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Professional Contingent Workers - Adjunct Professors

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ABSTRACT

The transition in higher education from a predominantly complement of full time tenure track professors to a faculty complement of adjunct professors has happened almost unperceptively. Ostensibly in an effort to address budgetary concerns and meet the academic mission for burgeoning student bodies, contingent faculty are being hired in greater numbers and are playing a larger role in the academic program. This study examined students' perceptions of full time versus adjunct faculty in a small sized minority serving institution dealing with changes in enrollment and demographics.

Keywords: Contingent workers, professional contingent workers

INTRODUCTION

Higher tuition fees, reduced or fluctuating enrollment, community colleges attendance, proliferation of on-line degree programs and short-term technical career paths have dealt an economic blow to colleges and universities. In an effort to maintain standards of excellence and address academic competition, administrators have made programmatic, academic, and structural changes. One area that is chronicled by institutions of higher education nationally and internationally is the replacement of open faculty positions with adjunct faculty resulting in a shift away from full time faculty to adjunct faculty. According to Jolley, Cross and Bryant (2014), and AAUP (2013) "community colleges indicate that more than 70% of instructional staff are part-time faculty." Cost saving measures are not limited to community colleges. Four-year institutions have adopted this budgetary saving strategy of hiring part time faculty as well.

Contingent workers have primarily been considered temporary employees without full benefits and on a somewhat tenuous payroll. Length of employment is usually seasonal, temporary, and short term in nature. Technological advancements, economic conditions, and demographic changes have produced increased numbers of skilled contingent workers. For purposes of this study, adjunct professors are classified as professional contingent workers. Universities are recruiting adjunct faculty from this skill bank of retired faculty, graduate assistants, and career experts.

Nearly a decade ago, the Department of Labor Report entitled "Futurework: Trends and Challenges for Work in the 21st Century", pointed out that "the contingent workforce is becoming the trend for the future, as companies try to have a flexible workforce and to respond quickly to factors in their economic environment" (Winston, 2000). How then do students actually view adjunct professors - professional contingent workers?

Undergraduate minority serving institutions emphasize character building, leadership development, scholastic excellence, and a small student to faculty ratio. The impact of student faculty relationships is considered a foundation for advisement and student success. Keels (2005) set forth that "although it is more economical and cost effective for universities to hire adjunct and part-time professors, it also has an impact on how students are molded into graduates". This study examined whether students' perceived a discernable difference between full and adjunct professors and the impact on their academic experience.

However, in recent years, the percentage of tenured and full-time professors has significantly decreased in higher education. In the year 2011, "51 percent of college faculty were part-time", and "19 percent were non-tenure track,

full-time employees" (Edmonds, 2015). According to Gwen Bradley, American Association of University Professors' Committee on Contingent Faculty and the Profession, "adjuncts require less of a commitment from an institution. Although it is more economical and cost effective for universities to hire adjunct and part-time professors, it also has an impact on how students are molded into graduates "(Keels, 2005).

Adjunct professors have a special place in higher education systems because often they serve as liaisons between the most contemporary information in career fields and students whose passions are in those specific career fields. They, contingent faculty, need sufficient access to research and teaching materials of the university even with uncertain employment contracts (Jula Hughes, 2015). "Although they provide many lucrative freedoms to the university and great opportunities to students, they are often viewed as "second-class citizens" by tenured and full-time employees" (Wallin, 2010). Research findings indicate that faculty contact and relationships with students are critical keys to student success (Jolley, Cross and Bryant, 2014.) The role that adjunct faculty play in the academic environment goes farther than stand up classroom instruction.

LITERATURE REVIEW

The purpose of a professor is to teach a student, pass down knowledge, and prepare a student for the real world. How these professors are treated has a correlation to how they perform. Adjunct professors are usually "better educated", but "experience job instability due to changing conditions" in the field of academics, and "have marginal status among their colleagues although they command full status from students" (Carla Weiss, 2011). A strength of Weiss and Pankin's study is that it is written by two professors who are a part of the academic community in which adjunct professors also work. They are able to serve as a primary source on how adjuncts are treated in their environment and how they relate to students. Even though adjunct faculty and full-time faculty have different requirements, they serve the same duties to students.

For most of America's students in higher education enrolled in community colleges, a large population of "working-class" students, "ethnic and racial minorities, first-generation college students, and immigrants" make up that demographic (Goldstene, 2015). Therefore, the increase of contingent faculty consequently increases the focus on technical skills and lessens the focus on preparing this large demographic of students for four year universities. This demographic loses the opportunity of increasing their analytical, critical thinking, and social skills that four-year universities offer. This constricts their job skills to a very specific and small skill-set (Goldstene, 2015).

Governance of adjunct faculty also affects the health of adjunct professors. During an adjunct orientation, a Professor Wood of IU "was surprised at the number of people who said they were forced into the classroom to get money for medical bills" (Keels, 2005). Being that adjunct professors do not receive the same benefits as full-time professors, they often times do not have health benefits. There has been legislation to assist "employees who work at least a 30-hour work week". Obamacare made it a requirement that these employees must receive the same health benefits as their counterparts' experience (Mcardle, 2013). It is important that jobs invest resources into imroving worker well-being to take advantage of the positive consequences for their organizations (Schreurs, 2009).

As professional part-time workers, adjunct faculty are often exerting themselves in an unfair system to make ends meet. They have a significant lack of freedom, a divided and considerable workload, they usually commute between two or more schools, and have little time to prepare appropriate lessons for students in an environment that constantly shifts (Edmonds, 2015). Another heavy inequality on campuses is that they tend to earn less than minimum wage and have to reapply for costly parking permits every semester (Worthen, 2015). Experiencing systematic exploitation, many adjunct professors have decided to take responsibility in their own hands and step into a realm of action and consciousness (Rhoades, 2015).

Teaching Conditions

Adjunct professors have to find means to maintain standard teaching conditions with the small amount of resources they have. Even though some adjuncts live on the edge of the poverty line and rely on subsidized programs to make ends meet, they still have to meet the demands that educating the future leaders of the world require (Miller, 2014). It is a common occurrence for universities to request their services and increase their workload last minute. In this, they

"deny them access to technology and [refuse] to provide them with offices, access to phones and even computers" (Anonymous, 2012). As compared to full-time employees, adjuncts have more field experience and more invested relationships with their students that can help students secure internship and job opportunities (Liftig, 2014). In harmony with Liftig, Meloncon, and England, Ilysavoa points out "faculty working conditions are student learning conditions" (Lisa Meloncon, 2016). It is difficult for teachers and students to work in temporary buildings where there is poor air and water quality, also rodent problems (Prato, 2015).

