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JESSE H. JONES SCHOOL *of* BUSINESS

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Theme:
Informatics: Role of Information Technology in Higher Education for Business Disciplines and Beyond

Mayur Desai, Conference Chair
Professor of MIS

Conference Abstracts

Keynote Speakers

Brad Jensen
Executive Manager,
Accenture, Inc.

Topic: Informatics: The Gulf Between Skills Preparation and Industry Requirements

Andrew Moore
Chief Operating Officer

Topic: The Democratization of BI: Why BI is the New Email

Luis Villareal, CIO, Texas Southern University
Chief Information Officer

Topic: Fear and Trembling: Information Technology From the Outside In.

Rethinking Skill Development for Business Majors

Chynette Nealy
Professor of Business Administration
University of Houston Downtown
Marilyn Davies College of Business
Department of General Business, Marketing & Supply Chain Management
320 North Main, Suite B420
Houston, Texas 77002
Telephone: 713-222-5367
Email: nealyc@uhd.edu

Corresponding Author: Chynette Nealy

Topic Area: business skills, pedagogy, technology

Purpose

This proposal examines the impact of integrating technology into our course content and pedagogical strategies. Practitioners suggest that business schools should "rethink" pedagogical approaches focusing on skill development rather than content assessment Moshiri & Cardon, 2014; AACSB, 2011; Hartman & McCambridge, 2011; Hoover, et al., 2010; Yu, 2010). It is reasonable to speculate whether examining this suggestion would provide useful data which might improve learner outcomes in terms of expected industry performance. For example, most General Business programs are designed for its majors to receive a broad overview of fundamental theories and procedures of basic business functions. This interdisciplinary approach is designed to provide majors with core business applications that will enable professional employment opportunities within various industry sectors. Graduates with this degree should be able to utilize applicable technological skills required by industry.

So, what happens when there is a perception that business majors lack applicable technological skills? Should business schools mirror industry and conduct an assessment of core skills or content? Can findings be used to justify or develop curriculum material for development of skills required by industry? Should business majors be expected to mirror industry in the development of skills? These were some of the questions used to examine how and/or if assessment is beneficial to close the gap-*theory* to *practice* with respect to skills development of business majors.

Methodology

The proposed presentation will discuss Phase Two of a pilot study. Phase One of the study involved development of a survey which examined student perceptions of their incoming technology skills via comparison of their perception given performance on a Blackboard assessment prior to taking an online course. With regard to technological readiness, students' perceptions mirrored industry perceptions as not being prepared. The perceptions of potential employees should align with employers' standards. Thus, Phase Two of the study sought to identify from selected industry representatives those technological skills most needed in their organizations.

Implications

The author proposes to discuss findings from both phases of the study. The author aims to discuss these findings from a suggested actions perspective by sharing strategies for reality-based practices. These strategies might be useful for rethinking pedagogical approaches focusing skill development rather than content assessment. Findings will contribute to extant literature related to bridging the gap between *theory* and *practice* in terms of helping business majors develop and enhance technological knowledge and skills.

Abbreviated References

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Bio

Chynette Nealy is a professor of business administration at the University of Houston Downtown. In her work, she is directly concerned with teaching and researching skills that can be applied to bridging the gap between theory and practice. Address correspondence to Chynette Nealy, Department of General Business, Marketing & Supply Chain Management, 320 North Main, Suite B420, Houston, Texas 77002, Telephone: 713-222-5367, Email: nealyc@uhd.edu

Using Crime Data as an Instructional Tool to Illustrate Business Intelligence

By:
Dr. Ruth Robbins, Professor – Management Information Systems
University of Houston Downtown
&
Professor Syed Ali, Lecturer – Management Information Systems
University of Houston Downtown
&
Dr. William Willette, Adjunct Professor – Management Information Systems,
University of Houston Downtown.

In the Management Information Systems discipline classroom, we are encouraged to provide a student focused learning environment that focuses on utilizing reality based instruction tools. Examples should be used which incorporate concepts that students can readily comprehend. With this in mind, the City of Houston Uniform Crime Report Statistics data is being utilized in a College of Business. In this presentation, we will offer examples which provide illustrations showing how this ever changing data provides an instructional landscape that students can readily recognize. Varying opportunities will be shown which provide reality based instruction. The presentation will explain how spreadsheet and database crime data can be used to demonstrate concepts in an assortment of courses taught in the MIS discipline such as the Management of Information Systems course, Microcomputer Applications course, Introduction to Database course, and the Business Intelligence course.

In Search of Oil and Gas Using Fracking: A Case Study
Author: Sarmistha R. Majumdar
Texas Southern University

Abstract
Hydraulic fracturing or fracking is an unconventional method of drilling for oil and natural gas. It uses both vertical and horizontal drilling methods to extract oil and natural gas from the deep seated shale rocks that have been found in parts of Texas and other states in the nation. When fracking started in the early 2000s, little was known about its environmental impacts. As a result, fracking has been exempted from many federal regulations. Under the concept of environmental federalism, much of the responsibility to regulate fracking has been transferred to the states. The states exert greater control on fracking now. This arrangement has made it easier for the lobbyists to influence the state government. The lobbyists have tried to prevent the introduction of stringent regulations and resist amendments to existing ones. With the gradual capture of the state's regulatory agency by oil and gas industry's lobbyists, there exists a state bias towards oil and gas production and less attention to the individuals' demands for protection from the negative externalities of fracking.

