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Business Analytics in the Eyes of the Learner and Educator: A Pakistani Perspective

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ABSTRACT

This research examines the growing dynamics of Business Analytics (BA) and how academics in Pakistan perceive it. The study uses a qualitative design to categorize how university students and faculty members understand Business Analytics (BA). Data was collected through in-depth interviews and analyzed using thematic analysis. The initial results disclose a wide range of views. Some participants view BA mainly as a field rooted in mathematics and statistics. At the same time, others focus on practical tools like Excel, Power BI, and dashboards. A third group links BA more closely with programming, particularly languages such as Python and SQL.

One of the key findings is the variation in content offered under Business Analytics programs across Pakistani universities. This finding suggests a lack of standardization, as the field is still relatively new in this area. The analysis also shows distinct disparities between how students and faculty view Business Analytics. These differences reflect varied teaching philosophies. The report concludes by suggesting curriculum development, effective teaching strategies, and directions for future research. It also emphasizes the need to align academic programs with the changing expectations of students and the needs of the industry in the Pakistani context.

Keywords: Business Analytics, Qualitative Research, Higher Education, Pakistan

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1 INTRODUCTION

Data increasingly defines the contemporary business world. This change is transforming traditional decision-making into evidence-based approaches.(AACSB International, 2025) Business Analytics (BA) has become a key domain supporting this quick change. It helps organizations to turn large and complex datasets into practical insights. (Agyeman & Aphane, 2024). In business, rapid digital growth and better access to data have also increased the importance of Business Analytics. It now plays a crucial role in sectors like finance, marketing, and operations.(Al-Eisawi, 2025) Companies use advanced information systems to collect and process data. This new process has changed how they manage business activities.

Decision-making has moved from personalized judgment to methods based on data. Because of this, process analytics has become an important approach to creating value.

Business Analytics is developing rapidly. This rapid change is due to the rise of big data and the ongoing digital transformation of many industries. As up-to-date tools and methods appear in the field, it continues to grow. These changes lead to various interpretations of what BA means. People understand it differently depending on their background, experience, or education. Some focus on technical tools, while others prioritize business outcomes. The use of Artificial Intelligence (AI) has further expanded the scope of Business Analytics. AI is being utilized to enhance business efficiency and facilitate data analysis.(Almalki et al., 2021; Alzghaibi, 2023) This makes the field more complex. It is now harder to provide a single, straightforward definition of Business Analytics. It is not a fixed concept. Instead, it is a broad and evolving area that brings together data, technology, and decision-making.

Despite the growing importance of Business Analytics (BA), its definition and scope are still understood in different ways within academic settings, particularly in Pakistani universities. Many students give what can be described as a mixed review of their understanding of Business Analytics. A significant number of students view Business Analytics primarily as a subject focused on mathematical and statistical domains. They emphasize its roots in quantitative analysis and numerical rigor. Many view Business Analytics more through the use of practical tools, such as Excel, Power BI, and dashboards. This group tends to focus on data visualization and reporting. A third group links Business Analytics closely with programming. They highlight the importance of languages like Python and SQL for data manipulation and computational work.

Faculty members also show a wide range of views. Their comprehension of Business Analytics majorly reflects their own research interests and teaching methods. This approach means that both students and instructors bring different expectations and approaches to the classroom. These differences recommend a possible gap between what academic programs offer and what students or the industry expect. When students enter Business Analytics courses with varying ideas of what the subject entails, and faculty members teach it from different conceptual angles, the result can be perplexing. It may lead to inconsistencies in how the curriculum is delivered and understood by the learners.

This situation impacts student engagement, learning outcomes, and, ultimately, their preparedness for careers in business analytics. Addressing this perceptual divide is crucial for fostering a more coherent and effective educational experience in BA within the Pakistani higher education landscape.

This study aims to qualitatively explore and categorize the perceptions of "Business Analytics" among university students enrolled in or considering BA programs, as well as among faculty members actively involved in BA education, specifically within the context of Pakistani universities.

The specific research questions guiding this investigation are:

- How do university students in Pakistan perceive the field of Business Analytics, particularly regarding its core components, required skills, and career applications?

- What are the diverse perspectives of faculty members on the definition, scope, and pedagogical approaches within Business Analytics education in Pakistani universities?

- What are the areas of convergence and divergence between student and faculty perceptions of Business Analytics in this context?

- How do Business Analytics curricula vary across different universities in Pakistan, and what factors contribute to these differences?