The impact of the Internet on academic programs is not to be underestimated. The purposes of online education, according to Thierry Volery and Deborah Lord, are to "expand access, alleviate capacity constraints, capitalize on emerging market opportunities, and serve as a catalyst for institutional transformation" (Lord, 1987). Online education is a resource that many universities are now relying on, especially for adjunct professors. Teaching conditions have shifted and made adjunct professors available 24/7 instead of during class. As a consequence, adjuncts experience a new and appropriate means of dispersing information but have come to realize that teaching has shifted into a means of quality control (Ovetz, 2015).

Full time faculty expectations of university support and resources are not givens for adjunct faculty. Often adjuncts do not have access to office space, computers, instructional equipment, or designated mailboxes. Often they are not familiar with the wider university and the policies and procedures needed for student advisement and consultation. Working with students outside of the actual class session can be burdensome and often does not occur. Adjuncts also rarely have posted office hours for availability for assisting students with class issues. The disconnected nature of the adjunct's schedule sets them apart from establishing collegiality with any academic department. Due to scheduling, they are isolated from students, faculty, and staff. Connections and professional bonding rarely occurs. This becomes an issue as student faculty interaction has been rated as the number one factor in student success, retention, and positive association with the university.

Alderman, 2001 supports this observation stating that "while part-time faculty may be able to demonstrate some of the characteristics associated with high-quality faculty-student interactions, such as being approachable, their general inaccessibility or lack of engagement outside of class may make them seem to students to be distant, unsupportive, or unapproachable.

Student Assertions

The institutional impact of setting new priorities to meet fiscal constraints has had an impact on academic programs. The results were predicted. The National Commission on the Cost of Higher Education 1998 report concluded "that institutions reduced instructional budgets by hiring more contingent faculty instead of making a commitment to tenure-line faculty….undoubtedly imposed a cost on the quality of instruction"(1998). The quality of the academic program will undergo scrutiny as the ratio of full time tenured faculty are replaced with adjunct faculty with varying levels of academic preparation.

Benjamin (2002) observed that "informal interactions with faculty outside the classroom, which "positively influence persistence, college graduation, and graduate school enrollments" of students, as one of the strongest positive factors contributing to student learning" (Benjamin, 2002). The dilemma becomes one of finding the right balance and ratio of full-time tenure track professors to adjunct faculty members while meeting the administrative demands on the institution.

Jaschik (2013) cites a major study of Northwestern University students found learning was greater when their instructors were adjunct than when they are tenure–track. The study released by the National Bureau of Economic Research (2013) found "that the apparent benefits of taking classes from non-tenure track faculty were enjoyed more by the less academically qualified students than by the more academically qualified students -- the biggest gains to faculty outside the tenure system were for relatively weak students taking courses in the toughest-grading subjects." The author added "findings indicate the benefits of taking courses with non-tenure faculty appear to be stronger for the relatively marginal students" (2013).

"For students of color and first-generation college students, the positive effects of faculty-student interactions are particularly strong. Indeed, no other actor plays as strong a role for students of color, making this a particularly important finding for our increasingly diverse institutions" (Lungberg, 2004). Students of color note, "faculty interactions encourage them to engage more with learning, try harder, and meet high academic expectations" (Allen, 1992). For example, students attending Historically Black Colleges and Universities have "attributed their success to faculty and staff's encouragement and support, while Latina/o students say faculty interactions enhance their sense of belonging and their feeling that they are valued and matter in the community" (Fries-Britt, 2002). Students report higher academic achievement resulting from increased faculty interaction.

METHODOLOGY, DATA ANALYSIS, DISCUSSION

A 5-point Likert Scale questionnaire was developed and used to survey students on their perceptions of adjunct faculty in response to ten questions. The research instrument was field tested on a business class of thirty-two senior level undergraduate students of various majors. Comments from the field test were incorporated into the final survey. Participants were asked to rate their responses to each inquiry on the following scale: strongly agree, agree, neutral, disagree, and strongly disagree.

The purpose of the questionnaire was to assess whether or not students perceived the governance of adjunct faculty had an effect on their teaching. The survey also provided a more comprehensive understanding of how students best interact with professors that are full-time versus their adjunct professors. Furthermore, the study examined how students feel adjunct professors should be governed in order to optimize their teaching interaction.

The questionnaire was distributed to individuals through Google Docs survey service, an online platform. Sixty-four individuals completed the survey correctly. Although a vast majority of students were from Hampton University, the remaining students attended undergraduate universities throughout the Southeastern United States of America. The survey included both traditional and non-traditional college students. Traditional students being students who attended school right after high school, and non-traditional students being students that went to college after some form of military service or other demands of life.

Students were queried to assess if they knew how the extent of the demand of adjunct faculty's job correlated with their benefits. For example, questions that indicated that adjunct professors do not receive the same benefits from employers that full-time professors do were used to measure the degree to which students were aware that there may be internal-legislative components affecting their teaching.

The data collected from the survey is represented in charts indicating responses to each item. Of the sixty-four respondents, 78.5% were females and 21.5% were males. 36.9% of respondents were seniors; 27.75% were junior; 18.5% were sophomores; 10.8% were freshmen and 6.1% were graduate students. The majority of students responding to the questionnaire were senior psychology majors and the second highest group of respondents was business management majors. There were other random majors represented but not to a significant degree.

TABLE 1: Major/discipline of respondents

Major	Number of respondents	Percentage
Business Management/Marketing/5yr MBA	25	39.06%
Anthropology/Biology	8	12.50%
Chemistry/Pharmacy	3	4.69%
Fine Arts/Interdisciplinary	3	4.69%
Political Science/Psychology	5	7.81%
Speech Pathology	20	31.25%
Total Respondents	64	100.00%

TABLE 2: Faculty Performance
SCALE: 5-strongly agree 4-agree 3-neutral 2-disagree 1-strongly disagree

	Scores					Total
	5	4	3	2	1	
There is a noticeable difference between the education of adjunct faculty and full-time faculty.	14.10%	37.50%	28.10%	14.10%	6.20%	100%
Adjunct faculty should have as much access to teaching resources as full-time faculty.	28.10%	54.70%	15.60%	1.60%	0.00%	100%
Sometimes I find difficult to notice the difference in teaching between adjunct professors and full-time professors	6.50%	37.50%	23.40%	28.10%	4.50%	100%
The teaching methods of adjunct professors are preferable.	3.00%	18.80%	62.50%	14.10%	1.60%	100%
I prefer full time professors.	7.80%	32.80%	51.60%	6.00%	1.80%	100%
When adjunct professors have full access to university resources, they are better instructors.	51.60%	26.60%	14.10%	7.80%	0.00%	100%

