INTEGRATING BUSINESS ANALYTICS IN THE MARKETING CURRICULUM: EIGHT RECOMMENDATIONS

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Advances in technology and marketing practice have left little doubt that analytics must be integrated into the marketing curriculum, the question for many educators now is how to best to do so. While the response for each school will depend on its mission and context, as well as its strategies and resources, there already is much that can be learned from experiences across the business education industry. This article draws on these experiences to offer eight recommendations across fours areas of the marketing curriculum, including content, pedagogy, structure, and purpose. A wide range of important issues are considered in the process, including the role of experiential learning and blended learning, balance of technical knowledge and soft skills, rise of badges and other non-degree credentials, importance of ethics, and challenges related to program sustainability.

This article starts with the premise that advances in technology and analytics have converged to have a profound impact not only on what we do in business and marketing but also on how we manage to do it. Having moved beyond asking *whether* it is necessary to integrate analytics in the marketing curriculum, we are now considering the best ways to do so. Of course, what is best will depend mostly on the mission and context, as well as the strategies and resources, of individual business schools and their marketing departments. Nonetheless, there are a number of shared issues and challenges across schools, and there are some common questions worth considering.

What should marketing educators think about and look out for when planning to integrate analytics? What are some common pitfalls? Beyond content, what structures and pedagogies might be more useful and consistent with where business education as a whole is going? Does anything else need to happen in order to support the curriculum change? Anyone interested in addressing these questions should find some consequence in the recommendations and associated commentary that follow. This article is for educators seeking to integrate analytics into marketing curricula, offering eight recommendations across the four parts of a curriculum: content, pedagogy, structure, and purpose.

The recommendations presented here are derived more from experience rather than academic research. For the past two decades, I have worked on curricula issues with business school leaders around the globe. Much of that experience has been in the context of accreditation, including learning and teaching standards. Also relevant, though less evident, is my managerial work at AACSB, involving both data analytics and marketing. Early on, I helped build foundations for what we now call business education intelligence, which provides access to data and information for business education leaders to plan and make decisions as well as promote their schools and programs. Finally, throughout the past five years, I have been involved in developing our own marketing and analytics capabilities in order to advance AACSB's advocacy and awareness goals at the global level.

DEFINITIONS AND SCOPE

Any *curriculum* can be broken down into at least four parts. First, *content* refers to the marketing theories, concepts, techniques, skill sets, and the like, that are intended to be covered. Second, *pedagogy* defines the approaches to teaching and evaluation related to the content. Third, *structure* or *architecture* concerns how the pieces of content and pedagogies are combined, organized, and sequenced as well as how they fit other curricula, such as through joint degree programs.

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Fourth, *purpose* describes the overarching goals, themes, and values that the curriculum serves. Each part is addressed in turn, providing context for each of the eight recommendations.

In preparing this article, I tried to keep in mind a wide variety of approaches to integrating analytics into the marketing curriculum. As a field or discipline within the broader area of business and management, a marketing curriculum might lead to an undergraduate degree program major or specialization, MBA concentration, or specialized master's degree. Bachelor's degree students majoring or specializing in marketing normally take a series of courses (e.g., consumer behavior, marketing strategy, marketing channels, marketing research, marketing communications, etc.). In the United States, students will also complete a core set of business and management courses (e.g., accounting, finance, business strategy, etc.) and satisfy a set of general education requirements, which might include science, mathematics, social sciences, and arts and humanities.

For the purposes of this article, I try to generalize across the degree program levels to increase its utility. The reference for the scope of the marketing curriculum encompasses broader business and management components, including marketing, but not the general education requirements. Similarly, for generalist master's programs (e.g., MBA), I include the core courses in an MBA program as well as the courses for a marketing concentration.

In European countries, it is common for undergraduate students to specialize in their selected field from the beginning. Curriculum perspectives for these programs might be analogous to specialized master's degree programs in marketing, which have been on the rise. The proportion of master's students enrolled in specialized master's programs has increased from 23% to 35% in the past decade. Accordingly, I suspect many readers will be considering the role of analytics in more specialized marketing programs.

CONTENT

Questions about content, specifically on what theories, concepts, and techniques to include in the curriculum, tend to provoke passionate discussions in curriculum development and review efforts. Such discourse is not surprising, because the committees in which curriculum choices are made are usually composed of scholars who have a deep understanding of and passion for their chosen subject areas. Faculty experts usually drive curriculum decisions. Ideally, however, they should also listen to the organizations that hire their graduates.