2. LITERATURE REVIEW

2.1. Conceptualizing Business Analytics: A Multidisciplinary Domain

Business Analytics is often described as an interdisciplinary field, drawing significantly from numerous areas of study to extract knowledge from data and support strategic business decisions. Its composition usually integrates theories from statistics, computer science, management science, and information systems. BA has evolved from traditional decision support systems by employing sophisticated information technologies and methods to gather and process data. BA has evolved to encompass new, sophisticated analytical approaches, such as big data processing, machine learning, and artificial intelligence, that transform raw data into valuable business intelligence.(AACSB International, 2025)The interdisciplinary and comprehensive nature of Business Analytics (BA) informs the diverse perceptions of BA among stakeholders. Each intellectual discipline that comprises Business Analytics also comes with its priorities and areas of specialization. For example, an individual with statistical experience is likely to focus on mathematical rigor and has the potential to draw conclusions from data. An individual with an information systems concentration may be more interested in data manipulation, system design, and utilizing tools to support analytics. Individuals with experience in management science tend to focus most on decision support and optimization models. Computer science students emphasize the importance of algorithms and programming experience.

Since Business Analytics is perceived in diverse ways across various disciplinary backgrounds, students are typically exposed to different aspects of the discipline depending on their faculty members' areas of specialization and how their programs are organized. Their teaching practices and pedagogy may vary significantly as well. Additionally, what students expect from their learning experience may vary. Some

are geared toward the application of technical tools, some toward strategic thinking, and others toward statistical analysis.

Owing to such variability, it becomes challenging to develop a single, uniform conceptualization of what Business Analytics is all about, as different academic departments and faculty members tend to emphasize the parts of the field they believe are most crucial. This belief naturally leads to differences in how the subject is presented and comprehended, both in the classroom and in academic discussions more broadly.

2.2. Student Perceptions of Data-Related Disciplines: Existing Evidence

Research on how students view data-related subjects, even if not directly about Business Analytics, still offers helpful insights. It shows how students build their understanding of complex topics that involve technology and data. Numerous studies have employed qualitative or mixed-methods approaches to investigate students' opinions in fields such as data science, statistics, and information systems. Several contemporary studies conducted between 2023 and 2025 employed interviews and focus groups to understand how learners experience and respond to new tools, including generative AI such as ChatGPT. (Wamba et al., 2017) These studies found several common themes. They also examined how students utilized these tools, what they believed the tools were intended for, how easy or difficult they found them to use, how helpful they appeared, and how satisfied learners felt overall. (Wamba et al., 2017) The research also highlighted students' attitudes and affective reactions while using these tools.

These investigations revealed key themes, including the perceived purposes of the tools, user experience, usefulness, overall satisfaction, and students' attitudes and reactions. In the Pakistani context, students have shown mixed perceptions towards AI tools like ChatGPT, with concerns about academic integrity and over-reliance on AI, despite recognizing the benefits of AI for learning.(Crawford et al., 2024)

Furthermore, discussions around data analytics education highlight that students from diverse academic backgrounds, particularly those from "non-computational backgrounds," may approach data analytics with different preconceived notions and existing skill sets.(Dalal et al., 2025) The effectiveness of tools designed to assist these students in acquiring data analytics skills, such as LIDA for grammar-agnostic visualizations, underscores that prior exposure and the nature of interaction with specific tools significantly influence how students construct their understanding of analytical fields.(Dalal et al., 2025) This suggests that students' initial encounters with Business Analytics, whether through a course emphasizing mathematical foundations, a workshop focused on specific software tools, or a class centered on programming, will play a crucial role in shaping their perception of what Business Analytics fundamentally entails. The varied entry points and pedagogical emphases can lead to a fragmented understanding, where students prioritize the aspects they are first exposed to or find most immediately applicable.

2.3. Faculty Perspectives and Business Analytics Curriculum Development

The academic discourse surrounding the development and delivery of Business Analytics reveals that faculty members, much like students, hold diverse views on the optimal balance of quantitative foundations, technical skills, and business application within BA programs. This approach is evident in the range of academic journals that publish research relevant to business and management education, information systems education, and statistics and data science education.(Al-Fattal, 2024) These journals, with their distinct focuses (e.g., Journal of Strategic Information Systems for IT strategy, Journal of Statistics and Data Science Education for statistical pedagogy, Academy of Management Learning & Education for management education processes), illustrate the broad academic landscape and the varying disciplinary lenses through which BA is approached.

The observation that different faculty provided different types of research underscores that the academic community itself has not yet reached a unified consensus on the precise pedagogical blueprint for Business Analytics. Faculty members, often aligned with specific departments such as Management, Information Systems, Statistics, or Computer Science, bring their inherent disciplinary biases and research priorities to the BA curriculum. For instance, a faculty member primarily publishing in Information & Management might emphasize the strategic implementation of information systems in business administration (BA). At the same time, one from Computers & Education might focus on the technological tools and their educational applications. This inherent disciplinary and research diversity among faculty members naturally leads to varied teaching emphases and curriculum designs. Students are then exposed to these differing priorities, which can contribute significantly to their mixed reviews or fragmented perceptions of BA. The absence of a universally agreed-upon framework among educators can result in an inconsistent learning experience for students, potentially hindering the development of a comprehensive and integrated understanding of the field. In Pakistan, challenges such as outdated curriculum and poor staff training are noted in the higher education sector, which could further contribute to this lack of a unified vision for emerging fields like Business Analytics.(Gundlack et al., 2025)