TABLE 3: Faculty Conditions
SCALE: 5-strongly agree 4-agree 3-neutral 2-disagree 1-strongly disagree

	Scores					Total
	5	4	3	2	1	
Adjunct professors should have access to retirement plans.	15.60%	46.90%	23.40%	12.50%	1.60%	100%
Adjunct faculty should have access to insurance provided by their university.	28.10%	54.70%	15.60%	1.60%	0.00%	100%

TABLE 4: Faculty –Student Interaction
SCALE: 5-strongly agree 4-agree 3-neutral 2-disagree 1-strongly disagree

	Scores					Total
	5	4	3	2	1	
It is easier when professors are physically accessible during their office hours.	48.40%	39.10%	10.90%	1.60%	0.00%	100%
It is easier to access professors via email or text messages.	34.40%	31.30%	17.20%	14.10%	3.00%	100%

Since the majority of respondents were seniors, they had considerably more experience with professors. Nearly 44% of respondents indicated that they either strongly or very strongly noticed little the difference between the quality of teaching of adjunct faculty and full-time faculty. 51.6% of student respondents noticed a difference between the educational levels of adjunct and full-time faculty. The majority of respondents felt that adjunct professors should have access to retirement plans (62.5%) and health insurance (82.5%). Responses may indicate their general knowledge of the benefits that should be afforded to adjunct or part time employees.

The difference in faculty classifications became an issue when students wanted to contact the course professor outside of the class session. Adjunct faculty rarely had office hours. 87.5% of respondents strongly agreed and agreed that it is easier when professors are easily accessible. Students with questions regarding course assignments had to resort to email, texts or discussions with other faculty members. Research findings support the claim that the relationship between professors and students enhances the learning experience. Therefore, it is understandable that results indicated that respondents strongly agree that their professors should have office hours where they are physically accessible. The results suggest that although a majority of students prefer physically accessing their professors, many

students (65.7%) also prefer it when they can reach their professors electronically. This suggests that students prefer having their professors available to them as much as they can and when they can. Students agreed (78.2%) that when adjunct professors had full access to university resources they were better teachers.

CONCLUSIONS

Adjunct faculty are classified as part of the professional contingent workforce. Their original role was a result of employers needing to cut costs and find a way to produce the same output. The data suggest that students are not aware of the teaching conditions of adjunct faculty. They are more concerned with how their professors can optimally teach them and offer academic support. The environment of higher education today is shifting from traditional settings that require a professor to monitor and conduct the classroom the majority of the time, to an environment where students may not have to physically access a professor to receive an education. Various instructional modalities are emerging as universities in the United States are charged with preparing employees to compete in the 21st century global marketplace.

Students often times do not notice the difference between adjunct faculty and full-time faculty. Adjunct professors do not have office hours or office space yet students prefer it when they can access their professors physically and through electronic mediums. These results suggest that even though the teaching environment is changing to an electronic medium, having professors available for students is very important and has a strong impact on how students' function.

Technology has a direct impact on how teachers deliver the instructional program in today's environment because it creates a different medium through which to service students. Online portions of universities offer bachelors, masters, and doctoral degrees with the same clout for those physically attending a university. With this new venue available to access education, the role of professor changes. There is no need for universities to provide office space, health care benefits, and retirement plans to a teaching force that full-time professorships require. A word of caution, technology is an instructional aide, not a replacement for faculty-student face-to-face interactions.

IMPLICATIONS FOR FURTHER STUDY

The ancillary factors for the faculty, office space, instructional resources, benefits, collegiality, etc., are issues for faculty rather than students. This prompts the need to examine the impact on academic freedom due to overreliance on part time adjunct faculty. Does the overreliance on professional contingent faculty lead to reduction of academic standards and lessening of academic freedom? Job responsibilities for full-time tenured faculty include teaching, research, and service. These responsibilities are not required for adjunct faculty. The long-term impact of adjunct faculty on the academic program needs to be examined, as budgetary savings are often not used for the academic scholastic mission of universities. Two areas for further research are to (1) examine the relationship between adjunct and full-time faculty and (2) examine the academic qualifications and preparation of the professional contingent worker, being hired (adjunct faculty).

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Vitamin D, Smoking, And Human Cancers

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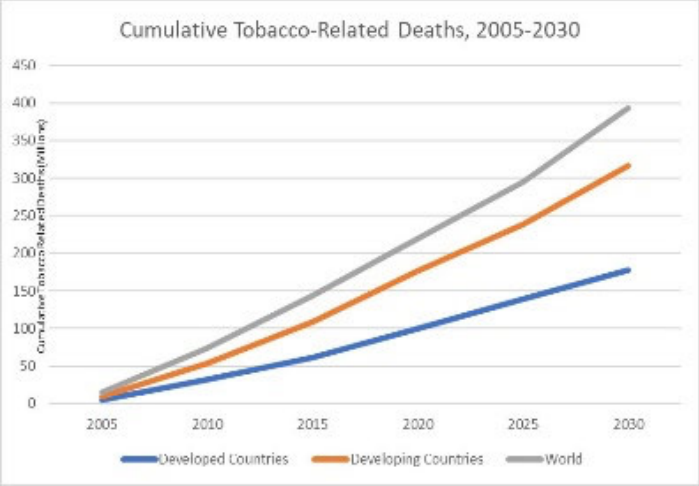
ABSTRACT

Nicotine is the major plant alkaloid in tobacco. It is addictive and is responsible for the loss of millions of lives worldwide. The major metabolic product of nicotine is cotinine which can be used as an index of tobacco use. Vitamin D is a fat-soluble vitamin and its production is associated exposure of the skin to sunlight. Vitamin D deficiency is world-wide health problem. Deficient serum concentrations of Vitamin D have been associated with a high risk of tobacco-related cancers. Active smoking or exposure to second hand smoke is associated with reduced concentrations of the vitamin in the blood stream. A study from the Czech Republic demonstrated that decreased levels of the vitamin, in addition to lung cancer, correlated to high incidences of breast, prostate, and colorectal cancers.