The state's regulatory agency and local governments' lackadaisical attitudes towards the enforcement of regulations and discontent among individuals over the negative externalities of fracking, have led to opposition against fracking in those communities located at close proximity to fracking sites. Since fracking related opposition vary from one community to another, the case of a community will be discussed with a focus on a problem that is unique to fracking. In the case study, the state government and the oil and gas industry's response would also be discussed. A qualitative methodology will be used to obtain information. The utility of the study lies in creation of greater awareness of the impacts of fracking on people's lives and the need to balance private interests with public ones in the state's regulatory policy.

Impact of Hurricane Harvey Flooding in Texas Using Geospatial Informatics

Maruthi Sridhar Balaji Bhaskar,
Department of Environmental and Interdisciplinary Sciences,
Texas Southern University, Houston, TX.

Abstract

Urban flooding is a hazard that causes major destruction and loss of life. High intense precipitation events have increased significantly in Houston resulting in frequent river and bayou flooding. A category 4, Hurricane Harvey has made landfall on South Texas resulting in heavy precipitation from Aug 25 to 29 of 2017. About 1 trillion gallons of water fell across Harris County over a 4-day period. This amount of water covers Harris County's 1,800 square miles with an average of 33 inches of water. The long rain event resulted in an average 40inch rainfall across the area as recorded in several rain gauges and the maximum rainfall of 49.6 inches was recorded near Clear Creek. Historically many of the recent storm events such as Allison, Rita and Ike have caused several billion dollars in losses for the Houston-Galveston Region. The objectives of our study are to 1) Process the Geographic Information System (GIS) and satellite data from the pre and post Hurricane Harvey event in Houston, Texas and 2) Analyze the satellite imagery to map the nature and pattern of the flooding in Houston-Galveston Region. The GIS data of the study area was downloaded and processed from the various publicly available resources such as Houston Galveston Area Council (HGAC), Texas Commission of Environmental Quality (TCEQ) and Texas Natural Resource Information Systems (TNRIS). The satellite data collected soon after the Harvey flooding event was downloaded and processed using the ERDAS image processing software. The flood plain areas surrounding the Brazos River, Buffalo Bayou and the Addicks Barker reservoirs showed severe inundation. The different watershed areas affected by the catastrophic flooding in the wake of Hurricane Harvey were mapped and compared with the pre flooding event.

Informatics-Role of Information Systems Technology in Higher Education for Business Disciplines and Beyond

Melissa Baldo
Lamar University

Nestled in the Transylvania Alps you won't find a clan of vampires but you will find the town of Ramnicu Valcea in Romania. This particular town has a nickname among law enforcement: "Hackerville" because it is the capital of cybercrime.[1] Cybercrime is a billion-dollar industry and ever-growing problem in the global business community.[2] With each passing day the list of massive data security breaches of businesses grows longer. Breaches by trusted names like Yahoo, Target and Home Depot add to the growing uneasiness of the American public with the security of their information.   Recently the S.E.C. announced a breach of their E.D.G.A.R. system which places trillions of dollars at stake, and Equifax, one of the Big Three consumer credit reporting agencies announced a major data breach which could compromise the social security numbers, drivers licenses and credit cards of millions of Americans. Small businesses are not immune.   A recent study by the National Small Business Association reports that 44% of small businesses were victims of cybercrime in 2013.[3] That number is likely to grow.

Many Universities around the globe have followed the lead of Germany and offer degree programs in Informatics. According to the Indiana University School of Informatics and Computing, informatics is the study and application of information technology to the arts, science and professions, and to its use in organizations and society at large." [4] They further state that it uses computing to solve the big problems: privacy, security, healthcare, education, poverty, and challenges in our environment.[5] Germany has sixty Universities that offer this discipline compared with just 10 Universities in the United States.[6]   The degree program is interdisciplinary in nature combining several areas of study and expertise into one.

Business Informatics integrates computer science and business administration. Rather than viewing a company as a whole it involves learning and gathering information about each of its parts. The idea being that those trained in business informatics can act as a liaison to connect management with the information side of a company. It is the premise of this paper that in order to remain competitive and to keep data secure companies must become more proficient at applying business informatics. The importance of understanding how confidential information flows throughout an organization and determining the risk of leakage cannot be overstated. [7]   In order to accomplish this critical task people must be educated and trained in this burgeoning field of business informatics.

This paper will (1) examine the critical problem of cyber security and data breaches in the business community (2) explore how the application of Business Informatics in the cybersecurity field can provide greater protection for companies from the global hacking community and (3) compare the specific Informatics degree programs at various Universities and evaluate this growing trend.

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Incorporation of Information Technologies in the Development of Higher Education for Accounting Professionals
Thomas A. Jackson, CPA and Don Holmes, CPA
University of Houston Downtown

Author Note
Thomas Jackson is now at the Department of Accounting and International Business, Marilyn Davies College of Business, University of Houston Downtown.
Don Holmes is now at the Department of Accounting and International Business, Marilyn Davies College of Business, University of Houston Downtown.
Correspondence concerning this presentation should be addressed to Thomas A. Jackson, CPA, Department of Accounting and International Business, Marilyn Davies College of Business, University of Houston Downtown, One Main Street – Suite 310L, Houston, TX 77002-1001.
Contact: jacksonth@uhd.edu or holmesd@uhd.edu

Abstract

Is higher education preparing work-ready professionals for accounting careers? The answer to that question and approaches currently employed by three countries is the core of this report. For decades it has been obvious that information technology (IT) is having dramatic impact on the accounting profession. Virtually every aspect has been affected from financial reporting, auditing, tax, forensic accounting, consulting and internal control. Further, we have just begun to address the critical areas of cyber-security and Big Data. Yet preparation of the next generation of accountants by those of us in higher education and public accounting remains imbedded in the "stone-age" of information technology from the viewpoint of those individuals we purport to prepare for success.

