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Market Environment and Strategic Analysis on Forces Driving Education Democratization Through EdTech Platforms

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Abstract. The rise of technology has shifted markets online, prompting industries, including education, to adapt. Specifically, education content has gained traction on social media platforms and educational platforms like Graphy by Unacademy. This paper explores macro and micro-environmental factors driving the democratization of quality education and provides strategies for companies and startups to enhance their market position. Environmental scanning was conducted through a literature review, pseudo-quantitative analysis, including Internal Factor Evaluation and External Factor Evaluation, along with analysis using Porter's Five Forces Model. Strategies were formulated for companies like Graphy by Unacademy through an integrated analysis that included the I-E Matrix, SWOT analysis, Grand Strategy Matrix, and Quantitative Strategy Planning (QSP) Matrix. Environmental scanning and integrated analysis revealed that this industry has a relatively weak competitive situation, but there are ample opportunities to pursue it. The QSP matrix suggests that market positioning and differentiation can be improved by strengthening internal attributes, such as partnerships with higher education institutions and identifying a niche for offering specialized content. As we continue to shift towards an online-driven society, it is imperative to leverage expanding market channels through social media. By harnessing the potential of online educational platforms, we can revolutionize the industry. This not only has the potential to rekindle interest among young people but also to create new opportunities for growth and innovation.

INTRODUCTION

The educational technology industry has undergone profound transformations in recent years, driven by the rapid digitization of various sectors (Komljenovic, 2021). Among these sectors, agriculture stands as a unique and critical domain, where the intersection of traditional practices and cutting-edge technology has the potential to revolutionize global food production. In this dynamic landscape, understanding the intricate web of factors that influence the educational technology industry in agriculture is paramount.

The agricultural educational technology sector operates at the nexus of traditional agricultural practices and modern digital innovations. Davies and Garrett (2018) ranked connectivity, which encompasses information delivery and digital technology platforms, as the first of their 12 innovative technology platforms to advance the Urban Food Ecosystems of the developing world. The agriculture educational technology sector offers a broad spectrum of solutions, ranging from smart farming tools and precision agriculture to digital classrooms and online training programs tailored to agricultural needs. As the industry matures, it is confronted with a multitude of external forces that shape its trajectory. These forces encompass macro-environmental factors, including economic, political, and environmental considerations, as well as micro-environmental factors, such as market dynamics, technological advancements, and competitive pressures.

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Unacademy, headquartered in Bangalore, is an Indian edtech firm. It commenced as a YouTube channel in 2010, founded by Gaurav Munjal, and officially established as a company in 2015. Presently, Unacademy holds the distinction of being India's largest online learning platform. The platform operates on a freemium model, where many courses are available for free, and learners have the option to subscribe to Unacademy Plus to access additional premium content and features. In 2020, Unacademy launched a new team called Graphy. Graphy is a specialized team within Unacademy that focuses on empowering content creators across various domains, not limited to traditional academic subjects. Content creators on Graphy are individuals who possess specific skills, talents, or expertise and want to share their knowledge with others. Graphy provides creators with tools and resources to create interactive content, host live sessions, and offer cohort-based courses to their audience. Their main goal is to bring together the best minds in the world to share knowledge in a simple and easy-to-understand way. In pursuit of continuous expansion, it has also acquired other platforms in the online educational content industry, such as Spayee, Build On Scenes, and AvalonMeta.

Considering these, this research paper aims to shed light on the intricacies of this evolving landscape, with a primary focus on how these macro and micro environmental factors impact businesses and emerging enterprises in the agricultural educational technology sector. By doing so, it seeks to provide valuable insights and strategic recommendations that can empower organizations to enhance their competitive standing in this unique context. In an era where the global agricultural landscape faces increasingly complex challenges, from climate change to sustainable resource management, leveraging educational technology effectively becomes not only a matter of competitiveness but also one of global significance.

This paper investigates the influences of both macro- and micro-environmental factors on the educational technology industry, specialized in agriculture. Additionally, it furnishes strategy recommendations for businesses and emerging enterprises to improve their competitive standing in this context. The findings and recommendations presented herein will serve as a valuable resource for those dedicated to harnessing the full potential of educational technology ultimately contributing to a more sustainable, efficient, and innovative educational systems to achieve the sustainable development goals.

METHODOLOGY

Literature Review

This research study was conducted by means of a comprehensive review of existing literature pertaining to educational technology. The literature review entails conducting targeted keyword searches within leading journal databases, curating a selection of articles from reputable sources including ScienceDirect and Google Scholar, and scrutinizing the titles and abstracts of these articles to identify those of significance in the context of visual and artificial intelligence. Articles meeting the criteria for relevance were retained in the article list, while those deemed irrelevant were excluded from consideration.