Our research is a multi-tier study that began with data from the National Health and Nutrition Examination Study and focusing on non-smokers, light smokers and active smokers. The data showed that race and gender are major factors in the values of serum Vitamin D. Overall, females had lower values than males. In the United States and Europe, smoking became a symbol of liberation for women in the 1920s. From the epidemiological studies, in active smokers, black females had the lowest values of Vitamin D at 13.34ng/ml followed by hispanic females at 19.21ng/ml compared to white females at 24.92ng/ml. Cotinine appears to compound the effects of low vitamin D and may be a contributing factor to deficiencies. There are several possible explanations. Cotinine may inhibit the transport or conversion of the inactive form in the liver to the kidney. It may interfere with cellular receptors for vitamin D. Cotinine may act at the subcellular level. Research is underway to elucidate the mechanism.



Use Of E-Learning As A Teaching Method To Improve Academic Efficiency In The Distance Learning Institute, University Of Lagos, Nigeria

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ABSTRACT

E-learning has come to stay as a 21st century phenomenon and has deeply impacted our daily lives in diverse ways, whether in economic, academic, socio-cultural or political spheres. This study, which is based on the theories of andragogy and heutagogy explored and documented the application of modern technology and e-learning facilities to improve academic efficiency in distance education in a specific distance learning Institute in Nigeria and came up with some observations. Students and Lecturers (n=250) participated in a survey that assessed the effectiveness of e-learning methods as a tool for improving academic quality and learner engagement. It was a participatory experimental research in the University of Lagos' Distance Learning Institute (DLI) with students in four levels of study and across different courses and departments. Self-administered structured Opinionnaire and Interviews were used for data collection. The research was guided by seven research questions. The response trends quantitatively revealed that majority of the learners were still wary of e-learning as a teaching/learning method and have no choice but to use it. It was suggested that ways be found to expand the use of, and make e-learning more learner-friendly, with more time devoted to initiating learners into the use of modern technology and e-learning as a method. E-learning remains the best option for distance education, in spite of the attendant challenges and must be adopted for self-development, global conformity and best practices.

Keywords: Adult Teaching Methods, Andragogy, Heutagogy, E-learning, Distance Education

INTRODUCTION

Electronic learning or E-learning is a necessity in the 21st century and Adult Education must join the Millenials by ensuring that its processes accommodate and incorporate e-learning into teaching/learning. The computer and other forms of technology are 21st century phenomena, commonly incorporated into our daily lives in diverse ways, whether for work, education or entertainment. This study, which is based on the theory of andragogy and heutagogy explored the use of e-learning in a specific distance learning Institute in Nigeria and came up with some observations.

LITERATURE

1. E-Learning And The 21st Century

New 21st century challenges call for 21st century solutions and Adult Education is thus moving more in the direction of transformative learning, following heutagogical principles. With increased globalization, new modes of learning require more technological skills that will require interaction, collaboration, practical, introspective and self-directed efforts (Blaschke, 2012). These are tilting towards the ideal practice of adult education in a digital age. This is because the adult is called upon to progressively become more problem-solving, self-directing, flexible and make decisions based on informed choices. 21st century learning demands more than mere use of digital technology like Smart Phones and the computer to learn. The adult is increasingly challenged to move beyond learning the content, to managing resources, collaborating and being more analytical in a more globalized world, where the rise of new

technologies has revolutionized learning methods, and even challenged a re-evaluation of traditional teaching methods (Canning, 2010). The incorporation of modern technology into teaching/learning inevitably changes the experience to a more learner-centered one, making the learner a more active participant, and thus more invested in what is learnt, and how.

2. Andragogy And Heutagogy

This study borrows from the theory of Andragogy, the art and science of helping adults to learn (Knowles, 1984), which emphasized self-directed learning in support of transformational learning. This, according to (Blaschke, 2012), promotes emancipatory learning and social action. Heutagogy, or self-determined learning (Kenyon and Hase, 2001) as a natural progression from andragogy puts the learner firmly in control so that he determines what will be learnt, how and when it will be learnt. Heutagogy is in line with Knowles' andragogical principles as updated by Finbel (2011). His rendering of the adult learners' characteristics is equally supported by Kolb (1984). This made Ford (in Kenyon and Hase, 2001) to further describe it as knowledge-sharing rather than knowledge-hoarding. The theory supports the principle of e-learning as it mirrors all the precepts of andragogy and heutagogy on self-directed learning, enabled by technology-driven education to fit learners into the 21st century.

From pedagogy, the art and science of teaching, there is a shift from dependency on the teacher towards andragogy where the learner sees the teacher more as a resource or facilitator for learning, such that the learner becomes more self-directing. Kenyon and Hase (2001) took a step further, favouring heutagogy, to advocate Vocational Adult Education for the 21st century, using more self-determined learning. This has been a natural progression that increasingly ceded control to the learner from the teacher. There is also the newly coined techno-heutagogy by Pelz (2012) which describes the use of technology to enhance learning in a self-directed learning environment, and also discussed gynegogy (about women's learning). Heutagogy as a theory supports digital education. This is because heutagogical learning methods inherently promote autonomy and the learner-centered approach with the support of different learning resources including self-evaluation, using technology as a tool for enhancing learning. It is believed that adults are more self-directing, but there is also a maturity that comes with autonomy that makes the learner more independent and requiring less instructor guidance (Canning, 2010). A more scaled down version of andragogy, as used with children, is the Montessori method.

3. Distance Education

Distance Education refers to teaching and learning modes occasioned by the geographical distance between the learner and the educational institution (which changes the function dynamics), while online learning focuses on the method of learning where course content is delivered via the internet, Berg and Simonson (2019). The learning is usually attached to an institution for purposes of accreditation which differentiates it from learning by oneself. The intensity of incorporation of e-learning can then be determined by both learner and facilitator. E-learning as a method invariably creates access to more learning opportunities and resources and makes for more interactive encounters. Historically, other modes of delivery of distance education are Open Learning (referring to the openness of educational provision as an approach that uses distance learning techniques); Correspondence (learning, using the postal system, telephone, cassettes, etc); Independent Study, External Study, Continuing Education, among others (Bakare, 2012). Most of these approaches have coalesced into new e-learning modes, and many now use the different terms like distance learning, online learning and self-directed learning synonymously (Dringus and Cohen, 2005). Distance learning is often undertaken with multiple and often mixed methods which may include telecommunications, computer based, audio visuals, different types of media broadcasts, CD, video and also print materials; the communication between learner and the resource may then occur synchronously or asynchronously. Distance education makes higher education more easily accessible to adult learners. It is thus becoming more popular as a flexible mode of learning, ideal in its combination and mix of teaching/learning methods, resources, and its fit into 21st century learning.