Regardless of the process, the distribution of technical content, general knowledge, and soft skills must eventually be determined. Technical knowledge and skills include, for example, marketing discipline knowledge as well as the technologies and techniques supporting the application of knowledge. Concepts and applications in analytics may also be included under technical knowledge insofar as they are integrated in the marketing curriculum. And, depending on the program, general business and management knowledge (e.g., finance, marketing, operations, etc.) have to be considered. Finally, we must also determine the soft (or meta) skills, such as leadership, communication, critical thinking, teamwork, and so forth. Therefore, my first recommendation is about the range of content to include.

Recommendation 1: Include an Appropriate Balance of Technical Knowledge and *Soft Skills in the Analytics and Marketing Curriculum*

This recommendation might seem obvious, but it is worth stating and exploring explicitly up front. Content choices impact everything else. They will enable (or not) market differentiation. Including general business knowledge, for example, may distinguish a business school's program from similar ones offered by communications departments. Content will also drive resource requirements, which will be addressed later.

Of course, the recommendation is vague because the most appropriate balance will depend on the school and department. Nonetheless, I share some of my own thoughts and experiences on achieving the balance of technical and soft skills. Many people assume that analytics is about technical skills. Yet, we know that soft skills will ultimately be more important for career success, even in quantitative areas. We also know that the "half-life" of technical skills is shrinking, and that we are currently educating students for many jobs

and organizations that do not yet exist. More importantly, there is also the question of automation. Quantitative tasks are more likely to be automated, leaving humans with more relational tasks in which interpersonal skills matter most.

These observations favor a curriculum that is more heavily weighted toward soft skills. In fact, I *used* to hear from recruiters that they were more interested in assessing soft skills because they assumed that the technical skills were adequately addressed by the program, as long as it was AACSB accredited.

Now, employers are less likely to take technical knowledge and skills for granted than in the past. This reluctance is in part because of the accelerating change in business practices as well as the diversity and variance in programs/curricula. Executives now say they need data-driven leaders. They are asking for folks that can work comfortably with both data and people and managers that can build useful models of the data and lead the team that will put it into practice. In addition, recruiters are emphasizing the importance of communication. Recruiters say they need people that can study or create a data model and explain to business leaders what it means and what they should do about it. Finally, based on my own managerial experience in the marketing space, any viable candidate for an entry-level position must have had some experience using analytics tools. In the end, we all agree that we are seeking an optimal combination of technical knowledge and soft skills.

Before continuing, we should put aside any doubt about whether AACSB accreditation requires analytics. Following is an excerpt from the 2013 *Eligibility Procedures and Accreditation Standards for Business Accreditation*. The excerpted text is based on Standard 9, which addresses curriculum content and states that business bachelor's degree programs and higher must include learning experiences that address:

> Information technology and statistics/quantitative methods impacts on business practices to include data creation, data sharing, data analytics, data mining, data reporting, and storage between and across organizations including related ethical issues.

Without any doubt, the text currently leaves lots of room for interpretation and will surely be revised based on experience in the years to come. For now, note that, in the same standard, AACSB also lists the following general skill requirements: written and oral communication, ethical understanding and reasoning, analytical thinking, interpersonal relations and teamwork, and reflective thinking. Interestingly, AACSB's statement about data analytics includes a reference to ethical issues. This inclusion of ethics reminds us to consider a number of other "integrative" topics in our own curriculum initiatives.

Recommendation 2: Embed other Critical Topics, such as Internationalization and Ethics, in the Analytics and Marketing Curriculum

There are many important challenges associated with business analytics in an international environment, ranging from straightforward concerns about data validity, confidentiality, and regulations to the complex challenges associated with cybersecurity. Some of the more interesting data-modeling questions stem from cross-border issues dealing with segmentation, pricing, and consumer behavior, not to mention supply chains.

There are also many ethical issues in the areas of analytics and marketing. To what extent can we legitimately use customer data for advertising? Is it legal to mine data from people signed on to your free Wi-Fi service or to scrape data from competitor websites? What about sharing customer data with other organizations, such as charities? Where are the bounds of suitable behavior on social media platforms? What are my obligations when it comes to gender and/or racial discrimination? Is it acceptable to use data that I know are false or inaccurate? The point here is that we need to be purposeful in introducing ethical issues related to analytics in marketing. It likely will help students deal with these issues successfully in practice and provide them with access to resources and guidelines. And remember, as managers, our graduates will be responsible for the behaviors of others, not just themselves.