Analysis Using Porter's Five Forces Model

The analysis employing Porter's Five Forces Model initiates with an introduction to the framework, providing an overview of its components and significance in strategic analysis. The five forces - Threat of New Entrants, Bargaining Power of Suppliers, Bargaining Power of Buyers, Threat of Substitute Products or Services, and Intensity of Competitive Rivalry - are identified and described in detail. Their application to the organization's specific industry is explained. Data relevant to each force is collected and analyzed to assess their impact and intensity within the industry. The strategic implications of this analysis are discussed, including potential threats and opportunities that arise from each force. Strategies to address or leverage the identified forces are suggested, helping guide the organization's strategic decision-making process.

Strategy Formulation

To conduct the next steps, this analysis used Graphy by Unacademy, which is an edtech firm that commenced as a YouTube channel and officially established as a company. The platform operates on a freemium model, where many

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courses are available for free, and learners have the option to subscribe to premium to access additional premium content and features.

SWOT Analysis. The process commenced with a meticulous examination of both internal and external factors. Internal factors included elements like financial performance, available resources, and organizational capabilities. External factors encompassed market conditions, competitive forces, and regulatory shifts. Following the identification of these factors, they are categorized into strengths, weaknesses, opportunities, and threats.

Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE). The Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) began with data collection. Relevant internal and external data were gathered through the available data online and from reliable resources. Additionally, interviews or surveys with key personnel were conducted to assess internal factors. Once data is compiled, the identification of key factors was undertaken, with weights assigned to these factors based on their relative importance. Subsequently, each identified factor was evaluated on a predefined scale, ranging from 1 to 4, with 4 representing the highest impact. Scores were justified with supporting evidence or rationale. Weighted scores were calculated by multiplying the assigned weight for each factor by its evaluation score, with the sum providing the total IFE and EFE scores.

I-E. Matrix. The results from the IFE and EFE Matrix were plotted on a matrix, which serves as the canvas upon which appropriate strategies are determined. These fall into one of four categories: grow and build, hold and maintain, harvest and divest, or overcome and minimize.

Grand Strategy Matrix. Based on the abovementioned assessments, Graphy by Unacademy was positioned within one of four quadrants on the matrix: conservative, competitive, growth, or diversification. Each quadrant suggests distinct strategic options, such as market penetration, market development, product development, diversification, retrenchment, or stability.

Quantitative Strategy Planning (QSP) Matrix. From the strategies inside the quadrant where the company was positioned at the Grand Strategy Matrix, two strategies were chosen then each alternative undergoes an evaluation, considering its potential impact on critical financial factors such as revenue, profitability, and return on investment. Scores were assigned to each alternative, factoring in projections for sales, costs, and risk. The QSP Matrix calculated a total attractiveness score for each alternative by weighing and summing these individual financial factors. This process ultimately leads to the ranking of alternatives based on their total attractiveness scores.

RESULTS AND DISCUSSION

Macroenvironment Analysis

Politico-Legal Factors

The Edtech industry has generally enjoyed a stable political environment, as governments worldwide recognize the importance of technology in education. This was exemplified during the pandemic as the use of technology in education provided new and innovative forms of support to teachers, students, and the learning process in general. As industry has grown in importance, attention has shifted to the political economy which is behind its success and wide reach. Private companies like Google, Facebook, Pearson, and Microsoft are known investors in the Ed-tech world. Other players funding known ed-tech sites are New Schools Venture Fund 1998 which invests in MathChat, eSpark Learning, LearnZillion, and Newsela. Another is 500 Startups2010 which has invested in over 500 companies with a global network of start-up founders, investors, and mentors. Its notable edtech sites are Remind and Ubooly. Last is LearnCapital 2008 which is focused on funding entrepreneurs who improve the learning experience. It funds companies like Coursera and Edmodo. While it is obvious that these companies are entering market worth billions in sales, their impact on improving education is also notable. For instance, ed-tech addresses emerging trends in the K-12 level such as the focus on STEM education, trend towards technology sophisticated society and the need to prepare future generations to compete in the environment.

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Regan and Khwaja (2019) argued that Ed-tech is the latest iteration of the longtime trend in privatizing and commercializing the important components of K-12 education in the US. Currently, Every Student Succeeds Act in the USA, which generates funds for ed-tech initiatives, follows in the footsteps of the earlier policies such as Charter School Movement in 2008, No Child Left Behind in 2001, and Race to the Top in 2010. Given the political support for EdTech, policy issues surrounding its effect on privacy and property rights have also heightened. In the US, exposure of children to EdTech is regulated by the Children's Online Privacy Protection Rule, which prohibits unfair practices on the disclosure of information from and about children on the Internet. DMCA or Digital Millennium Copyright Act provides a framework for handling copyright infringement claims related to online content in the US. Global treaties like the Berne Convention and the TRIPS Agreement set standards for IPR protection, influencing EdTech policies across countries. These laws on intellectual property rights, data privacy, and education laws set by federal and state education departments, have affected licensing procedures of EdTech companies in a specific region or country.