4. E-Learning As A Teaching/Learning Method

There are different methods of teaching/learning. Methods are the tools that connect the learner and the learning task (Bakare, 2013) and are vital to teaching/learning outcome. It is believed that certain methods work better for

adult learning. There are a multitude of methods that could be used, and the selection of appropriate method to match the learning task is pivotal to the success of learning-goal achievement. If care is not taken, the choice of a wrong method could negatively affect the learning outcome. Learning mode could be individualized, group or participatory, using methods like Lecture, Discussion, Seminar, etc (Bakare, op cit). Pedagogy dictates that the prerogative of method choice rest on the teacher, but the more mature learner has more input. E-learning involves learning using technology as the fulcrum and it is popularly used for Distance Education (Bakare, 2012). The Education System and Solution - EDSY (2020) calls it the method of teaching purely through technology in a blog that asks what e-learning is and its importance to the education system. E-learning as a method has become the automatic choice for distance education by default. Since it also obeys all the theoretical underpinnings of adult learning, it has become almost synonymous with adult education. This flexible mode of learning can also be incorporated, even into face-to-face learning encounters, but is more commonly used when learners and facilitators are separated. Technology is now used to improve educational delivery and the quality of education.

Classroom-based type of face-to-face learning could make use of methods like Seminars, Lectures, Discussions and other proximity-based methods suitable for such encounters. E-learning on the other hand, tries to incorporate these methods using technology as the media. Any form of distance education considers the learning goal in deciding the most suitable methods. It is always best to use a combination of methods and teaching aids/devices that will ensure that all learners have a chance of gaining from the experience, no matter their learning style (Kutumela, 2016).

The use and integration of e-learning to connect learners and facilitators who are physically apart enriches learning when they use multimedia to communicate. Nowadays, distance education is conducted as a 'Smart Class' in a more digitally updated environment. Books could be accessed through virtual Libraries and learning conducted in a virtual classroom situation. Knowles' theory of andragogy already manifests in distance education as it takes the convenience of the learner into consideration and learning can be done at their own place, pace, time and general comfort, incorporating self-evaluation. As many as possible of the senses are also engaged simultaneously and constant feedback interwoven into the process. Overall, learning essentially becomes interactive, stimulating and meaningful and engages the learner's interest. One of the benefits of distance education is that its flexibility gives the learner a higher level of autonomy and self-directedness that is essentially adult learning. E-learning in distance education encourages self learning; however, the learner may miss out on the frequent physical human contact and may even feel isolated, unless there is constant virtual contact with the facilitator and other learners, which e-learning encourages (Berg and Simonson, 2019). The different e-learning tools thus make teaching/learning more interesting, interactive, meaningful and stimulating for the learners, using suitable teaching strategies.

Learning Management System (LMS) is a software application (App) used to manage training (Quigley, 2018). This allows the facilitator to select different approaches to fit the topic and media, or a mix, to conduct the class. Site management can equally be automated to reduce the need for the host facilitator to install and maintain software which learners simply access online. In its case, the University of Lagos' Distance Learning Institute (DLI) manages access, security, availability and performance, along with the Open Education Resources (OER). LMS can incorporate other Apps and be used to create and upload modules, video, pictures and audio materials. Other basic features on the computer are PowerPoint, Word and Excel, all basic Microsoft Office Apps used for e-learning in its part time programme. They are used to create content, documents, to present, compute and manage reports and can be embedded and e-mailed. The functions, including typing, and desktop publishing are the easiest to master and everyone uses them as basic computer skills. Arguably the best networking tools for e-learning include LindedIn (which provides a platform to network) and Twitter (a social network that promotes interactions and contributions). Others are Facebook and Instagram, among others; all of which can be downloaded from the computer to assist or manage self-learning. Another is the YouTube, popularly used to deliver and upload video content and is a popular site to watch 'how to' videos and for learners and facilitators to interact (O'Neill, 2019). The only disadvantage is that particular Courses cannot be taught online. There are many more Apps, but this study is limiting to the most used. Computer Apps can also be synchronized with other personal devices like Tablets and Smart Phones.

5. Adult Teaching/Learning Methods

For the adult, learning occurs more easily when the learner takes a more active rather than the traditionally passive role in the process. Thus the world has navigated the spectrum through pedagogy, andragogy to the more 21st

century-appropriate heutagogy. Heutagogy caters to different learning styles and suits different kinds of learning (whether knowledge based, skill oriented, practical, etc). In heutagogy, because the role of the facilitator is less pronounced, the learner has to go through the process of analysis, critical thinking and questioning to determine what they wish and how to learn, thus become progressively equipped with the tools to make all the decisions necessary (Bakare, 2018).

Facilitators equally benefit from technology use when they create content, arrange and host sites for virtual meetings, evaluate, give short lectures and tutorials and upload video and picture content. They could organize blended learning and Webinars, PowerPoint presentations and evaluate using tests with multiple choice answers and feedback provided.

PROBLEM OF THE STUDY

It is obvious that e-learning has defined the noughties, this study is therefore interested in how, and the extent to which e-learning is enabling learning within the context of distance education in the University of Lagos (Unilag) DLI part-time programme. There is yet to be enough research into how e-learning is enabling learning in distance education; many studies have focused more on the provision of facilities. It is taken for granted that e-learning tools are to be used for distance education, but not enough has been done to find out the extent to which they are applied and how successful they have been in aiding distance learning.

PURPOSE OF THE STUDY

The study examined and documented the application of modern technology and e-learning facilities to improve academic efficiency in the teaching/learning process. The study was to explore the extent of use of e-learning provision and how it has helped the self-directing efforts of learners in DLI. Specifically:

a) which e-learning tools were used
b) the level of use and the adult learners' response to the method, and
c) how far e-learning as a teaching method is effective in enabling self-learning.

SIGNIFICANCE OF THE STUDY

The DLI would benefit from an objective mirror of their processes which should inspire positive change. Learners would explore the wider range of available e-learning facilities in the Institute's repertoire and become more comfortable using them so that they can maximize the DLI part-time mode of learning, using technology appropriately.

RESEARCH QUESTIONS

The research was guided by seven research questions:

a) Which e-learning tools are available in DLI?
b) Do students have access to the e-learning tools?
c) What do they use the Apps for?
d) What is the frequency of use of the available Apps?
e) How comfortable are the learners with e-learning?
f) How far is e-learning as a teaching method helping self-learning?
g) Which are the challenges encountered in the course of e-learning?

