that allows the perspectives of the various stakeholders in education to be compared.

From a theoretical perspective, the study thus helps to shift the analysis of the skills gap from an approach centred exclusively on the student towards a more systemic perspective that takes institutional conditions into account. From a practical perspective, it advocates for the regular updating of curricula, the continuous professional development of teachers and the strengthening of university–business links.

Practical implications

Three priority areas can be identified. Firstly, curricula should incorporate the skills currently in demand to a greater extent: SEO/SEA, analytics, digital advertising, CRM, automation and generative AI. Secondly, lecturers should benefit from continuing professional development and practical workshops to keep their skills up to date. Thirdly, universities should strengthen partnerships with businesses through work placements, real-world projects, case studies and guest lectures by industry professionals.

The aim is therefore not to replace the fundamentals of marketing with digital tools, but to develop a hybrid profile combining marketing knowledge, technological expertise, data analysis, creativity and adaptability.

Limitations and future directions

This research has several limitations. The use of non-probability sampling limits the applicability of the results, whilst the cross-sectional nature of the study does not allow for the observation of changes in the gap over time. The results are also based on self-reported perceptions, which may be influenced by subjective factors.

Future research could make use of larger probabilistic samples, directly incorporate recruiters' perceptions and compare several Maghreb countries (Algeria, Libya, Mauritania, Morocco, and Tunisia). A longitudinal approach would also enable an examination of how the gap evolves under the influence of artificial intelligence and new technologies.

Conclusion

The aim of this study was to analyse the alignment between the digital marketing skills taught at Algerian universities and those required by the job market. The results highlight a significant gap between the skills taught and those required, and show that institutional support is a key factor in bridging this gap. The convergence of students' and lecturers' perceptions reinforces the consistency of these conclusions.

The main implication is that adapting degree programs cannot be limited to simply adding a few digital tools to the curriculum. It requires a continuous process involving the updating of programs, the development of lecturers' skills, the improvement of infrastructure and closer links

with businesses. From this perspective, the digital transformation of Algerian higher education must be viewed as a comprehensive institutional approach aimed at sustainably enhancing graduates' employability.

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