Economic Factors

The demand for EdTech has tremendously grown over the years, making up more than 6% of GDP. In fact, expenditure from governments, companies, and consumers is projected to reach $7.3 trillion by 2025. Specific consumer behavior categorizes the market EdTech is catering to. First is the K-12 education group which involves students, teachers, and even parents who buy for the combined technology, data analytics, and pedagogy to provide effective learning experiences. The second market is Higher Education which includes individuals seeking further knowledge through advanced degrees, certifications, or continuing education. Third is the professional development group which characterizes working professionals seeking to upgrade or learn new skills to advance their careers. Fourth market is the corporate training in which the customer segment includes businesses seeking effective and scalable solutions to provide employees with learning and development opportunities. The last market is language learning which aims to learn new languages through online courses, language applications, tutoring services, and even immersion programs. While the above market segments pose specific needs for EdTech, other factors to consider include convenience and accessibility, quality, personalization, engagement, price, and trustworthiness.

The globalization of EdTech requires companies to overcome economic hurdles present in each country. One example is the digital divide which pertains to the variation on the internet and mobile network access between middle and low-income countries. The World Bank Group is the largest financier of education in the developing countries. It partners with governments and organizations worldwide to support projects, research, and knowledge-sharing activities such as EdTech. Another hurdle is the difference in currency exchange rates. Fluctuations in exchange rates can affect the cost of products and services, making them more or less expensive for customers in different countries. This can further influence customer purchasing decisions, which might hinder market penetration. Moreover, currency volatility can impact revenue and profitability for EdTech companies operating internationally.

Social and Cultural Factors

Several demographic trends are shaping student enrollment and educational preferences. The aging population in developed countries is expected to impact higher education, potentially leading to a decline in traditional-age student enrollment while increasing the demand for lifelong learning opportunities. Urbanization continues to influence where students choose to study, with a rising preference for urban institutions. For instance, as China undergoes urbanization, a growing proportion of migrant worker families' children have moved alongside their parents to urban areas in pursuit of improved educational prospects (Cao et al., 2023). Additionally, increasing diversity in societies is driving the need for more inclusive education that respects and embraces diverse backgrounds. The acceptance and adoption of online learning and technology integration have seen significant growth due to their benefits, including flexibility and personalized learning. However, the degree of adoption varies across cultures and regions, with some cultures still highly valuing traditional face-to-face education. The COVID-19 pandemic has further accelerated the global shift towards online learning, making it a necessity rather than a mere option (Adkins- Cartee et al., 2023).

Furthermore, societal values are playing a pivotal role in shaping the demand for specific educational products and approaches. There is a noticeable shift towards valuing skills over degrees, as evidenced by the increasing popularity of vocational training (Chauhan, 2023), boot camps (Alshawi, 2023), and online courses (Virani et al., 2023). The

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rapid pace of technological change has underscored the importance of lifelong learning. Consequently, there is growing recognition of the need for continuous skill development and education. Moreover, there is an increasing demand for education that equips students to address pressing global challenges, such as climate change and social inequality, reflecting a broader emphasis on sustainability and social impact within educational contexts. These multifaceted factors collectively influence the evolving landscape of education and underscore the need for institutions to adapt and respond to changing preferences and values (Russo, 2023).

Technological Factors

Many technological advancements which are relevant to the education industry, especially when the COVID-19 pandemic started have helped teachers and students to continue learning even at the comfort of their homes.

Online Learning Platforms. The rise of online learning platforms has revolutionized education by providing access to educational content and courses anytime, anywhere. Examples include platforms like Coursera, Udemy, and Khan Academy. LMS platforms, such as Moodle and Canvas, facilitate the administration, delivery, and tracking of educational courses and content. They enable instructors to create online courses, manage assignments, and communicate with students (Bargavi and Shanmugam, 2023).

Mobile Learning. The widespread adoption of smartphones and tablets has facilitated mobile learning, allowing students to access educational resources and participate in interactive learning activities on their mobile devices (Naveed et al., 2023).

Adaptive Learning. Adaptive learning systems use data analytics and artificial intelligence (AI) to personalize learning experiences based on individual student needs. These systems can adjust the pace, content, and assessment methods to optimize learning outcomes (Wang et al., 2023).

Open Educational Resources (OER). OER refers to freely accessible educational materials that can be used, shared, and modified by educators and students. OER includes textbooks, videos, course materials, and interactive simulations (Mullens and Hoffman, 2023).

Artificial Intelligence (AI) and the combination of Virtual Reality (VR) and Augmented Reality (AR) are two innovative technologies making a significant impact on the field of education. There is a growing trend towards integrating AI and AR in education, aimed at addressing evolving educational requirements and delivering top-notch learning experiences. AR creates immersive and interactive mixed-reality environments that captivate and motivate learners, while AI tailors educational experiences to individual needs. AI is transforming teaching by automating administrative duties, customizing learning journeys, and facilitating intelligent tutoring systems. Furthermore, AI supports adaptive learning and automated assessment, all the while offering valuable insights into student performance. (Lampropoulos, 2023; von Ende et al., 2023).