RESEARCH MEHTODOLOGY

The study was survey in nature, seeking opinion of the learners and lecturers in the Unilag DLI. The Institute had an estimated 15,000 learners for the 2017/2018 session according to university records. There were levels 1 to 6 including all the departments. The participants were stratified according to their levels and years 1 and 2 were not

sampled; only those who have experienced the use of e-learning for longer responded. Respondents were proportionately sampled, made up of learners (120 from the department of Accounting and Business Administration; 75 from Social Sciences, and 25 from Education (Sciences) - all from levels 3 to 6) making a total of 220. Also 30 facilitators in the Institute were interviewed, mainly to corroborate learner's input, but also to get their own handling of the e-learning facilities for teaching/learning purposes. Respondents were randomly selected, making a total of 250 in all. A 20-item structured, appropriately tested Opinionnaire was used for data gathering, along with structured interview sessions with facilitators including an Administrative staff, and responses were analyzed quantitatively, using percentages.

FINDINGS AND DISCUSSION

In response to the first research question on available e-learning tools in DLI, the level of availability of e-learning resources were given by the Administrative Office and supported by Lecturers and Students' responses. The Institute provides computers and online facilities with Learning Management Systems (LMS) and Open Education Resources (OER), apart from the regular Microsoft Office features like PowerPoint, Excel, Word and YouTube, which the learners could use for desktop publishing and e-learning. However, though the Institute has computers available for student use and free internet services, they were hardly enough to service the multitude of students. In any case, the idea was that students should be able to use their own facilities from their location, as long as they can connect centrally. Students are given tutorials on how to use the LMS during their orientation through the Application Induction Course. The LMS contains different Apps that could assist the learners to organize their work, link up with other learners to network and generally communicate with fellow learners as well as their lecturer on the internet. Reciprocally, students have their own individual devices they use to connect.

The second question sought to find out students' access to the available e-learning tools. Up to 187 (85%) of students claim to either have their own Personal Computer or have individual access to one at work, albeit with limited internet connections. Some 64 (29.1%) students have individual Smart Phones which could be synchronized with online Apps for group or individual learning. 201 (91.36%) have access to Facebook, Twitter and Instagram accounts where they could perform several functions - follow, post, friend, receive and send messages, send out information, chat, ask questions and get instant feedback as well as research; and majority of their examinations are taken online within the school premises and facilities. They use the regular Microsoft Office features with internet connection to link with DLI's LMS to download and upload learning materials and for desktop publishing. In addition, all Lecturers claim to blog instructions (and the odd vlog), podcast and post reading materials and ensure students' modules are uploaded on to the website. Thus the LMS remains the primary mode of contact with students by the lecturers where they post assignments and receive responses from the students.

The third question was interested in how the available Apps were used. In terms of what the Apps were used for, responses were diverse; Lecturers post blogs on news and updates on the students' website and the dedicated LMS supports self-learning. Respondents were asked what they used the most popular e-learning tools for in reality, their responses are documented below in Table 1:

Table 1: Use of Apps for e-learning

e-learning App	**What students use it for**
YouTube	To watch videos, mostly leisure, and for personal business
Microsoft Office, LMS/OER, LindedIn	To download and read modules and lecturer's posts, do individual assignments and quiz after, to e-mail as well as for minor desktop publishing
WhatsApp	To send messages to friends and make personal contact
Facebook	To find, make and keep up with friends, post photographs, send messages
Instagram	To send information to fellow students, gossip and post the occasional promotional personal advertisement for product sale
Twitter	To state personal opinion on any topic, which can be controversial, re-tweet other people's tweets
Cell phones	Networking, to call and text, to send information to others, update, etc

Table 1 details what the students use the Apps for, and it is seldom for academics. The LMS is still the most convenient for the DLI but other features could be explored to expand the functions and make them more suitable for cooperative and collaborative learning, also more academic use could be found for even the Social Media Apps, for example:

Twitter: to follow key officials of the university like the Vice Chancellor and Institute Director as well as their lecturers; the Examination Board for curriculum updates, follow the government for comments on policies or general educational situation and the Institute's Administrative Office.

YouTube: lecturers could post tutorials and forward links to educational channels and students could self-teach with instructional videos.

WhatsApp: could be used for emergency messages like a quick instruction, it can be used for sharing ideas and brainstorming among students, etc.

Facebook: could be used to follow academic groups, follow the Department, University, Administrative Staff, NUC, and its video capabilities put to more use. It also has dedicated pages for specific subjects that could be used as resource.

Instagram: Would be good for Marketing students in Business Administration Department as they could follow huge corporations, follow celebrities to see how they use the App to advertise and monetize their products by using them as Case Studies.

Generally, because of the anonymity involved and because sources of information cannot usually be verified, some of these Apps may be difficult to use for serious academic work. However, ways could be found to make them relevant.

For virtual learning situations, other useful Apps like **Zoom** and **MSTeam**, which are academic platforms could be used to create virtual classrooms situations and group discussions scheduled. It will be necessary to first plot a calendar for events, using Office 365 (Microsoft e-mail) to schedule the chat time.

Class Notebook is Software that could be used to give lectures in real time. There is also **Virtual Notebook** where whole essays could be written online in real time, whether individually or in groups, and everyone can contribute and edit, even the lecturer can do virtual grading of assignments as they are being written and the student will get instant feedback.

Excel is especially useful for Accounting students – they could work with Live Excel Spreadsheets where they all collaboratively edit, add, remove and everyone can see what is being done and by whom. Group or individual assignments could be completed online in real time even including the lecturer's input.

The Massive Open Online Courses (MOOC system), where university short courses are taken online could also be used as a resource for learning. However, the prohibitive cost of maintaining such platform has prevented many universities from running it.

The fourth research question was on the frequency of use of the e-learning tools. Respondents claimed to use the Apps thus: WhatsApp 97 (44.1%); LinkedIn 5 (2.3%); Instagram 38 (17.3%); Facebook 54 (24.5%); Twitter 26 (11.8%). They also used the internet to remotely connect to the Institute's LMS to upload, download, e-mail and generally interact with their lecturers. The LMS is the one that all claim to use for educational purposes, though further query revealed it was more of a one-way communication, as the lecturers post and students check the website. Wider dissemination is largely by cell phone to other students in the department, often from the class representative. YouTube was popular, though lecturers do not post content on it. They all use the basic computer functions in Microsoft Office, though the proficiency levels varied. In terms of frequency, they all generally connect to DLI's LMS an average of once a week or even a fortnight and may go for a while without connecting from their various locations. But they do use the social media more frequently, albeit for different reasons; they call their mates to chat and send texts and share pictures and videos on WhatsApp and Facebook, etc, but not to do assignments or group work collaboratively on the platform. As can be noted, these Apps are more suited for social communication. However they can be, if properly harnessed, useful for e-learning as well. Limitations in message lifespan, privacy issues and length of messages mean social media can only be used for more specific educational purposes. YouTube, on the other hand, has huge potential as it can be used more for academic purposes. Lecturers can post instructional videos and even full lectures. Lecturers can recommend useful links, while students can self-teach from the videos. Some students also claimed to have used it for research. Everyone uses text messaging and phone calls to stay in touch and pass on messages. Only 59 (26.8%) claimed to have submitted any form of assignments online on the Institute's LMS platform. Social Media is used occasionally to inform others about instructions from their lecturer for assignment. There were no reported cases of student to student academic interactions, group projects or collaborative work online, nor synchronous group discussions; devices were largely used asynchronously at the students' convenience.