The issues cannot be successfully addressed by simply adding more courses to the curriculum. Students already face a daunting course load to achieve their goal of being adequately prepared for work-force entry. No, an additional course or courses will not get the job done. Studies addressed here demonstrate that only by enriching the current curriculum in concert with the profession and textbook authors and their publishers can the issue of proper preparation be successfully addressed. This presentation will focus only on the role of the education community. The role of our partners in this process constitute topics for future presentations.

The current shortcomings are amplified by the relentless march toward globalization and the profession's commitment to accounting standards that are adaptable to the resulting new

realities. To address them effectively will require looking beyond the borders of the United States into the broader perspective of the global accounting higher education community. To that end we will examine data and approaches from Greece, Saudi Arabia and Australia in addition to those used domestically. After reflecting on the information presented, you will see that we are not alone in facing this dilemma and that there does appear to be successful approach in the process of development.

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Blockchain: the next major disruptor in accounting and finance

K. Raghavan

Texas Southern University

Blockchain could be the next innovation and disruptive technology in finance with the potential to force organizations in many sectors to change business models, financial processes, tax and legal responsibilities. It offers major opportunities for organizations to achieve improved cybersecurity, faster transaction processing, lower costs, and bypassing intermediaries. It can revolutionize the way taxes are calculated and collected. What is Blockchain? It is a type of database that holds data and programs in heavily-encrypted 'blocks' of individual transactions and results of executable files, programs and code. The blocks can only be added and cannot be edited, with each block linked to the previous one making a block chain. It uses a digital ledger to share and track information related to contracts and transactions, and the records are permanent, verifiable and secure. Although it is mostly recognized as the technology behind the cryptocurrencies such as bitcoin and ethernum, its potential applications are far beyond those limited applications. Some of the applications being considered in the world of finance are in global companies in many financial sectors as given below.

Depository Trust and Clearing Corp (DTCC) which processes financial transactions plans to use it to reduce the cost of warehousing information on the transactions processed, and pass on the savings to customers. DTCC is evaluating the technology for replacing or enhancing the credit default swap (CDS) clearing and settlement infrastructure, and to increase transparency and liquidity in other asset classes including loans and illiquid securities.

Major banking organizations around the globe are developing collaborative models such as R3 to support information sharing and technology development. Audit firms believe that by recording transactions as automated trusted activity among digitally networked peers, the technology can streamline and accelerate business processes, increase cybersecurity and reduce the necessity for trusted intermediaries. It can also open up new credit markets for new classes of lower value assets by reducing transaction costs.

Fund management companies are looking at developing a distributed ledger among a trusted group of intermediaries to facilitate the flow of real-time fund share transactional data to increase transparency and add value to the fund's portfolio manager. A group of intermediaries can cross-verify the status of investors or their customers as "accredited investors" by assigning a digital identification for such investors or to create smart contracts more efficiently.

Tax enforcement agencies can use the technology to track digital transactions recorded in real time, to spot concealment of illegal transactions.

Cross border payments including international remittances are increasingly using the technology to increase speed and decrease costs.

Human resources managers can verify a potential employee's credentials without worrying about independent verification. Sales and marketing departments can transact business with customers without worrying about potential credit losses. However, privacy concerns will need to be addressed first. Diverse industries such as supply-chain management, health care and shipping are reviewing the technology for improving operations. This paper looks at the potential for blockchain to be a major disruptor in the operational processes and financial transactions in the financial sector around the globe.

Spatial Distribution of Heavy Metals in Floodplain Soils of Brays Bayou Watershed

Habibur Howlider and Maruthi Sridhar Balaji Bhaskar
Department of Environmental and Interdisciplinary Sciences,
Texas Southern University, Houston,
Texas 77004, USA

Abstract:

The accumulation of trace metals in floodplain soils is a serious environmental problem that creates a hazard when metals are transferred to water and plants, affecting the environmental and human health. The objectives of this study are to analyze the heavy metal and nutrient concentration in floodplain soils within the Brays Bayou watershed and to map the spatial trends of metal contamination along the bayou. A total of 18 soil samples in triplicates were collected from six different locations along the lower and upper Brays bayou watershed within the Harris County in Summer of 2016. Soil samples was acid digested by following EPA 3051 method with microwave digestion and analyzed with ICP-MS (Inductive Coupled Plasma Mass Spectrometry). The sample were air dried and also analyzed using the handheld X-ray fluorescence (XRF) instrument using handheld X-ray fluorescence (XRF). The results of soil analysis were incorporated into the GIS (Geographic Information Systems) database to visualize the variation of spatial trends among the heavy metal concentration along the flood plains of Brays Bayou using the ESRI Arc GIS 10.3 software. The concentrations of heavy metals like Zn, Cr, Ba, Sr, Mn and S were found to be present in significant amount compared to the other metals while As ranged from 1.73 to 4.13 ppm. Cd and Hg was not detected or in below detection level for any of those soil samples. Pb and Cu concentrations were in medium range. Fe and Ca concentrations were higher throughout all the sample locations. The spatial distribution analysis revealed that there is slight to no increasing trends were observed towards the downstream of Brays Bayou compared to upper stream.