Blended Learning. Emerging technologies facilitate blended learning, combining traditional classroom instruction with online resources and interactive digital tools. This approach allows for personalized and self-paced learning while maintaining the benefits of face-to-face interaction (Bizami et al., 2023).

Enhanced Collaboration and Access. Technologies like video conferencing, collaborative online platforms, and shared documents enable remote collaboration among students and educators, breaking down geographical barriers and fostering global connections (Kathiravan et al., 2023). Emerging technologies provide access to a vast array of educational resources, including online libraries, digital textbooks, and multimedia content, making education more inclusive and affordable (Marchenko and Gudkova, 2023).

People nowadays are more dependent on technology, particularly the internet. Their digital access and inclusivity are being affected by technological barriers such as Infrastructure and Connectivity wherein limited or unreliable internet access, particularly in rural or underprivileged areas, hinders digital access to educational resources.

Environmental Factors

The rise in Ed-tech has paved the way for reduced solid wastes, specifically in paper products which comprise the largest proportion of municipal waste at over 23 percent. In fact, a report by the Environmental Protection Agency noted a decline in paper waste from 87.7 million tons in 2000 to 67.4 million tons in 2018 as work becomes online. Consequently, the rise in technology-based education also produced an increased volume of electronic waste. A United Nations Report, global e-waste generation reached 53.6 million metric tons in 2019 and is projected to reach 120

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million metric tons annually by 2050. Vishwakarma, et al. (2022), cited different waste management practices in different countries. Germany, Belgium, and South Korea employ recycling processes, such as hydro, pyro, and bio-metallurgy to recycle and recover materials from e-wastes. Whereas, in developing countries like India, the increase in e-wastes generated by the Information Technology sector leads to challenges in waste management. The lack of sophisticated e-waste treatment facilities poses occupational health and environmental hazards. E-wastes compose toxic elements such as Cadmium, Lead, Mercury, and Hexavalent Chromium.

Microenvironment Analysis

Microeconomic environment scanning results of the EdTech industry show that there is high degree of rivalry among competing firms, medium potential in terms of entry of new competitors, high chances of switching preferences on substitute products, medium level of power in terms of bargaining capacity of suppliers, and high level of power in terms of bargaining capacity of consumers.

Rivalry Among Competing Firms

The EdTech industry is growing, leading to increased competition. In 2022, the global e-learning sector exceeded a value of $243 billion. According to information gathered by the Statista Research Department (2023), EdTech firms are categorized by their total earnings, featuring well-known entities like Duolingo and Coursera. The list does not include Graphy by Unacademy. In terms of differentiation and innovation, firms with unique and high-quality content can stand out, while others may engage in price-based competition. Companies that continually innovate with new features and technologies, like gamification, can maintain a competitive edge. Furthermore, the rate of industry growth can influence rivalry; a faster-growing industry might lead to less intense competition. Global educational technology industry is expected to expand at a compound annual growth rate (CAGR) of 13.6% from 2023 to 2030. Market size was valued at USD 123.40 billion in 2022

Potential Entry of New Competitors

Several factors contribute to the complexity of entering the educational technology (EdTech) market. First and foremost, the creation of high-quality educational content demands substantial lead generation for content creators, specialized expertise, technological infrastructure, and access to resources. Additionally, economies of scale favor established EdTech companies, which have cost advantages derived from their size and experience. Network effects also play a role, as existing platforms with a large user base can create barriers for new entrants by making it challenging to attract users away from established platforms. Moreover, regulation is a significant hurdle, as compliance with educational standards and data privacy regulations is essential. Notably, data privacy and security concerns are paramount in this industry, with approximately 80% of EdTech products on the market failing to adequately explain their safeguards, further complicating the landscape for new entrants.

Potential Development of Substitute Products

The educational landscape is evolving with the rise of various alternatives to online educational content. Traditional education, encompassing in-person teaching and conventional textbooks, remains a substitute for digital resources. Additionally, there's a growing trend in other learning platforms, with free educational content becoming increasingly prevalent on platforms like TikTok, Facebook, and YouTube, offering alternative avenues for learning. Informal learning through various online resources and freely accessible content serves as a potential substitute for formal educational technology (EdTech) offerings, widening the spectrum of options available to learners. These diverse alternatives are reshaping how individuals' access and engage with educational material beyond the confines of traditional educational institutions.

Bargaining Power of Suppliers

Within the educational technology (EdTech) industry, several factors impact the dynamics of supplier power. Firstly, content providers, who furnish educational materials and resources, can wield significant negotiating power due to the uniqueness of their offerings. Furthermore, technology suppliers, responsible for providing software,

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hardware, and online infrastructure, can influence pricing and contractual terms, especially with the emergence of advanced technological tools such as smart classrooms and artificial intelligence (AI). These technological advancements add to the complexity of supplier dynamics. Nevertheless, EdTech firms have been actively seeking to counterbalance supplier power by forming strategic partnerships with content creators and technology providers. The increasing trend of collaborations and alliances between EdTech companies, educational institutions, universities, and content developers has contributed to mitigating the influence of suppliers and fostering a more balanced landscape within the industry.