The lecturers claimed, as part of the teaching/learning process, to post assignments in chat rooms for students' reaction and learners were expected to respond via the same avenue, alternatively by e-mail. The DLI's ultimate goal is virtual learning, to satisfactorily service their vastly dispersed clientele, and obviously this is yet to be achieved. Lecturers agreed mainly to uploading modules (which were available in hard copies too). They also had audio CDs to augment learning. Even lecturers did not utilize Smart Phone facilities as much. It is Smart Phones that were sophisticated enough to raise levels to true e-learning as they can perform multiple functions, same as computers can, with remote access capabilities. The Institute now has e-tutors who are experts in e-learning to enhance the use of technology-dedicated learning. If the available e-learning tools were used as prescribed, the learning opportunities will be multiplied while continued use will heighten students experience as mature learners and encourage more self-learning initiatives.

The fifth question was on how comfortable the students were with the use of the e-learning tools. Findings revealed that majority of the learners were still wary of e-learning as a teaching/learning method, and have no choice but to use it. Lecturers were also reticent as all of them largely used the LMS and e-mail to exchange academic work. 53 (24.1%) of the learners claimed to be very comfortable with e-learning, 77 (35%) were averagely comfortable, while the majority at 90 (40.9%) confessed to not being comfortable at all with the use of e-learning tools and learning on their own without the help of their lecturers. When asked if they would suggest another method 125 (56.8%) would like more face-to-face contact. This suggests that there is still a bit of technophobia with those not totally comfortable with technology. Many still struggle with independent learning and benefit more from the mandatory six-week contact hours of revision they have before their examinations. Nobody used the virtual library facilities, and some were not even aware of its existence. They were still dependent on physical books, though they can use the computer to search for information and research.

The sixth question asked about the effectiveness of the e-learning tools in terms of helping the learners realize their academic goals and become more independent learners. It asked how far e-learning as a teaching method was helping DLI part-time students. 77 (35%) of the students felt that e-learning was not helping them with self-learning. Not much has changed as this agrees with the previous finding by Bakare (2018). Although students have posted comments on the website's chat rooms and retrieved assignments, none had created nor hosted group collaborations and live discussions in a virtual classroom environment. There is so much untapped potential for cooperative learning that efforts need to be greatly increased to ensure that e-learning is used as it should be; learners need to be more comfortable in order to benefit from e-learning. The use of e-learning tools would help the learners become more proficient through regular practice. Independent learning cannot flourish under the wrong conditions; neither will critical thinking, active learning and reflection foster self-directed learning. E-learning will suffer unless proper tools and skills are given to the learners, otherwise, heutagogical and other required principles are not being adhered to.

The high figure of disagreements that e-learning improved learners self-learning suggested that there were still underlying unresolved issues. This may be related to many still being uncomfortable with technology, and favouring face-to-face encounters; especially since previous study by Bakare (2018) showed that students did not necessarily become better users of the internet as they progressed on to the next class. There is thus the need to ensure learners get familiar with e-learning enough to gain confidence in the method and be able to maximize learning gains.

In terms of challenges encountered, 64 (29.1%) listed cost of equipment for e-learning, 26 (11.8%) cited lack of proximity to the DLI; 88 (40%) complained of the lack of time to combine work and other responsibilities with their academic pursuit, while 42 (19.1%) confessed to the fear of technology or simply not knowing how to use some of the Apps. On the whole, the lack of access to internet and constant power supply, especially by learners has been the bane of e-learning efforts by DLI's prospective learners.

The recent COVID-19 pandemic and the emerging culture of social distancing has exposed the glaring need for more distance education in Nigeria and the grossly unprepared nature of tertiary institutions for this mode of learning. It is apparent now that the education system, in general, must consider e-learning more in mainstream education, and not only for distance education. This calls for massive investment in the education system and retraining for learners and facilitators to handle it. The education systems in advanced nations that have currently seamlessly transitioned to online contact with students to continue their education from their homes have spent years preparing and supporting e-learning.

CONCLUSION

There is no doubt that e-learning is beneficial to the distance mode of education and self-education. However, when users do not maximize the opportunities, or are not comfortable, the advantages are reduced. Some benefits accrue in distance education, like lack of pressure from specific timelines, location and resources and this could increase opportunity for reflection and critical thinking, and ultimately, self-learning. Also, the internet makes for a vast storage space as resources can be accessed online and kept in the 'clouds'. The flexibility makes learning more comfortable. It is also easier to link up with fellow learners, collaborate and organize virtual meetings that can expand the reach of what is learnt, and extend the range of interaction for more globalized education. Virtual universities are examples of how e-learning can be successfully harnessed for best results, as facilitator and leaner may never meet, yet content is covered and examined and certificates awarded. What DLI has at the moment is more of blended learning in a dual rather than mixed mode setting. Mastering the basic e-learning functions could assist the learners to organize their work, link up with other learners to network and generally communicate with fellow learners, as well as their lecturers. The formality of the learning situation in DLI makes it even more imperative to maximize the use of e-learning. DLI students tended to do more during the required mandatory contact hours of face-to-face revision sessions before their annual examinations. If distance learning is to be practiced the way it should be, then using the various tools available in e-learning remains the best option for students to fulfill their learning goals, and in line with adult education principles to fully gain autonomy and self-confidence.

Distance, by default, simply translates into more focus on the individual learner. This flexibility of the e-learning experience invariably saves time and creates a more matured learner who gets better at managing his learning using various forms of communication technologies.