Cloud-Based Learning Tools: Supporting the Invisible Learner (Silent Sufferers) with Socioeconomic Challenges

Lynita Robinson[1] and Jimmy Johnson[2]

Co-Founders, Innovative Segue

"My plan has been to place in the sky, as it were, a great sign-board calling the attention of the world to the fact that the endpoint of education is a matter of serious, solemn and immediate concern for every civilization on the globe." -James Harold

It currently takes humanity two days to generate the same amount of data in which it did for the entire year of 2003. As of 2016, 90% of all data on the internet has been created within the last two years. School systems are implementing a 'Bring Your Own Device' (BYOD) policy to support online learning in classroom environments. Student cohorts are extending beyond traditional physical boundaries and leaning towards international cross-platform learning opportunities. Educators find themselves competing with students on use of academic tools and methods of learning as more free online learning tools are becoming available. Due to fast-paced technology and accelerated curriculums, families are struggling to keep up with the demands of the internet and seeking affordable and secure learning opportunities. Student-Parents tend to endure the most challenges with case study competitions, team projects and inflexible curriculums. Innovative Segue student-family portals will support, mentor, revitalize and develop students with academic and social challenges.

Cloud-Based Student Learning Networks

The "cloud-based classroom" presents opportunities for advanced learning, assessment, cultural diversity and critical thinking. Cloud-based technologies serve as gateways for bridging the gap between social and economic development within disadvantaged communities. The revitalization of communities, support of 'silent sufferers', and first generation students can be pioneered through four key programs- education, skill-set training, therapy and character development.

Silent Sufferers

Silent Sufferers are invisible people to themselves and others. Utilizing cloud-based technologies, these students can be reached indirectly to offer support in a non-threatening manner. Silent Sufferers are students who have experienced trauma and are in need of therapy. Using Innovative Segue's concept will engage and provide academic, therapeutic and social support to build confidence and transform silent sufferers to actively engaged learners who are simultaneously increasing their knowledge and improving their identity of self.

Key Programs

Therapy is the process of pinpointing and resolving the issues that ail traumatized people. An assessment of students will provide information for guided learning activities optimizing students learning capabilities. Skill-set training and character development work closely to help students transition learning into positive action. Supporting community-based initiatives will help provide healthy outlets to provide intern opportunities where students will be able to actively engage in changing the perception of the community. By utilizing students to alter its functionality- changing the components within it, we effectively begin the process.

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Analysis of Water Quality Characteristics of Buffalo Bayou, TX

Naomi Walker, Maruthi Sridhar Balaji Bhaskar, and Djene Keita

Department of Civil Engineering, Texas Southern University, Houston, TX.

Department of Environmental and Interdisciplinary Sciences,

Texas Southern University, Houston, TX.

The Buffalo Bayou has been the main waterway in Houston since before the nineteenth century. Water from Buffalo Bayou was used to cultivate crops, cleanse the body, and to hydrate the life that resided close by, but when the bayou became polluted due to settlement, the bayou was no longer a clean source of water for humans to rely on. The objectives of our research are to identify the nutrient and heavy metal concentrations in the water and soil samples along the Buffalo Bayou. This will help to identify the historical water quality trends in the bayou, and to determine exactly how polluted the bayou has become over the years. Soil and water samples were collected from several sampling locations along the bayou during the summer of 2017. All the sampling locations were identified with a GPS handheld unit. The soil and water samples were immediately brought to the lab and prepared for sample analysis using the ICP-MS (Inductive Couple Plasma Mass Spectrometry) and TCN (Total Carbon Nitrogen) analysis. The chemical concentrations of the water at the upstream sampling locations of Buffalo Bayou were compared with downstream sampling locations, which in turn were compared with historical data that was analyzed for various contaminants to determine the condition of the water over the past several years. Our results from the historical water quality data analysis shows that the chemical characteristics of the bayou water have not changed significantly since the 70's, but the physical characteristics has in fact became more contaminated based on reports of color from the bayou. The total Carbon and Nitrogen analysis of the bayou water collected from the upstream and downstream locations do not show any significant differences in the water quality between the locations. Further research needs to be done at more sampling locations to acknowledge if the contaminant trends remain the same at different spatial locations. This research informs and increases the awareness of the community on the quality of the Buffalo Bayou. This research was primarily supported by the National Science Foundation (NSF) through the Texas Southern University (TSU) under the award numbers HRD-1400962 and HRD-1622993.

GENERATIONS Y AND Z:
ARE EDUCATORS AND INSTITUTIONS OF HIGHER EDUCATION STAYING RELEVANT TO ATTRACT AND EDUCATE THEM?