PEDAGOGY

While content refers to what we teach, pedagogy is about how we teach it. Pedagogy is at least as important as content in achieving learning outcomes. Important questions include but are not limited to the following: How much of the teaching load is online and/or face to face? How much instruction should rely on individual

versus team learning? Should we use the case method or lecture? In my experience with curriculum development, many of the questions about pedagogy are left up to individual professors to decide. That is a risky practice, because the overall success of the curriculum depends on combined decisions and behaviors of faculty and students.

One pedagogical question pertains to the balance between academic study and experiential learning (including the extent to which they intersect). AACSB has had much to say about this question in recent years. In 2013, AACSB gathered three standards into a new section labeled "Academic and Professional Engagement." Here is an excerpt from the preamble to that section:

> Business schools can achieve effective business education and impactful research by striking different balances between academic study and professional engagement. However, if schools largely ignore one side or the other, both their degree programs and scholarly output will suffer.

Accordingly, Standard 13 mandates that "curricula facilitate student academic and professional engagement appropriate to the degree program type and learning goals." The basis for judgment for this standard allows that: "*While all curricula should facilitate both academic and professional engagement, the amount and balance depend on a variety of factors, including degree program type, expected outcomes, and experience levels of incoming students*." In the introduction to the engagement standards, AACSB states that "*academic study and professional engagement within a business school are not separate activities; rather, they intersect in significant ways*."

When it comes to analytics education, we cannot ignore the theories and concepts or the problem-solving techniques. However, there is widespread agreement that a large portion of analytics education should be experiential. This would seem at least as true for business analytics and for marketing as it is in general or for any other field.

Recommendation 3: Connect More Experiences to Learning in the Analytics and Marketing Curriculum

Besides the fact that experiential learning can be more effective, it seems particularly well suited to some fields within business and management than within others. Accountants, for example, have professional standards that ought to be, and are, an important part of the education they receive. For analytics, we want to lean more heavily on experiential pedagogies for several reasons. First, it is important for students to be exposed to and deal with the real imperfections and implications of data. An interesting analytics course offered by the Rady School of Management at the University of California in San Diego is called "Analytics in the Wild." Student teams work on data projects for companies. The data are raw (aghast), sometimes even coming in printed form, and the analysis can have real value to organizations that have thus far invested little to develop an analytics function.

Second, the tools and techniques used in practice are rapidly evolving. The reality is that most companies are still early and underdeveloped in their analytics capacity. It is impossible to predict the extraordinary innovations of tomorrow, especially with artificial intelligence, utilizing real-time data streaming and the rapid development of the Internet of Things (IoT). Students need to gain experiences early and they need the agility to adapt to different approaches in other organizations. I have always believed that experiential projects coupled with the reflection and coaching provided by higher education can be a powerful combination in developing this type of learning agility.

Third, in organizations, the human interactions surrounding data can be as important as the analysis or the models that are developed. An executive at Amazon once described the company to me as the most innovative organization on the planet. No surprise there! Then, in the same breath, he also described Amazon as the most chaotic organization he's ever experienced. He said it was not unusual to find two or more teams are working on exactly the same project. Not every organization is like Amazon, but they all have people, and where there are people there are conflicts and politics. Our students need exposure to the human side of management through experiential learning.

Choices about pedagogy translate into requirements for faculty and professional staff as well as supporting software and computing capacity. Experiential learning requires more of each. It also requires faculty to have skills they are not normally taught in doctoral programs.

Recommendation 4: Ensure There Are Adequate Resources to Improve and Scale the Analytics Program

I worry about the pipeline of faculty talent needed to sustain the analytics program growth we are seeing. Too often schools create programs that turn out to be extremely popular, but they are unable to scale quickly enough to capture the value. In the analytics field, businesses are increasingly competing with business schools for research talent. Executives at large digital companies have been especially active in trying to recruit scholars who have written papers that involve a companies like theirs.

We should be concerned not only about the academic preparation and practical experiences of faculty but also about their ability to teach using more experiential pedagogies. To achieve the gains from experiential learning in business analytics, teachers will need to do things such as build simulations, arrange access to company data, structure and manage projects, provide behavioral feedback to teams, and so forth. I always encourage business schools to think creatively about how they can effectively leverage PhD faculty by employing more professional staff to develop content, manage projects, and coach students.

Finally, relative to other business programs, analytics education requires more supporting software and access to computing power. While various companies operating in the analytics space offer free or discounted access to software and other resources for teaching, relationships with those companies must still be cultivated and managed. And, departments must still provide storage capacity for large data sets, house software for faculty research, and maintain secure environments. The main point here is that it is important to have a resource plan that aligns with the curriculum.