Bargaining Power of Consumers

In the realm of educational technology (EdTech), the dynamics of bargaining power are influenced by several key factors. Firstly, educational institutions, such as schools and universities, possess significant negotiating power when it comes to selecting from a range of available EdTech solutions. Their choices can significantly impact the adoption of specific technologies within the education sector. Secondly, individual users, comprising students and teachers, exert influence on the demand for EdTech, particularly when they have the option to choose among competing platforms. Economic fluctuations and uncertainties play a vital role, as they can affect the capacity and willingness of consumers to invest in education, potentially altering the dynamics of the EdTech market. Lastly, pricing sensitivity is a crucial aspect, as the readiness of buyers to switch to more affordable or feature-rich alternatives can significantly shape their bargaining power within the EdTech landscape. These interrelated factors collectively contribute to the intricate balance of power within the EdTech industry, where the choices and preferences of educational institutions and individual users play pivotal roles.

Strategy Formulation

SWOT Analysis

Strengths. The platform boasts several significant strengths. Firstly, it enjoys robust support from an Unacademy, thus substantial financial and strategic backing. Additionally, the platform's global presence spans 86 countries, with intentions to expand further, underlining its international reach. It has already established a strong foothold in the online education sector in India and beyond, with a user base exceeding 5 million. Content creators on the platform have achieved substantial earnings, totaling 50 million USD, attesting to its monetization potential. Moreover, the platform emphasizes effective lead generation for a diverse array of content creators in each country, enhancing its adaptability. Addressing industry security concerns through content encryption further strengthens its position. The platform also benefits from the active involvement of more than 20 creators who contribute to its growth and diversity. Its course offerings cover a wide range of subjects and competitive exams, appealing to a diverse audience.

Weaknesses. Despite its strengths, the platform faces certain weaknesses. It operates with decentralized teams assigned to individual content creators, potentially leading to coordination challenges. The online education market is highly competitive, with numerous players vying for market share, making it a challenging environment. Additionally, the platform's dependence on educators to create and upload high-quality content may result in varying content standards, impacting the consistency of the learning experience. Maintaining learner engagement and retention over time can also pose challenges as competition in the online education sector intensifies. Furthermore, there is a potential reliance on advertising and promotions to attract new users, which could result in elevated marketing costs, affecting overall profitability.

Opportunities. There are several avenues for growth and enhancement. Firstly, there is the potential to expand the user base and increase market share by venturing into previously untapped regions and demographics. Moreover, fostering partnerships with a broader array of educators and subject matter experts could serve to diversify the range of courses offered, catering to a wider audience. Additionally, there is an opportunity to enrich content offerings by tailoring them to specific cultures, making them more culturally relevant and appealing. Exploring collaborations and partnerships with educational institutions and organizations presents another avenue for growth. Lastly, investing in technological advancements and personalized learning solutions holds the potential to significantly enhance the overall user experience, fostering increased engagement and retention.

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Threats. The online education sector is highly dynamic, with the constant emergence of disruptive innovations that have the potential to significantly alter market dynamics and pose a competitive threat. Regulatory changes and evolving compliance requirements are also potential threats that could impact day-to-day operations and necessitate adjustments. Economic fluctuations and uncertainties are ever-present threats that may influence consumer spending patterns, potentially affecting the demand for educational services. Lastly, the rise of free educational content on popular platforms such as TikTok, Facebook, and YouTube poses a threat, as it could divert potential learners away from paid educational offerings. Navigating these challenges while capitalizing on the identified opportunities will be crucial for sustained success in the online education landscape.

Internal Factor Evaluation (IFE) Matrix

Table 1 provides an assessment of the internal facets encompassing the strengths and weaknesses inherent to Graphy by Unacademy.

TABLE 1. Graphy by Unacademy's internal factor evaluation matrix

Key Internal Factors	Weight	Rating	Weighted Score
Strengths			
1. Supported and backed by Unacademy, valued at 3.44 billion USD.	0.11	4	0.44
2. Strong and established presence in the online education sector in India and in 86 countries with plans for further expansion.	0.13	3	0.39
3. Over 5 million current users.	0.10	3	0.30
4. High revenue (50 million USD) generated since its establishment for content creators	0.06	3	0.18
5. Partners with experts in specialized fields for diverse content creators in each country.	0.15	4	0.60
6. Addressing industry security concerns with marketing content encryption.	0.04	4	0.16
7. Diverse range of courses offered, catering to various competitive exams and educational subjects.	0.05	4	0.20
Weaknesses			
1. Individual content creators do not have current opportunities to collaborate with each other, leading to varying instructional designs and pedagogical expertise	0.15	1	0.15
2. Low market position	0.07	2	0.14
3. Dependence on educators to create and upload quality content, which may lead to varying content standards.	0.06	1	0.06
4. Maintenance of engagement and retention of learners over time.	0.05	2	0.10
5. Potential reliance on advertising and promotions to attract new users, leading to high marketing costs.	0.03	2	0.06
TOTAL	1.0		**2.78**

From this list, higher weights were given to partnership with experts to ensure quality of educational content (Strength 5) and pedagogical expertise and instructional design (Weakness 1). This is because these factors are highly connected to the mission statement of Graphy by Unacademy, which is to democratize access to high quality education.