2.4. Research Gaps

This study addresses a critical gap in the existing literature by providing an in-depth qualitative exploration of both student and faculty perceptions of Business Analytics within the specific context of Pakistani universities. While prior research has touched upon data analytics education and discussed broad challenges, such as the gap between employer demands and academic programs in related fields, there remains a limited scholarly investigation into the specific qualitative interpretations of BA from the perspectives of those directly involved in its academic ecosystem in Pakistan. Existing studies often rely on quantitative measures of student satisfaction or skill acquisition, or they focus on curriculum design from an institutional viewpoint without delving into the nuanced, lived experiences and subjective understandings of BA. Furthermore, the challenges faced by Pakistani higher education, such as inadequate facilities and a lack of a strong research culture, highlight the need for context-specific research in emerging disciplines.

A qualitative study that incorporates the perspectives of both learners and educators in this regional setting can be highly valuable. It provides in-depth insights that go far beyond what quantitative data alone can reveal, especially in understanding personal experiences and contextual factors.

This kind of investigation helps uncover how people personally interpret and relate to Business Analytics. It also illustrates how their views evolve. These insights are essential for developing more effective teaching methods and creating stronger curricula, particularly in a rapidly changing field like Business Analytics. In a developing country like Pakistan, where the field is still growing, this kind of understanding is even more valuable.

3. RESEARCH METHODOLOGY

3.1. Research Paradigm and Design

This study is constructed on an interpretivist approach. This approach means it views reality as something shaped by people's experiences and perspectives. It focuses on and emphasizes how individuals interpret the world around them. Since the aim is to explore and comprehend different views of Business Analytics, a qualitative research design is the most suitable choice. An exploratory approach was employed to provide a deeper understanding of the variety and complexity of how people think about Business Analytics. (Chatterjee et al., 2023)

Qualitative research helps us not just to understand people's thought processes but also how and why they hold such views about Business Analytics. It goes beyond the surface level to investigate personal meanings, underlying experiences, and individual associations. (Creswell & Creswell, 2018; Sampson, 2012) This approach makes it ideal for uncovering the many ways students and educators understand Business Analytics. (Wamba et al., 2017) Although designing and carrying out qualitative research can sometimes be challenging. It is capable of producing robust and reliable findings when done carefully. (Neuman, 2014)

3.2. Participant Selection and Recruitment

This study used a purposive sampling strategy to select both student and faculty participants. The goal was to include a wide range of views that reflect the different ways Business Analytics (BA) is understood and taught in Pakistani universities.

For student participants, the selection included individuals from different academic levels. This selection involved both undergraduate and postgraduate students. Participants came from a range of disciplines, including business administration, computer science, mathematics, and other related areas. These students were chosen from selected universities across Pakistan. The purpose was to include individuals with different types of exposure to BA. Some students had studied BA in detail, while others had only a basic introduction. This approach also helped to capture differences in academic backgrounds and expectations about what BA includes or should include. The final number of student participants was not predetermined. Instead, interviews were conducted until the responses began to repeat, and no new themes or important ideas emerged. This point is known as theoretical saturation and is commonly used to determine sample size in qualitative research.

For faculty respondents, the same purposive sampling strategy was utilized. The goal was to recruit educators who are directly involved with teaching or developing BA content at their institution. Faculty members themselves were sampled from various academic departments, including Management Sciences, Computer Sciences, Statistics, and Mathematics. It was necessary to invite faculty from different disciplines because various departments approach and educate BA students in different ways. Some are more focused on data and tools, while others are more focused on business decision-making or programming. This variability concerning scholarly training and teaching practices allowed the study to develop a broader understanding of how BA is perceived within the academic environment of Pakistan. By inviting faculty with diverse research agendas and teaching approaches, the study aimed to reflect the diverse thinking and teaching methods that are integral to BA teaching in the country.

3.3. Data Collection: In-Depth Semi-Structured Interviews

To collect primary data, one-to-one semi-structured interviews were conducted among students and faculty members from universities in Pakistan, who were selectively sampled by the research team. The respondents, during their interviews, had space for their experiences and viewpoints to be represented by themselves.

It allows for space to explore emerging themes and gain a deeper understanding of respondents' responses while maintaining the reliability that significant areas, including BA perceptions, are explored comprehensively. Interview questions during interviews were crafted judiciously to elicit detailed narratives concerning respondents' initial reactions towards BA, their developed understanding, perceived core components, necessary expertise (e.g., mathematics, statistics, Excel, Power BI, Python, SQL), and job relevance. "In-depth interviews" are a seasoned qualitative technique for gaining a deep, insider's understanding of perceptions and experiences. Each interview took between 45 and 60 minutes and was audio recorded with the respondents' explicit consent.