Mahesh Vanjani, Texas Southern University, vanjanim@tsu.edu

ABSTRACT

Generation Y, sometimes referred to as "Millennials" refers to the cohort of individuals born, roughly, between 1982 and 1994. Generation Z, the latest demographic cohort is generally considered to comprise of those born during the mid-1990s to early 2000s. For institutions of higher education this means that the target market and entering student population for Bachelor's degrees is Generation Z and for Graduate degree programs it is the Millennials. While Generation Z are true "digital natives" both cohorts have advanced technical and multi-tasking skills. They are voracious consumers of technology and use it for education and entertainment. While they share similarities, there are differences that will impact strategies used to attract and educate them. Millennials are more budget conscious. Generation Z is questioning the value of a college degree. Both generations are increasingly relying on information provided by their peers. Educational Institutions and Educators will need to adapt to stay relevant for both these generations of students considering and entering college campuses. Educational institutions will need to revisit their marketing and retention strategies. Educators will have to get creative in leveraging technology to engage, motivate, educate, and, entertain, these generations of students. Each generation has a different set of experiences and values that drive their choices, goals, and, approaches to learning and, their thoughts, perceptions and views about higher education and the value thereof. As educators, we need to step up and adapt to stay relevant for these incoming generations of students.

Keywords: Generation Y, Millennials, Generation Z, Technology, Higher Education

Balancing Privacy and Informatics

Lila Ghemri* Ping Chen Ernst Leiss
Texas Southern University University of Massachusetts Boston University of Houston

Abstract:
The growing pervasiveness of mobile applications, the Internet of Things, and social networks present unprecedented privacy and security challenges. Rarely has information about a lay user's location, activities, habits and interactions, been so easy to track, store and analyze. The purpose of this presentation is to introduce the concept of privacy and discuss technologies that are widely used by non CS professionals and that may present privacy threats. We discuss technologies such as privacy intrusive queries in databases; data mining; location monitoring; the use of watermarking to trace web content; sequencing of an individual's genome; and their impact on an individual's privacy.

A second goal of this presentation is to introduce to the audience several teaching modules that aim at assisting instructors in addressing these themes in courses directed at students with varying backgrounds, in particular privacy in social networks, on the internet, in electronic voting, in mobile apps and in databases. These modules have been developed by the authors as part of an NSF grant, they are freely available and cover a wide range of privacy related topics as well as accompanying student activities.

Lila Ghemri: Corresponding author.

Texas Southern University
3100 Cleburne Avenue
Houston, TX 77004
Tel. 713 313 4381

LUCY A. OJODE, Ph.d, CPA(K)
MAMMO WOLDIE, Ph.d

Abstract

We analyzed the financial performance of student-managed firms against five computer-managed competitors in simulated electronic sensor industries in order to compare the results of human judgment and decision making with the output from the computers.

Introduction

In the summer of 2017 I had the honor of caring for my 9 months old grandchild. During those three months, I watched her learn to crawl, stand, repeat some simple phrases, and learn some basic motor skills. One of the most intriguing observations was watching the child interact with the smartphone. Not surprising, she learned the buttons that produced sounds, images, and of course, she took selfies and 'talked' on the phone whenever it rung. Then the family moved to a new house with a landline phone. One day, I observed her confusion and near panic when the landline phone rung. I realized that she did not know what that was. As I picked the handset and started talking, I noticed her curious glances at me and back to the handset several times before she crawled away from me. She went to tinker with the smartphone instead. Some learning occurred that day. Perhaps she realized that the landline phone was a kind of phone albeit different from the familiar smartphone so she opted for the familiar instead. Alternatively, fascinated, she might have realized she could not imitate whatever grandma was doing talking on that hitherto unknown *thingy* but she could (made a judgement call to) tinker with the familiar smartphone. Either way, it is such connection that compels observation to trigger certain action, the *jump,* that is uniquely human. We sought to assess such *jumps* [or judgement to move] from constructs

familiar to business students, such as *profits,* to [the action of] making complex/varied decisions that result in actual profits.

Judgement is seen as the most critical decision component that is still a human purview and perhaps one of the last frontiers for AI. For decades, proponents of the ultimate imminent AI domination of hitherto human purviews have warned that it is just a matter of time. No wonder Minsky (1968) thought of human mind as mere "computers made of meat." Indeed, computer capabilities have seen such tremendous improvements that it is no longer science fiction but everyday part of life for AI to replace humans in mining, driving, reminding patients of medication times, picking our favorite TV channels, and acting as [Catholic] priests at confessions, etc. However, as tantalizing to business as the idea may be, we believe that total replacement of human with AI, especially in judgement, may be here but not yet. Rather, AI should be seen as augmenting and therefore enhancing human judgement capabilities, by enabling consideration of more data and variables that would otherwise be humanly impossible (Reed, 2017). In exercising judgement, humans can employ AI to stay ahead of AI. This should not be seen as human *hubris* or denial, but rather, the hope that drives those in education or the human betterment industry like ours.

Mapping and Monitoring the long-term water quality characteristics in Galveston Bay, Texas.

Adesope Akinsanya and Maruthi Sridhar Balaji Bhaskar.
Department of Environmental and Interdisciplinary Sciences, Texas Southern University, Houston, TX.