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External Environment Evaluation (EFE) Matrix

Table 2 shows the evaluation of external factors such as opportunities and threats of Graphy by Unacademy.

TABLE 2. Graphy by Unacademy's external factor evaluation matrix.

Key Internal Factors	Weight	Rating	Weighted Score
Opportunities			
1. Global educational technology industry is expected to expand at a compound annual growth rate (CAGR) of 13.6% from 2023 to 2030.	0.10	4	0.40
2. Market size was valued at USD 123.40 billion in 2022	0.05	4	0.20
3. The K-12 segment led the market in 2022, accounting for over 40% share of the global revenue.	0.03	2	0.06
4. Gamification: game-based learning with the advent of technology	0.02	1	0.02
5. The business learning segment accounts for above 68% share of the global revenue.	0.03	2	0.06
6. Upsurge in partnerships among EdTech firms, educational institutes, and content developers	0.08	4	0.32
7. Regional insights: Asia Pacific is anticipated to register the highest CAGR over the forecast period	0.06	3	0.18
8. Rise of technological tools such as smart classrooms and artificial intelligence (AI)	0.02	2	0.04
Threats			
1. More companies entering the market since the EdTech market is forecasted to grow 13.6% annually and reach $348.41 billion by 2030.	0.09	4	0.36
2. Data privacy and security concerns 80% of EdTech products on the market fail to explain their safeguards.	0.07	4	0.28
3. Regulatory changes and compliance requirements that may impact operations	0.12	3	0.36
4. Global economic growth is projected to fall from an estimated 3.5 percent in 2022 to 3.0 percent in both 2023 and 2024.	0.10	3	0.30
5. The dynamic nature of the online education sector, with disruptive innovations potentially affecting market dynamics.	0.08	2	0.16
6. Economic fluctuations and uncertainties that could affect consumer spending on education.	0.08	2	0.16
7. Rise of free education in platforms such as TikTok, Facebook, and YouTube.	0.07	2	0.14
TOTAL	1.0		**3.04**

The weights and results indicate that the organization should focus on seizing growth opportunities, enhancing security and compliance measures, staying competitive, adapting to economic conditions, integrating emerging technologies, maintaining content quality, and clearly communicating its value proposition in the face of competition from free education platforms.

The high weight assigned to the growth opportunities, such as the expected expansion of the global educational technology industry and the upsurge in partnerships, suggests that the organization should prioritize strategies aimed at capitalizing on these opportunities. This may include expanding into new regions, forming strategic collaborations, and diversifying course offerings to tap into the potential market growth.

After evaluating the internal and external factors for the educational technology platform Graphy by Unacademy, this paper presents strategies that the company may undertake through an integrated analysis.

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I-E Matrix

After calculating the EFE and IFE, the total weighted scores were plotted in this I-E Matrix (Figure 1). The position of Graphy in this matrix indicates that it needs to grow and build.