3.4. Data Analysis: Thematic Analysis

Interview transcripts were analyzed using thematic analysis, a systematic process for identifying, analyzing, and reporting patterns (themes) within qualitative data. This approach is highly suitable for exploring the rich, descriptive data obtained from semi-structured interviews.(Creswell & Poth, 2018; Saunders et al., 2019) The analytical process involved several iterative steps: familiarization with the data through repeated reading of transcripts; initial coding to identify interesting features across the entire dataset; searching for overarching themes by grouping related codes; reviewing and refining themes to ensure they accurately represented the data; defining and naming the final themes; and finally, producing the comprehensive report. The use of qualitative data analysis software facilitated the organization and management of the large volume of textual data.

3.5. Ensuring Trustworthiness and Rigor

To enhance the trustworthiness and rigor of the study's findings, several strategies commonly employed in qualitative research were implemented.

Triangulation:

Both data triangulation and methodological triangulation were applied. Data triangulation was achieved by collecting perceptions from two distinct groups of participants (students and faculty), providing more comprehensive data and enhancing understanding of the phenomenon from multiple viewpoints. This approach enabled the cross-validation of emerging themes, providing a richer and more holistic understanding of the perceptual landscape of Business Analytics.

Methodological Triangulation:

Data collection during this study was accomplished through interviews. Although it included no more than one qualitative method at a time, it still employed a comprehensive and thoughtful approach. By speaking with various groups of students and scholars, it was possible to gain different perspectives. It helped to make the findings more credible and reliable.

Member Checking:

To ensure that participants understood their perceptions had been accurately captured, some students and instructors had their participation summarized and asked to review it. They also reviewed the principal ideas developed from their interviews as an outcome. That gave them the chance to say if something was left out or misunderstood. Their feedback helped add accuracy and integrity to the research.

Peer Debriefing

It was common for the research team to gather and discuss the data. These regular meetings gave each individual a chance to connect their thinking, ask questions, and present alternative ways with which to encompass the findings. It was one way of checking each other's thinking and staying open to different perceptions. This external checking served to provide more credibility and reliability to the findings.

Throughout the study itself and the research procedure, the group endeavored to remain aware of their own beliefs, ideas, and potential prejudices. They remained mindful of how their own beliefs or experiences might have influenced their perception of the results. Ongoing self-appraisal ensured the study remained as fair and unbiased as possible.

Table 1: Qualitative Research Design and Trustworthiness Strategies

Methodological Component	Description/Details	Rationale/Purpose
Research Design	Exploratory Qualitative Study	To capture rich, nuanced perceptions and explore underlying meanings.
Participant Groups	University Students & Faculty Members (Pakistan)	To ensure diverse viewpoints and compare perceptions across key stakeholders within the local context.
Data Collection Method	Semi-structured Interviews	To allow flexibility for emergent themes while covering key areas; capture in-depth qualitative insights.
Data Analysis Method	Thematic Analysis	To systematically identify, analyze, and report patterns (themes) within descriptive data.
Triangulation Type	Data Triangulation (Students & Faculty)	To provide more comprehensive data, enhance understanding, and improve validity/reliability.

Trustworthiness Strategy 1	Member Checking	To ensure accuracy and resonance of findings with participants' experiences.
Trustworthiness Strategy 2	Peer Debriefing	To enhance credibility and confirmability through external review of interpretations.
Trustworthiness Strategy 3	Reflexivity	To acknowledge and minimize researcher bias, enhancing objectivity.

4. FINDINGS

4.1. Student Perceptions of Business Analytics: A Spectrum of Understandings

Interviews with students showed a wide range of ideas about what Business Analytics means. This variety of views matches the mixed reviews highlighted earlier in the problem statement. These perceptions often stem from their prior academic exposure, initial program descriptions, or perceived industry demands. The findings are categorized into four primary themes, as detailed in Table 2.

Theme 1: Mathematics and Statistics as the Core.

A significant proportion of students perceived Business Analytics as fundamentally rooted in quantitative methods, statistical modeling, and mathematical principles. This perspective often emphasized the theoretical underpinnings necessary for rigorous data analysis. For these students, BA was synonymous with advanced statistical concepts, hypothesis testing, and the application of mathematical algorithms to business problems. One student articulated this view, stating, "When I hear Business Analytics, I immediately think of regression models, probability distributions, and the statistical tests we learned in our quantitative methods courses. It feels like applied statistics for business."

Theme 2: Tool-Centric and Application-Oriented.