Abstract

The Galveston Bay estuarine is the seventh largest bay in the United States with various benefits to the Texas Coast, it serves as a large commercial source for fish and oyster harvest and is a major shipping hub for the transportation of oil and other goods and services. It is ranked as second largest of all the ports in the nation due to tonnage. It comprises of about four subdivisions which are Upper and Lower Galveston, East Bay, West Bay and Trinity Bay, which all makes up the Galveston Bay. In recent years there is a steady decline in the water quality of Galveston Bay due to large increase in nutrient concentrations and algal blooms, thus affecting the ecological and human health. The objectives of our study are to analyze the historical water quality data of Galveston Bay and to map the various physical and chemical characteristics of water using the Geographical Information System (GIS). The methodology involves downloading the water quality data of the last four decades and then extract and analyze the data using Microsoft Access and Excel software. The chemical parameters that were analyzed include Ammonia Nitrogen, Nitrate Nitrite, Total Phosphate, Total Suspended Solids (TSS) and Chlorophyll. The water quality data was downloaded from the Texas Commission on Environmental Quality (TCEQ). The tabular water quality data was further downloaded and spatial maps showing the water quality changes for the last four decades were prepared using the ESRI (ArcGIS 10.3) software. Our results showed high nutrient concentrations during the periods of 1980's to 2000's and started to decline from 2011 onwards. However, the overall concentration of all the nutrients were still above the proposed critical limits in large parts of the Galveston Bay. High nutrient concentrations were seen around the mouth of Houston Ship Channel (HSC) and Trinity River. Mapping the spatial trends of the water quality characteristics, as shown in our study, helps to easily identify the regions of Galveston Bay where the remediation and restoration efforts need to be concentrated and thus improving the water quality of Galveston Bay.

Active learning in business disciplines using flipped classroom and experiential learning

By Dr. Bhavesh Patel, Adani Institute, India
Dr. Mayur Desai, Texas Southern University
Dr. Kamala Raghavan, Texas Southern University

Rapidly changing technology combined with vast depositories of accessible material on the web offer opportunities and challenges to instructors to adapt and enhance student learning experience with "engaged learning" as the key goal. It is critical that the instructor offers a teaching approach that will enhance the self-paced learning for today's generation of students. Flipped classroom combined with project based learning approach has shown positive results in pedagogical experiments conducted by 3 instructors in different time periods, geographical locations and cultures, and different business disciplines. The first author used the approach in his graduate capstone course in finance at a residential school in India during 1987-2000, while the other 2 authors used similar approach in an urban school in graduate and undergraduate courses in management information systems, accounting and finance This paper presents the results of their classroom experiments that utilized such an approach, and affirmed the hypothesis that this approach will improve student learning across disciplines, time and cultures.

Self-driving vehicles Opportunities and Challenges
By:
Syed Ali, Lecturer – Management Information Systems
University of Houston Downtown
&
Dr. Utpal Bose, Professor – Management Information Systems
University of Houston Downtown
&
Dr. Min Bui, Adjunct Professor – Management Information Systems
University of Houston Downtown

This presentation will focus on the as-is state of self-driven vehicles, and the rapid development underway to put these vehicle on the roads and highways out of the testing tracks. We will address how we can teach our students the skill set much needed by employers now to support the efforts underway to support Self-driven vehicles eco-system. In particular we will address the incorporation of software, hardware, data analysis, and cyber security skills to augment our current course work offerings to deliver reality based instructions aligned with the business needs.

Self-driven vehicle development is supported by companies not only from Silicon Valley and Detroit, but Germany, China and several others. In creating autonomous vehicles, major transportation industries, such as trucking, shipping, taxi-driving will be transformed within 3 to 5 years. In our presentation we will survey technologies and partnerships among vehicle manufacturers, hardware, software, vehicle parts suppliers companies, as well as the National Highway Traffic Safety Administration (NHSTA). We will look into the role of some of the major universities such as Carnegie Mellon, and the University of Michigan in developing technologies, creating standards, road testing, and addressing the needs to educate and train workforce specific to self-driven vehicles. There is no doubt soon, other universities will be engaged in supporting the mobility eco-system.

This rapid transformation of transportation will also create a massive need for training people displaced by self-driving vehicles, this includes taxi drivers, bus drivers, truck drivers, to name a few. Recently, the House Energy and Commerce subcommittee voted to advance a bill that would speed up the development of self-driving vehicles and

establish a federal framework for their regulation. This bill is known as the Highly Automated Vehicle Testing and Development Act of 2017.

Not only will self-driven vehicles create hundreds and thousands of the new jobs in support industries, but they will also create one major benefit; a reduction in vehicle crashes. Approximately 40,000 fatalities occurs every year, and of those 94% are caused by human error. Waymo, a unit of Google is taking a gradual approach to achieve full autonomy, Tesla on the other hand is turbocharging autonomous driving and predicting Level 4 fully self-driving technology to be in place within two year. Both google and Tesla are also using different hardware, Waymo is using LIDAR which stands for light Detection and Ranging, Tesla is using Mobil Eye technology a combination of Radar and Camera. Currently there is intense competition, partnership and consolidation among companies actively involved in mobility ecosystem. Overreliance on automation may not be good as it gives a false sense of security, one challenge will be how to control Cyber intrusions, these vehicles will have internet modems, Near Field Communication (NFC) devices all providing gateways to security vulnerabilities.

We will also cover the key players, hardware, software, and levels of maturity in vehicle automation. We will discuss the use of programming languages such as Python, R, and Lisp, and finally how educational institutions can play a major role in contributing to the mobility ecosystem by training workforce, and realigning curriculum to meet the industry demands.

FLIPPING THE CLASSROOM: THE EFFECTIVE USE OF EFFICIENCY!