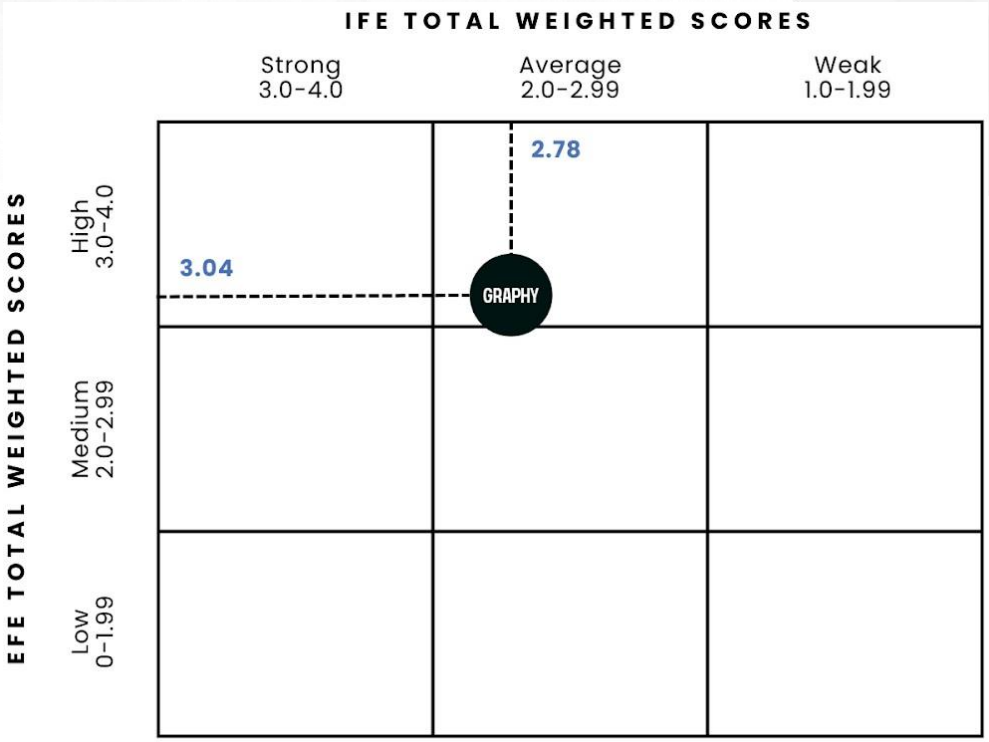

FIGURE 1. I-E Matrix for Graphy by Unacademy

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SWOT Matrix

After a thorough evaluation of Graphy by Unacademy's strengths, weaknesses, opportunities, and threats, Table 3 offers strategic suggestions for each combination of these elements, aiming to provide valuable guidance for potential courses of action.

TABLE 3. Formulated strategies for Graphy by Unacademy considering the strengths, weaknesses, opportunities, and threats.

SO Strategies • Foster strategic partnerships and collaborations with educational institutions and organizations to enhance Graphy's course offerings • Encourage and support content creators to develop niche courses targeting specific competitive exams (i.e. SAT, ACT, IELTS, TOEFL) and educational subjects • Facilitate training and support to onboard new creators, ensuring a steady influx of quality content. • Mediate collaboration among active content creators	**ST Strategies** • Proactively engage with regulatory bodies to understand upcoming changes in the education sector and ensure compliance requirements are met • Explore additional revenue streams beyond course sales e.g., offering more premium features or collaborating with corporate clients for employee training • Focus on markets with a high demand for online education and a conducive regulatory environment
WO Strategies • Implementing efficient collaboration tools and processes • Identify niche markets with specific educational needs and offer specialized content to cater to those audiences, differentiating Graphy from competitors • Review and curate course content to maintain consistency and high standards • Exploit opportunities to partner with educational institutions and organizations to leverage their networks for marketing • Partner with educators and subject matter experts from different regions and cultures to create content that resonates with specific target audiences	**WT Strategies** • Establish a dedicated team to monitor and assess evolving compliance requirements, market trends, and user preferences • Explore opportunities to offer additional value-added services or subscription models • Employ gamification, interactive assessments, and social learning features • Optimize marketing strategies based on data analytics and user behavior • Focus on targeted marketing efforts, collaborating with influencers or strategic partners

Grand Strategy Matrix

After analysis of the internal and external forces around Graphy by Unacademy, the position of the company in the grand strategy matrix was positioned in Quadrant II, where it has a relatively weak competitive situation, but there is a lot of opportunity to go for. The strategies in the SWOT Matrix were simplified and plotted here.

The positioning of Graphy by Unacademy in Quadrant II (Figure 2) of the Grand Strategy Matrix signifies a strategic outlook that is characterized by a relatively weak competitive situation, yet it is also marked by substantial opportunities for growth and development. This quadrant, often referred to as the "Grow and Build" quadrant, is an interesting and challenging space for a company to navigate.

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Firstly, the recognition of a relatively weak competitive situation implies that Graphy may be facing challenges in its current competitive landscape. It may be contending with strong competitors, struggling to gain market share, or facing hurdles in differentiating its offerings effectively. However, being positioned in Quadrant II does not indicate a bleak outlook; rather, it highlights the potential for improvement and expansion.

FIGURE 2. Graphy by Unacademy's position based on the analysis of the macro- and microenvironment factors.

The substantial opportunities present in this quadrant offer an avenue for growth. Opportunities could come from various sources, such as untapped markets, emerging trends, technological advancements, or strategic partnerships. For Graphy by Unacademy, it means that there is a favorable environment for exploring and capitalizing on these opportunities to strengthen its market position.

The strategies classified in Quadrant II serve as a foundation for further strategic planning. For Graphy by Unacademy, this positioning in Quadrant II necessitates a focused and strategic approach. It might involve tactics such as enhancing its competitive strengths, addressing weaknesses, and making the most of the identified opportunities. The company can also work on shoring up its weaknesses to better position itself to exploit the favorable market conditions in which it operates. To further narrow down the best strategies, the Quantitative Strategy Planning (QSP) Matrix

Quantitative Strategy Planning Matrix

From the strategies in Quadrant II of the Grand Strategy Matrix, two strategies, Identifying Niche Markets & Offer Specialized Content and Partner With Universities for Regional Resonance, were analyzed for the QSP, since these two strategies were the closest with Graphy by Unacademy's mission statement. The QSP is presented in Table 4.

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TABLE 4. Quantitative Strategic Planning (QSP) Matrix for Graphy by Unacademy considering the internal and external factors.