Another clear group of students viewed Business Analytics primarily as the application of practical software tools. Their understanding focused on how these tools are used in real-world business situations. Many students discussed platforms such as Microsoft Excel for handling data, as well as Power BI or Tableau for creating visuals and dashboards. For these students, knowing how to use these tools was at

the core of what they believed Business Analytics is about. They valued how simple, hands-on, and functional these tools were in real business settings. Many felt that being able to turn raw data into clear visuals or easy-to-understand reports was a key skill. They saw these tools not just as software but as a way to help decision-makers see the bigger picture and make more intelligent choices. This view showed a strong focus on direct application. It reflected a practical mindset, where using the right tools was seen as the main way to turn data into action.

Theme 3: Programming and Data Engineering Focus.

Some students thought that business analytics was very technical. For them, it mainly involved managing data in the background and writing code. They referred to using Python, R, and SQL as programming languages. They focused on building models, managing databases, and cleansing data. This perspective firmly holds that business analysis (BA) is closely linked to data science. However, it focuses on solving business problems. They were astonished by the method of converting raw data into predictions and insights through code. One student explained, "I think the main programming component of business analytics is writing Python scripts to clean data, create predictive models, and automate procedures." SQL is required to obtain the data initially. Where those instruments came from, these students believed that real value in BA comes from knowing how to handle data at a deeper level. For them, it was less about using tools like dashboards and more about building the systems that power those tools.

Theme 4: Business Context and Problem-Solving

A bunch of students didn't focus much on the technical side of Business Analytics. Instead, they saw it as a way to solve real business problems. For them, BA was not just about using tools; it was about understanding the underlying principles that drive them. It was about using data to make smart business decisions. They discussed how BA could help companies enhance performance, better understand their customers, or stay ahead of the competition. These students believed that the first step in business analysis (BA) is to understand the business problem. After that, they choose the correct data and tools to find a solution. One student explained it clearly: "Business Analytics is about understanding a business problem first, then using data and whatever tools are necessary to find a solution that helps the company make better decisions. It's problem-driven, not tool-driven." For this group, business knowledge was just as necessary as technical skills. They believed that BA should focus on real-world impact rather than just learning software or writing code.

The different ways students think about Business Analytics are more than just personal opinions. They show a real challenge for course designers. If students enter the same program with very different ideas, it becomes hard to meet everyone's expectations. Teachers may need to spend extra time explaining what BA entails and how it relates to various careers. It also highlights cases where universities need to explain their BA programs more clearly and comprehensively. Students should know what they will learn

and where those skills can take them. If this is not clear, students might feel confused or disappointed. Their expectations may not align with the content, and this can impact their level of engagement in class.

Table 2: Typology of Student Perceptions of Business Analytics

Perception Category	Description	Illustrative Student Quotes
Mathematics/Statistics-Centric	Focus on quantitative methods, statistical modeling, and theoretical principles.	"When I hear Business Analytics, I immediately think of regression models, probability distributions, and the statistical tests we learned in our quantitative methods courses. It feels like applied statistics for business."
Tool-Centric and Application-Oriented	Emphasis on practical software tools like Excel, Power BI, Tableau, and dashboarding for data visualization and reporting.	"Business Analytics, to me, is all about creating insightful dashboards in Power BI and using Excel effectively to manage and present data. It's about making data understandable for decision-makers."
Programming and Data Engineering Focus	Association with programming languages (Python, R, SQL) for data manipulation, machine learning, and algorithm development.	"I see Business Analytics as primarily programming—writing Python scripts to clean data, build predictive models, and automate processes. SQL is essential for getting the data in the first place."
Business Context and Problem-Solving	Focus on applying analytical skills to solve real-world	"Business Analytics is about understanding a business problem first, then using data

	business problems and inform strategic decisions.	and whatever tools are necessary to find a solution that helps the company make better decisions. It's problem-driven, not tool-driven."

Table 2: Typology of Student Perceptions of Business Analytics

4.2. Faculty Perspectives on Business Analytics Education: Diverse Pedagogical Philosophies

Interviews with faculty members involved in Business Analytics education revealed a range of pedagogical philosophies and conceptualizations of the field, consistent with the observation that "different faculty provided different type of research." These differing views often reflect their disciplinary backgrounds and areas of research specialization. Four key themes emerged from the faculty interviews, as summarized in Table 3.

Theme 1: Foundational Quantitative Rigor.

Some faculty members strongly emphasized the necessity of a robust grounding in mathematics, statistics, and econometric principles as essential for a deep and proper analytical understanding. They advocated for curricula that prioritize theoretical coursework, believing that a strong quantitative foundation enables students to adapt to new tools and techniques throughout their careers. One professor articulated, "Students must first master the underlying statistical theory. Without that, they're just pushing buttons on software without truly understanding the implications of their analyses."

Theme 2: Applied Skills and Industry Relevance.

Another group of faculty prioritized hands-on experience with industry-standard tools and real-world case studies. Their philosophy is centered on producing graduates who are immediately employable and capable of applying BA techniques in practical settings. This perspective aligns with the need for practical applications in health informatics education, which often translates to other data-driven fields.3 A faculty member noted, "Our goal is to prepare students for the job market. That means extensive training in Power BI, Tableau, and practical projects that mirror what they'll face in industry."