Johnnie Williams (*Corresponding Author*)
Texas Southern University
**Williams_jx@tsu.edu**

Felix Ayadi
Texas Southern University

Carlton Perkins
Texas Southern University

Ladelle M. Hyman
Texas Southern University

"Flipping the classroom" is a process whereby students gain first exposure to new material outside of class, usually via readings, lecture videos or case analyses. This pre-class preparation is then followed by students using class time to do the harder work of assimilating the knowledge gained through the pre-class preparations via exercises such as problem-solving, discussions, or debates. The choice of in-class activity is best determined by discipline. For example, Management courses may best be served by qualitative exercises such as discussions or debates; whereas, Finance and Accounting may find it suitable to use problem-solving or other quantitative exercises.   Reflecting upon Bloom's revised taxonomy (Crouch and Mazur, 2001), utilizing this process means that students are doing the lower level cognitive work (gaining knowledge and comprehension) outside of the classroom, and focusing on the higher forms of cognitive work (application, analysis, synthesis, and/or evaluation) in class, where they have the support of their peers and the instructor.

The "flipping the classroom" model contrasts from the traditional model in which "first exposure" occurs via in-class lectures and assimilating knowledge through homework; thus the term "flipped classroom. To ensure that students do the preparation necessary for productive class time, researchers, Walvoord and Anderson (1998), propose an assignment-based model in which students produce work (writing, problems, etc.) prior to class. Followed by giving students productive feedback through the processing activities that occur during class, reducing the need for the instructor to provide extensive written feedback on the students' work. Class time is structured around alternating mini - lectures and conceptual questions.

Bloom's Taxonomy

Vanderbilt University Center for Teaching
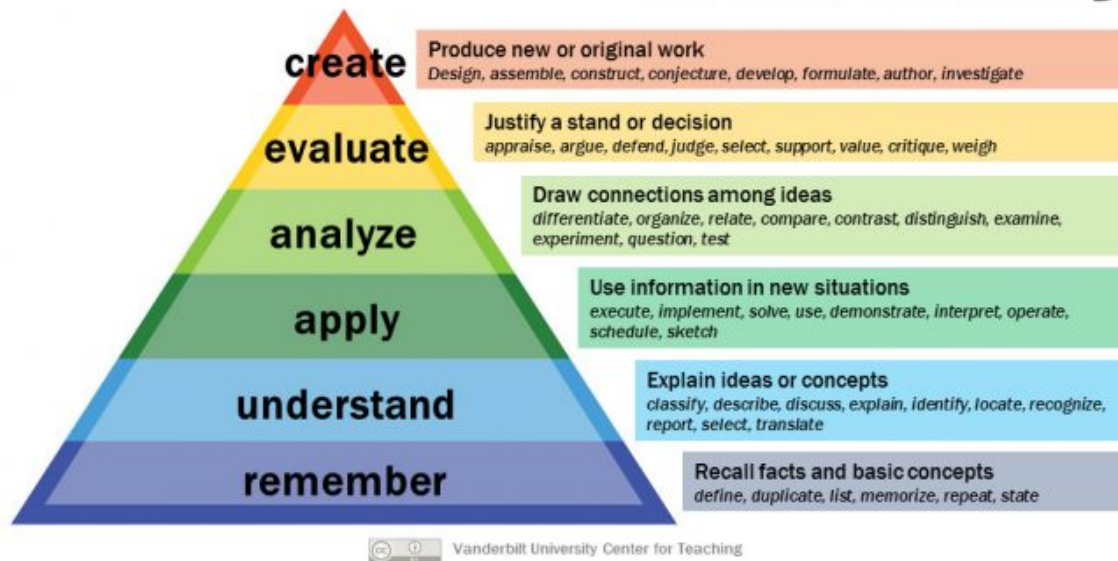
The conceptual questions are formally posed and answered by every student. If a large fraction of the class (usually between 30% and 65%) answers fail to not only apply the concepts or demonstrate higher order cognitive skills, then students are encouraged to reconsider the questions in small groups while the instructor circulates to promote productive discussions. Today's digital platforms such as Blackboard and Cengage's MindTap provide rich sources of information and data to prepare students both inside and outside the classroom. Cengage's MindTap, as one example, provides a flexible, fully customizable learning experience. Instructors can add their own items such as YouTube videos, RSS feeds and links to external websites to engage students (http://embed.widencdn.net/pdf/plus/cengage/a0pize8dyl/fly_best_practices_mindtap.pdf?u=c8lc jz on 10/01/2017). Peer instruction, using student peer leaders may be used in assessing each student during in-class exercises. After the in-class small group sessions, the instructor provides feedback, explains the best/correct answer(s) and follows up with related questions if appropriate. The cycle typically takes 30 - 40 minutes.

This presentation share a concrete example of "flipping the class" and how it can be used to manage the following challenges of being in today's classroom:

(1) Fostering critical thinking;
(2) Enhancing student engagement;
(3) Deploying technology in the classroom – especially in the absence of funds to buy the latest and greatest; and
(4) Managing class size and the accompanying workload;

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Mapping Spatial and Temporal Variations in the Nutrient Content of Greens Bayou, TX

Primary Author: Jericho Johnson, Department of Chemistry, Texas Southern University, Houston, TX.

Co-Author(s): Maruthi Sridhar Balaji Bhaskar, Department of

Environmental and Interdisciplinary Sciences, Texas Southern University of Houston, TX

Djene Keita, Texas Southern University, Department of Environmental and Interdisciplinary Sciences, Texas Southern University, Houston, TX.