KEY FACTORS	W	Identify Niche Markets & Offer Specialized Content		Partner With Universities For Regional Resonance	
		AS	TAS	AS	TAS
Internal Factors					
Quality of Course Content	0.20	4	0.80	4	0.80
Collaboration Efforts with Creators	0.17	3	0.51	4	0.68
Content Standardization Efforts	0.13	3	0.39	4	0.52
Training and Onboarding Efficiency	0.12	3	0.36	3	0.36
Creator Community Engagement	0.11	4	0.44	4	0.44
Compliance Monitoring Team Effectiveness	0.14	2	0.28	2	0.28
Marketing Optimization Capabilities	0.13	4	0.52	4	0.52
Sum Weights	1.0				
External Factors					
Market Demand for Online Education	0.13	4	0.52	4	0.52
Collaboration Opportunities with Institutions	0.20	2	0.40	4	0.80
Regulatory Changes in Education	0.14	3	0.42	3	0.42
Emerging Technological Tools	0.13	2	0.26	4	0.52
Competitor Course Offerings	0.15	4	0.60	4	0.60
User Feedback and Preferences	0.12	4	0.48	3	0.36
Economic Fluctuation Worldwide	0.13	3	0.39	3	0.39
Sum Weights	1.0				
SUM TOTAL ATTRACTIVENESS SCORE			6.37	<	**7.21**

Where: W = weights; AS = attractiveness score; TAS = total attractiveness score

Table 4, the Quantitative Strategic Planning (QSP) Matrix for Graphy by Unacademy, provides a systematic evaluation of two key strategies, "Identifying Niche Markets & Offer Specialized Content" and "Partnering With Universities for Regional Resonance," concerning the company's internal and external factors.

Firstly, the internal factors are examined. These factors represent elements within the organization's control. The quality of course content, collaboration efforts with content creators, content standardization efforts, training and onboarding efficiency, creator community engagement, compliance monitoring team effectiveness, and marketing optimization capabilities have been assigned respective weights. These weights indicate their relative importance in the company's strategic decision-making process. The attractiveness score (AS) for each factor is calculated, which represents the company's performance regarding these internal factors concerning the chosen strategies.

Moving to the external factors, these encompass elements outside the company's control. Market demand for online education, collaboration opportunities with institutions, regulatory changes in education, emerging technological tools, competitor course offerings, user feedback and preferences, and economic fluctuations worldwide have been assigned weights to gauge their significance. The attractiveness score for each external factor is computed, reflecting how these factors impact the selected strategies.

The Total Attractiveness Score (TAS) for each strategy is calculated by summing the AS values for both internal and external factors, with the respective weights considered. The Total Attractiveness Score serves as a comprehensive assessment of each strategy's overall potential. In this case, the "Identifying Niche Markets & Offer Specialized Content" strategy has a TAS of 6.37, whereas the "Partnering With Universities for Regional Resonance" strategy has a TAS of 7.21.

The final comparison is made by evaluating the TAS scores. The "Partnering With Universities for Regional Resonance" strategy has a higher TAS, indicating its higher overall attractiveness compared to the other strategy.

This QSP Matrix aids Graphy by Unacademy in quantitatively assessing the strategies, considering both internal and external factors. It provides a data-driven foundation for decision-making, enabling the company to focus on strategies that align more closely with its mission statement and have a greater overall potential for success.

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CONCLUSION

In the dynamic landscape of education, technology's influence cannot be underestimated. It's shaping the educational industry in significant ways, and platforms like Graphy by Unacademy are leading this transformation. This research embarked on a comprehensive exploration of the macro and micro-environmental factors propelling the democratization of quality education through EdTech platforms. It also delved into strategies critical for companies and startups to strengthen their positions within this ever-evolving ecosystem.

Our methodology involved extensive environmental scanning through a literature review, bolstered by pseudo-quantitative analyses such as Internal Factor Evaluation and External Factor Evaluation. We further enriched this analysis by applying Porter's Five Forces Model, which illuminated the competitive landscape. Additionally, we crafted a strategic roadmap by integrating various analyses, including the I-E Matrix, SWOT analysis, Grand Strategy Matrix, and the Quantitative Strategy Planning (QSP) Matrix.

The results painted a nuanced picture. While the industry faces a somewhat weak competitive landscape, it teems with untapped opportunities. The QSP Matrix highlighted specific areas where market positioning and differentiation can be bolstered. By strengthening internal facets like forging strategic partnerships with higher education institutions and targeting niche markets with specialized content, companies, such as Graphy by Unacademy, can solidify their presence in the sector.

In a world increasingly shifting towards an online-driven paradigm, leveraging the potential of online educational platforms is imperative. It's not just a means to reignite a passion for learning among the younger generation but also a catalyst for discovering innovative avenues for growth and progress. This education revolution, driven by the democratization of education through EdTech platforms, holds immense promise. It underscores technology's transformative power in bridging educational disparities and steering us towards a more inclusive and accessible learning environment. As the digital age unfolds, these strategies and insights are poised to shape the future of education, ushering in a new era of opportunities and advancement.

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