Theme 3: Computational and Programming Proficiency.

A third distinct group of faculty championed the importance of programming skills (e.g., Python, SQL) for advanced analytics, complex data manipulation, and the development of custom analytical

solutions. They viewed these skills as the foundation for driving innovation and solving complex, large-scale data problems. For them, learning to code wasn't just helpful—it was essential. One faculty member put it this way: "True analytical power comes from coding. Python and SQL are not just tools; they are the languages of modern data analysis, enabling far more sophisticated insights than off-the-shelf software."

Theme 4: Interdisciplinary Integration and Business Acumen.

Some faculty members felt that Business Analytics could not be just a technical program. They felt that students should understand how businesses work and how to communicate results effectively. They felt that just being data-savvy was not enough. They need to know how to take that data, apply it to practical business problems, and communicate it to businesspeople who are not technologically proficient.

These professors endeavored to educate students to think strategically. They wanted students to connect their data skills with business problems. One such professor put it this way: "Business Analytics is not just numbers; its business problems solving. The students should understand the business area perfectly and possess the talent of persuasively convincing their non-technical stakeholders with their claims."

This viewpoint identifies the importance of balance. It's not just studying software or programming. It's about learning how to frame the right questions, make informed choices, and communicate ideas effectively. The interviews, too, revealed that even the faculty members themselves had diverse views on how Business Analytics should be learned. Some stressed technical competencies such as programming and tools. Some stressed business thinking, solving problems, and communication. These differences reflect the departments they represent, as each department places more emphasis on different facets of the discipline. Because of this, students can have very different learning journeys depending on who teaches them and where. One student may receive extensive hands-on training in software, while another may focus more on business use cases or strategy. This makes it harder for students to see the complete picture of what Business Analytics involves. Some key areas might be missed.

This shows a clear need for better coordination between departments. When there is a shared approach to teaching BA, students can develop a more balanced and comprehensive set of skills. This would help them feel more prepared for real-world jobs, where they need to combine both technical and business thinking to solve problems effectively.

Table 3: Divergent Faculty Perspectives on Business Analytics Curriculum

Perspective Category	Description	Illustrative Faculty Quotes
Foundational Quantitative Rigor	Emphasis on strong grounding in mathematics, statistics, and econometric principles.	"Students must first master the underlying statistical theory. Without that, they're just pushing buttons on software without truly understanding the implications of their analyses."
Applied Skills & Industry Relevance	Prioritization of hands-on experience with industry-standard tools and real-world case studies for immediate employability.	"Our goal is to prepare students for the job market. That means extensive training in Power BI, Tableau, and practical projects that mirror what they'll face in industry."
Computational Proficiency	Championing programming skills (Python, SQL) for advanced analytics, data manipulation, and automation.	"True analytical power comes from coding. Python and SQL are not just tools; they are the languages of modern data analysis, enabling far more sophisticated insights than off-the-shelf software."
Interdisciplinary Integration and Business Acumen	Advocacy for combining technical skills with strong	"Business Analytics isn't just about numbers; it's about

	business understanding and communication abilities to translate insights into strategy.	solving business problems. Students need to understand the business context deeply and be able to communicate their findings persuasively to non-technical stakeholders."

4.3. Curriculum Variation Across Pakistani Universities

A notable finding from this study, particularly relevant to the Pakistani higher education landscape, is the significant variation in the content and focus of Business Analytics programs offered by different universities. Unlike more established disciplines where curricula tend to be largely standardized, BA programs in Pakistan exhibit considerable divergence. For instance, some programs emphasize a blend of business theory, data analytics skills, practical knowledge, and professional skills, preparing students for roles in management, HRM, finance, operations, and marketing, with courses ranging from "Business Statistics" and "Programming Fundamentals" to "Machine Learning for Business Analytics" and "Legal and Ethical Issues in Business Analytics" .(AACSB International, 2025) Other programs include "Introduction to Computer Applications," "Business Mathematics," "Computer Programming," and "Business Analytics (Modelling & Forecasting)," alongside core business subjects.(Al-Eisawi, 2025) In contrast, some institutions structure their programs with core business disciplines combined with computer science and data analysis, including "Fundamentals of Data Science," "Data Warehousing and Mining," and "Introduction to Artificial Intelligence," with specializations in Financial, HR, Marketing, and Supply Chain Analytics.18 Still others cover core business principles, statistical methods, data mining, and visualization techniques, with courses like "Analytics Programming (Python)" and "Deep Learning for Business Intelligence" .(Al-Eisawi, 2025)

This observed disparity suggests that Pakistani universities are not yet aligned regarding the comprehensive scope and essential components of a Business Analytics degree. This lack of standardization is likely attributable to the relative novelty of Business Analytics as a distinct academic discipline in the region. While other, more traditional courses have well-established content guidelines and faculty expertise, BA is still an evolving field, leading institutions and faculty to interpret and implement it based on their existing strengths, available resources, and individual academic backgrounds. This situation presents both a challenge for ensuring consistent quality and a unique opportunity for institutions to innovate and tailor programs to specific industry needs or regional strengths. The rapid growth in student enrollment in Pakistani universities, coupled with challenges like outdated curricula and a need for faculty development, further underscores the dynamic and somewhat uncoordinated evolution of new programs like Business Analytics.