The effect of land use and land cover changes on the extensive urbanization of Houston and surrounding areas has a significant effect on ecology, environment and human health in the Greens Bayou watershed. The increase in frequency and intensity of the urban flooding events along the Greens Bayou makes it important to monitor the nutrient and heavy metal concentrations along the Green Bayou. The objectives of this study are to 1) Monitor the historical water quality data of Greens Bayou, and 2) Develop GIS (Geographic Information System) maps of the study area with sampled nutrient concentration data. Historical water quality data from the past three decades of the Greens Bayou was downloaded from the USGS database, processed and analyzed for time series analysis. A total of 15 water and 15 soil samples, from five different sampling locations along the Greens Bayou were collected and processed for chemical analysis. The samples were analyzed for nutrient concentrations using ICP-MS (Inductive Coupled Plasma Mass Spectrometry) and TCN (Total Carbon Nitrogen) analyzer. Our results of the historical analysis indicated that there was a significant decrease in nutrient concentrations in the Green Bayou during the last three decades. The water and soil concentrations of the total carbon, total nitrogen, total organic carbon, and inorganic carbon showed a general decline from upstream to downstream sampling locations along the bayou. Studying the historical data and current analysis of nutrient concentrations in Green Bayou allows for better conservation and care of this urban watershed ecosystem. This research was primarily supported by the National Science Foundation (NSF) through the Texas Southern University (TSU) under the award numbers HRD-1400962 and HRD-1622993 and NSF Houston Louis Stokes Alliance for Minority Participation.

Faculty Advisor/Mentor: Maruthi Sridhar B. Bhaskar, bhaskarm@TSU.EDU

STUDENTS' HEMISPHERIC PREFERENCE AND ACADEMIC PERFORMANCE IN BUSINESS STATISTICS COURSES

O. Felix Ayadi, Texas Southern University, Houston, TX
Mammo Woldie, Texas Southern University, Houston, TX
Anthonia Allagoa-Warren, Texas Southern University, Houston, TX
(Corresponding author)

ABSTRACT

An aspect of teaching that brings joy to an instructor revolves around the utilization of students' cognitive characteristics in designing a teaching strategy that ensures a higher level of achievement and retention (Terrell, 2015). Students are generally more concerned about post-college job opportunities to the extent that the historical dichotomy between the worlds of "work" and "learn" has become blurred (de Boer, 2001). According to de Boer (2001), employers are attracted to potential employees who are innovative and can think holistically, synthesize information communicate effectively, perform in teams, ethical and solve problems creatively. Leflar and Terrell (2014) note that one of the goals of undergraduate and graduate education is to turn out students who can solve business problems. He (2015) notes that problem solving is one of the most cited goal in a business curriculum. In surveys of deans of Association to Advance Collegiate Schools of Business (AACSB International) accredited schools of business by Martell (2005, 2007), problem solving, is identified as one of eleven most popular learning goals. In our current modern society, educational institutions are required to produce potential employees who can communicate effectively, think critically, solve problems, be innovative, be ethical and work in productive teams (de Boer, 2001; Scott et al. 2009; He, 2015).

In order to produce potential employees with the aforementioned characteristics, educators would need to move away from the traditional teaching methods (Goodlad, 1994). Lumsdaine and Lumsdaine (1995) conclude that effective learning involves the four thinking quadrants of the brain as identified by Herrmann (1994). External learning through lectures and textbooks takes place in one quadrant. In another quadrant, internal learning is through visualization, holistically and intuitive understanding of concepts. The third quadrant incorporates interactive learning through discussions, hands-on and sensory-based experiments with encouragement and verbal feedback. The last quadrant focuses on procedural learning through practice and step-by-step

testing of the subject matter being taught. According to Herrmann (1994), the brain is divided into left mode and right mode with each mode made up of two quadrants. The left mode is structured and deals with logical, rational, critical and quantitative activities. On the other hand, the unstructured right mode is non-linear that deals with visual, conceptual, emotional, expressive and interpersonal activities.

The concept of inclusive education refers to the different ways through which education is made available to learners who possess different characteristics. In other words, inclusive education is one that imbibes different learning styles in teaching, learning and assessment. According to Herrmann (1996), the mental preferences of individuals are derived from a combination of genetics, nurture and culture. Therefore, mental preferences do influence a student's cognitive activities and consequently, the thinking and learning styles. Carthey (1993), reports the existence of direct and inverse relationship among brain hemispheric modes and academic achievement in the certain college courses. Saleh (2001), reports research studies which conclude that a teaching strategy that is designed to match students' hemispheric preferences can result in better academic performance.

Therefore, the objective of this presentation is to investigate the relationship between a student's brain hemispheric preference and academic performance in college courses that emphasizes problem solving. In other words, is there a difference in academic performance among whole brain (bilateral), left brain and right brain groups in a business statistics course

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There is no problem so big it can't be run away from. – Charles Schultz

of fundamental theories and procedures of basic business functions. This interdisciplinary approach is designed to provide majors with core business applications that will enable professional employment opportunities within various industry sectors. Graduates with this degree should be able to utilize applicable technological skills required by industry.

So, what happens when there is a perception that business majors lack applicable technological skills? Should business schools mirror industry and conduct an assessment of core skills or content? Can findings be used to justify or develop curriculum material for development of skills required by industry? Should business majors be expected to mirror industry in the development of skills? These were some of the questions used to examine how and/or if assessment is beneficial to close the gap-*theory* to *practice* with respect to skills development of business majors.