STRUCTURE

The structure or architecture of a curriculum reflects the way courses or modules are integrated together or otherwise interact with each other. It is about how the pieces complement each other as parts of a whole package. Structure not only affects learning, it also has a major impact on the experience of students by affecting how convenient it is for them to access teaching. Structure also has implications on the extent to which faculty are independent or work together as a team.

Recommendation 5: Take a Comprehensive Approach to Integrating Analytics in the Marketing Curriculum

Adding an analytics course to the marketing curriculum is not enough. In my experience, inserting a required course often leads to isolation, because other professors think there is no need to cover the subject in their own classes. Integrating the topic across the curriculum suffers a slightly different problem. As instructors change, the content gradually fades away until it becomes invisible. When schools are serious about infusing an important topic, I usually recommend a comprehensive approach in which relevant content modules are distributed across several courses in the curriculum and are connected to a required course that serves as a hub and/or platform. This approach involves a deeper level of commitment to an important subject that cuts across the curriculum. If done well, the subjects (e.g., globalization) can behave like glue, holding otherwise disparate courses together. There will be more on this point when we talk about purpose in the curriculum.

A comprehensive approach will be useful for integrating analytics in the marketing curriculum. A required course could provide foundational concepts, tools, and techniques that can serve other parts of the curriculum. The course could also serve as a hub, connecting and supporting modules and projects in other courses throughout the marketing program, preventing business analytics from becoming isolated or invisible.

Some of the best business curricula have courses that are deeply interconnected where every course and project complement and build on others. The whole package is beautifully crafted to provide a valuable, transformative experience. The cost of this interdependence is, of course, limited flexibility and agility to respond to changing demands. One way to mitigate this problem is by modularizing and digitizing segments or parts of courses. By unbundling courses, we can provide learners with the flexibility to combine courses in new and creative ways (see the following Recommendation 7).

Therefore, I advise marketing educators to consult with faculty in other business disciplines who are working on similar integrations. One thing is certain, big data and analytics are having profound impacts across all the traditional business functions, such as accounting, finance, human resources, and supply chain management. What concepts and tools sit at the intersection of these areas? What can we share and contribute across disciplines? These are important questions demonstrating the importance of taking a comprehensive approach.

Recommendation 6: Supplement the Marketing Degree With Analytics Badges and Digital Portfolios

At AACSB, we believe that business and management education will continue to expand as the career lifespan increases and the pace of change accelerates. We also believe the proportion of business education defined as degree-based will shrink as digital advances enable more content to be unbundled and delivered independently. Meanwhile, learners have been consuming education from a greater and even a wider variety of providers and third-party platforms. As a result, this trend has enabled alternative micro-credentials (i.e., badges, specializations, certifications, etc.) to gain market traction. At the moment, these alternative credentials are viewed by many as supplements to university degrees. In the future, they may be considered substitutes if businesses begin to treat them as such.

Learners want to demonstrate to potential employers exactly what they know and what they can do. Unfortunately, degrees are not transparent about the competencies earned by graduates. Millennials and more mature workers want to showcase the competencies they developed through experience as well as through formal professional development and education programs. Indeed, I have been advising business schools to add micro-credentials as options for their students as a way to supplement and increase the value of the degrees they will earn. In our case, what if the degree is in marketing and the specialization is in business analytics? The department can offer a badge in business analytics to supplement the marketing degree. If the degree is in analytics, departments can add relevant specializations (e.g., social media analytics) that connect with other business disciplines, such as marketing.

Many schools now enable students to build expanded digital transcripts or portfolios of the outputs they create while making their way through a curriculum. Today, digital transcripts might include an inventory of extracurricular activities that complement the coursework. Digital portfolios enable students to collect and display evidence from experiential projects to highlight skills and competencies. Both of these developments can be especially useful in the analytics area, given the amount and nature of experiential projects to be expected (see Recommendation 3).

Recommendation 7: Experiment With Blended Learning Alternatives

The spirit of this recommendation is to explore curriculum structures beyond the ordinary. We are seeing more schools create courses and curricula that operate outside the norm of 14-week semesters and three credit hours. My view is that business schools have only just begun to experiment with new ideas that break the current rules of higher education. More narrowly, we are just beginning to develop our capacity for online education.