4.4. Convergence and Divergence: Bridging the Perceptual Gaps

An analysis of the findings reveals both areas of convergence and significant divergences between student and faculty perceptions of Business Analytics.

Areas of Convergence:

Both students and faculty generally agreed on the fundamental value of data-driven decision-making and the overarching importance of analytical skills in today's business environment. There was a shared understanding that BA is crucial for extracting value from data and informing strategic choices. Most participants from both groups acknowledged that BA involves some level of quantitative understanding, technical tool usage, and application to business problems, even if their emphasis on each component varied.

Areas of Divergence

The interviews revealed apparent differences in how students and faculty members view the primary focus of Business Analytics. Many students placed substantial importance on learning practical tools and programming skills. They believed that proficiency in Excel, Power BI, Python, or SQL would lead to employment. Hands-on experience with these tools was essential for them during their time at school.

On the other hand, other faculty members stressed the teaching of the theory of Business Analytics more. They believed that learning the fundamentals, such as statistics and mathematics, was crucial in the long run. For these professors, learning the tools was useful but yet not enough. They sought students with profound, adaptive thinking that would enable them to transition between various tools and problems over time.

Diversity in emphasis causes difficulty. When students enroll in a course with the expectation of receiving instruction that is tool-based, only to receive theory-based instruction instead, they become frustrated or disinterested. What they expect does not meet what they are learning in their course. This approach affects how much they absorb, how interested they stay, and how the program benefits them when they get their first job.

The misalignment also implies that there should be increased communication. When the voices of students, faculty, and industry are not aligned, the program itself may struggle to prepare students adequately. Without regular discussion and input from everyone, such misalignments might persist. In the long run, this might lead to lesser satisfaction among students and graduates who are not fully equipped for the workplace. It demonstrates the importance of business schools being agile, listening to their

students, and constantly adapting their approach. A robust program has solid theoretical aspects combined with practical tools and remains responsive to the demands of the global world.

5.1. Interpreting the Perceptual Landscape

It finds that how persons at Pakistani universities view Business Analytics is highly complicated and, at times, disconnected. Faculty members and students often have different understandings of what BA stands for. This approach supports the idea that fields like BA, especially those that are still evolving and changing, are open to multiple interpretations. These views are shaped by each person's academic background, their previous learning, and the specific parts of BA they've been exposed to.[1] For example, the roots of Business Analytics in areas such as information systems and process analytics have made the field broad and complex. This history helps explain why it's hard to agree on a single definition of BA.[1]

As the field continues to grow and incorporate newer technologies, such as Artificial Intelligence, it becomes even more challenging to define. Different people focus on other parts of these latest developments, which adds to the range of views. [4] Using a qualitative approach in this study helped bring out these personal perspectives. Rather than relying solely on numbers or survey results, this research was able to delve deeper into how people think and talk about BA.

The study also found that Business Analytics is being taught in a very different manner across universities in Pakistan. Institutions are still figuring out the best way to teach BA in a world where the field is changing fast, both globally and locally.

5.2. Implications for Business Analytics Curriculum Design and Pedagogy in Pakistan

The differences in how students and faculty members comprehend Business Analytics, along with the curriculum gaps found across universities, have significant consequences for how Business Analytics (BA) is taught in Pakistan. The findings indicate that a single, standard approach will not meet the needs of all students or faculty. A "one-size-fits-all" model is unlikely to work, especially when expectations and teaching pedagogies vary drastically.

Instead, programs should clearly state their focus from the outset. This will help students understand what to expect and make better decisions about their courses. When expectations are clear, students are more likely to remain engaged and satisfied with their learning. Curriculum designers should aim for balance. This approach means combining basic skills in math and statistics with hands-on training in tools and programming. But it shouldn't stop there. The business context must also be at the center. Students need to learn not just how to use analytics but also why it matters for solving real business problems.

Teaching methods should support this balance. Project-based learning, real-life case studies, and collaboration across different fields can help students see how Business Analytics works in practice. These approaches make learning more relevant and engaging.It is also worth exploring tools that make Business Analytics more approachable for students from non-technical backgrounds. For example, platforms like LIDA could help students who are less familiar with coding still build strong analytical thinking. [11] This makes the field more inclusive and opens it up to a broader group of learners.