Today, it would be unwise to design a completely residential program supported only by face-to-face meetings between professors and students. Alternatively, I am convinced that despite the significant growth in pure online programs, the space of blended learning offers the greatest potential for improving and scaling business education. Business schools that are not experimenting with blended learning will be left behind by this potential and, dare I say, quite possibly go out of business.

The most straightforward approach to blended learning is to substitute some online courses for face-to-face ones. There are, however, numerous other approaches. Instead of replacing courses, we can select sections or parts of courses for delivery online. This type of modularization can be especially helpful as an enabler of flexibility and customization.

Another approach gaining in popularity is "flipping the classroom," which entails providing access to online content in preparation for a face-to-face meeting

based on active learning, teamwork, and engagement. We also can connect experiential projects to online learning by, for example, pairing students from different locations. And we can take virtual-reality field trips.

Analytics curricula are especially well suited for experimentation. Analytics is itself digital, and it is new and changing rapidly, requiring schools to constantly learn and adapt. It can be the source and inspiration for innovation in academic enterprises.

PURPOSE

Purpose is an important but often overlooked component of a curriculum. It reflects the goals, themes, and values of a school, department, or program. Purpose can mean different things to different people and can be hard to pinpoint. I think of it as something *extra* beyond the core subject—it is embedded in the curriculum and provides a focal point for students and faculty participating in the curriculum. It can be the gravity holding disparate courses together. It can be the answer to the question: "Why does this program matter to society?" Ultimately, it provides needed guidance for the faculty and staff involved in curriculum development.

It would be simple and easy to justify integrating analytics into marketing curricula on the basis of market demand, because both employers and prospective students want it. That might be necessary to gain approval for the program and to sustain it throughout the short term. But, building a curriculum simply to connect students to jobs does not feel sufficient to me. The justification favors a more instrumental focus than we should expect in higher education. We need something more. That brings us to the eighth recommendation.

Recommendation 8: Elevate the Purpose of Analytics and Marketing Education Beyond Employability

Every curriculum deserves to be distinguished by a small set of higher-level principles, themes, or values. The derivation of these values is a journey that every school and department must take along with their stakeholders. For a topic such as analytics in marketing, the overarching theme might be something business-like, such as "democratizing data for marketing decisions" or "connecting analytics to customer value." Curricula can also draw inspiration from the school's values, such as entrepreneurship, ethics, or globalization. Another approach is to connect with the location of the school. It would be difficult to ignore advertising in New York, finance in London, or fashion in Paris.

From my point of view, however, it is worth exploring the potential social impact of the program. What role does it play in developing leaders that change the world in a positive way? I believe the purpose of education is largely for the benefit of society as well as the individual. And, I believe that marketing and business analytics hold great potential for social impact through business, government, and nonprofit organizations. For example, as we ascertain behavioral insights from the use of mobile devices in sub-Saharan Africa, we can learn more about which economic development programs have been most effective. By analyzing streaming data from manufacturing machines and appliances, we might be able to reduce energy consumption and achieve global sustainability goals. I believe analytics education can enable graduates to revolutionize marketing for social impact and not just business performance.

SUMMARY AND CONCLUSIONS

This article outlined eight recommendations for educators seeking to integrate analytics into the marketing curriculum. We covered a lot of territory, including how to think about the content and what ought to be included, or not. We considered the special role of experiential learning and the extra resources needed to provide more of it. We explored the pitfalls of curriculum integration and how to manage against them, as well as how to capitalize on emerging opportunities by adding supplemental badges and experimenting with blending learning. We tried to pull it all together under a shared purpose.

Reflecting on the recommendations, it is no wonder that curriculum change is usually not easy and why outsiders see it as slow and measured. Sometimes it seems like a zero-sum game. There is only so much available time and we must choose either this or that, not both. As programs get shorter, we must make hard choices about content, pedagogy, and structure. And, as academics, we are naturally anxious about giving

something up to include something else, let alone, something new and unchartered.

There are so many pieces that must align. Do the learning objectives align with the overarching purpose of the program? How does the pedagogy square with the content and structure? How can we leverage blended learning models for experiential learning? Does the financial model provide enough resources to scale the program in case it is popular? Is access to our curriculum convenient and flexible enough for our students who are working professionals?

Addressing questions like these may be too much for some or viewed as too slow for the hurried pace of business. In the end, I believe it reflects exactly what business schools and universities must do. Discover, debate, and involve stakeholders before deciding what should be learned in a program. Consider and evaluate a variety of pedagogies before deciding what to apply. Unbundle courses and modules and repackage them in new and creative ways. Break the rules and experiment with new credentials and structures. Learn from these experiments and build new and better programs.