To make all this work, universities will need to tackle bigger issues as well—such as updating outdated course content and providing proper training for faculty. These are long-standing problems in the broader higher education system in Pakistan, but addressing them will be crucial to enhancing the way Bachelor of Arts (BA) is taught.[17] By acknowledging these challenges and adapting to the diverse needs of students, universities can create BA programs that are clear, relevant, and well-rounded, helping prepare students for both current demands and future opportunities.

5.3. Addressing the Faculty–Student Disconnect and Curriculum Inconsistency

It revealed an apparent disconnection between students and faculty's conceptualizations of Business Analytics. While students tend to focus on work-ready hands-on tools and hands-on skills, faculty tend to emphasize long-term thinking and theory. Combined with variability in curricula design at universities in Pakistan, the disconnection is a serious challenge. It could, if left uncorrected, lead to misaligned assumptions and a lack of engagement among students and graduates who are neither competent nor prepared for the intensity of the business environment. [3] These findings are consistent with the necessity for business school-level discussion, collaboration, and rectifications.

As one initial step toward bridging that gap, universities could start by having faculty development workshops that draw together faculty members from different departments. These would not only provide alignments of teaching approaches but engender cross-departmental collaboration toward shared understandings of what Business Analytics learning should achieve. When faculties collaborate across disciplinary boundaries, it helps create more consistent and coherent learning experiences for students.

It is equally important to listen to students. Simple tools, such as surveys, course evaluations, or small discussion groups, yield valuable information about what students expect and how they experience the curriculum. Leave space for such conversations and help instructors adapt course content and teaching approaches to greater alignment with learners' needs—without compromising scholarly quality.

Another critical step is forming tighter links with practitioners in the industries. When university programs are linked with employers, they are better equipped with relevant and marketable skills that can be incorporated into their curricula. It might help eradicate the prevailing disconnect between learning in

school classrooms and job requirements, such that graduates possess both theoretical knowledge and practical proficiency. [3]

Long-term, national-level collaboration could be even more beneficial. A shared model for Business Analytics programs at the Pakistani university level could provide standard guidelines for essential competencies while also allowing for individuality and creativity. That would provide consistency in quality at the program level, accommodating each institution's unique strengths and needs.

While Business Analytics is still an emerging field within Pakistan's universities, such efforts are necessary and well-timed. Jointly–students, faculties, and institutions–Pakistan's universities have the potential to create stronger, transparent, and future-looking BA programs that meaningfully address the real needs of students and businesses.

6.1. Summary of Contributions

It presents new qualitative insight into what Business Analytics is among academics and students at Pakistani universities. In a systematic and thorough qualitative manner, it has documented the range of ways in which people understand BA as a math- and statistics-centered area, a toolkit-based competency, programming, or even business problem-solving.

One of the valuable contributions of this research is the uncovering of the varied BA programs at various universities. These differences likely reflect the fact that Business Analytics is still a relatively new subject in Pakistan's academic landscape.

The findings also highlight the complexity and evolution of the field—and how personal experiences, academic backgrounds, and teaching styles shape individuals' understanding of it. By mapping these differences, the study offers valuable insights for improving curriculum design, making teaching approaches more consistent, and addressing the gaps between what students expect and what faculty teach. This approach can help create stronger, more aligned Business Analytics education in Pakistan.

6.2. Limitations

Although this study offers in-depth and meaningful insights, several limitations should be considered. Since the participants were drawn from a select number of Pakistani universities, the findings may not be representative of all institutions or contexts across the country. Also, the study is based on what participants shared in interviews, which can sometimes be influenced by memory lapses or the desire to give answers that sound more socially acceptable. It may have shaped how some responses were expressed.

Another limitation is that the study did not include perspectives from industry professionals. Including employer views in future research could help demonstrate whether the skills taught in universities align with what companies look for in graduates. [3]

6.3. Directions for Future Research

This study opens many opportunities for future research. One next step could be to employ mixed-methods research, combining both qualitative and quantitative data. To explore how common the different perceptions of Business Analytics are. These studies could also examine how these views relate to factors such as student performance, satisfaction with their program, or their career paths after graduation. Another practical approach would be to conduct long-term studies that follow students throughout their academic journey. This approach could help illustrate how their understanding of BA evolves and how significantly those changes are influenced by the courses they take and the practical experiences they gain.

It would similarly be valuable to compare Business Analytics programs across different Pakistani universities. The approach could reveal how program structure, pedagogical methods, or organizational culture influence the delivery and perception of Business Analytics (BA). Future research could also explore individual teaching methods or approaches, such as project-based learning, case studies with practical applications, or increased business involvement. Researchers could assess how such approaches reduce the distance between faculty and students' expectations.

Finally, we need more qualitative research on how the faculty members collaborate and how BA programs are aligned at the departmental level. It could give further insight into how universities might have a more collective and compelling vision for Business Analytics education in Pakistan.

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