There are multiple Apps that could be used as tools for engaging learners in collaboration, using different forms of cloud technology. Apps used as a base where learners, working in a group or alone, could remotely access information from cloud storage. Multiple benefits are derived from group efforts including idea development and sharing, holding of virtual meetings, project collaborations, online essays where all can contribute and edit, instant feedback to queries, all of which will help to enhance productivity; learners could even multitask. The flexible and interactive use of online Apps gets learners more involved, invested and in control, which promotes knowledge retention and autonomy. The more they use and become skilled with the apps, the more they mature as learners. All these agree with the principles of andragogy, heutagogy and transformative learning in adult education. There is no reason why e-learning cannot be fully deployed as it can only engage learners more, encourage learning and successful goal achievement; and reliance on their own ability and resourcefulness to become more independent learners. Facilitators must however be re-trained and re-orientated to manage e-learning and embrace ceding control of learning to the learners more.

RECOMMENDATIONS

- Findings indicate that the myriad of tools for delivery of distance learning are yet to be fully explored in the Unilag DLI. More e-learning tools should be made available for students' use and more students enabled (through university soft loans and subsidy) to acquire their individual computers and data subscription.
- Lecturers and students should dedicate more time to familiarizing themselves with the various e-learning options available, more classes taught on how to maximize the use of available resources.
- More Apps should be incorporated, but more importantly, online collaborative work encouraged through group assignments scheduled at mutually agreed time so that students can contribute to discussions, ask questions and be more invested in their learning through the virtual classroom experience. YouTube use could be expanded and lecturers upload instructional videos and forward useful links, while students equally use it to self-teach. There should also be better use of the university's virtual library with its extensive and current book and Journal selections.
- Obviously the more students use and get familiar with the Apps, the more comfortable they will become as self-learners, and less fearful of technology. This will make them appreciate how technology is adding value to teaching/learning.
- Students should be challenged to be more adventurous learners who would explore fearlessly with curiosity for self-discovery, be more introspective and motivated to initiate learning, which makes for a mature and lifelong learner.

It is mandatory for distance learners to adapt to the changing times, teaching/learning methods, curriculum content; sourcing for resources on their own and locating where, when, how and what to learn continually. The lecturers should be guides whose role diminish as the learner becomes more confident and self-driven and develop their capacity and capability to learn. Visual elements must be copiously utilized to fill the gap created by the distance that limits the physical human contact in the delivery of distance education. Facilitators should slowly transition from andragogy to heutagogy as a 21st century necessity for teaching/learning.

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The Capstone Lab Experience As A Course Based Undergraduate Research Experience: Premed Students As Partners

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ABSTRACT

Biochemistry Course Based Undergraduate Research Experience (CUREs) is a project-based learning with performing experiments, bioinformatic workshops, analyzing data, writing a report in a research paper format and presenting data helps the students to develop different skills: hand-on experience skills, problem-solving skills, writing and communication skills. Moreover, the project-based learning allows the students to mimic the research environment, many of them for the first time. In fact, having a series of linked experiments with an affinity to solve a problem/answer to a question let us move away from the traditional type of laboratory experiments based on observation and offer a curriculum that helps to develop scientific reasoning (Handelsman 2004; Gallet 1998). Even more, the project-based learning can be more challenging for the students by presenting more complex problematic (Craig 1999; Muth and Chihade 2008).

Understanding Biochemistry through complementary experiments miming a research project is one of the best ways to introduce, to undergraduate students. This kind of multi steps laboratory experiments helps the students not only to understand better the basic concepts of Biochemistry but also to better appropriately mimic a "research environment". We have designed a 13-week laboratory project as one of the three component of a new course "Capstone Laboratory Experiments" designed for Premedical 2 students at Weill Cornell Medicine in Qatar. This project allows to the students to reinforce their ability to drive a research project, to make decisions, optimize conditions and finally interpret and present their data.

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Gender Differences In Organizational Branding Propensities Of Undergraduate Students

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INTRODUCTION

Marketing studies related to consumer behavior preferences among males versus females have not had a long history, as research on organizational marketing strategy variances based on the gender of the consumer has been active for only one or two generations. Recently, these intended organizational branding initiatives have shifted from traditional to digital marketing. This study will assess brand preferences of undergraduate college students depending on gender by analyzing their cognitive reactions to a compilation of classic television commercials.

BACKGROUND

Branding is the creating of a positive image of an organization in the mind of an onlooker. It has been an integral aspect of studies related to marketing strategies of the past several generations (Rao et al, 2004; Uhlmann, 2005; Mukherjee & Balmer, 2007; Cayla & Arnould, 2008; Clifton, 2009; Hartwell & Chen, 2012; Hanna & Rowley, 2013; Jones, 2017). Overarching branding strategies rely directly on long-term organizational goals and are facilitated by the marketing department (Floor, 2006; Wohlsclegel, 2011; Gronlund, 2013; Brown, 2016; Murphy, 2016).

Current studies related to branding have been expanded from traditional organizational branding to niche areas such as the branding of natural resources (Bryant, 2013), health products (Anker et al., 2011), museums (Wallace, 2006), political parties (Marland & Flanagan, 2013), extremist organizations (Ligon et al., 2015), and sustainable cities (Barthold, 2018).

Organizations today spend a lot of money on marketing research to build their brands, and technology has and will play an increased role (Verklin & Kanner, 2007). In the past, television commercials (TVCs) have often established organizational branding initiatives. The goal of a TVC is to appeal to the consumer so that the consumer remembers the commercial and is more likely to buy the product. One strategy of traditional branding via TVCs has been enhanced by organizational identification, particularly through a logo, which is more likely to be depicted at the end of the TVC today.

Viewers of TVCs are more fickle than ever. For example, consumers may fast-forward or navigate past TVCs that they do not prefer (Elpers & Pieters, 2003). Grindstaff and Turow (2006) predicted the emergence of a "video culture" (p. 103) in which organizations will increasingly employ digital-interactive technologies aimed at branding. Today, TVCs can easily be converted from traditional television to digital form, "at near zero marginal costs" (Waldfogel, 2017, p. 195). TVCs will take on similar consumer-driven technologies as part of organizational marketing strategies in the future.

American TVCs generally show the brand name earlier, more often, and for a shorter duration than typical television commercials from other countries (De Mooij, 2005; Elliott, 2005; Zhou et al., 2005) because American attention spans are comparably shorter. Yunus (2016) detailed how brand image can be enhanced through TVCs as they promote viewers' ability "to *see* the opportunities" on their screens in a way that other media do not necessarily provide. TVCs will continue to be part of an organization's brand strategy and will continue to evolve from television-specific to being integrated into technology-based online and interrelated social media marketing efforts (Newth, 2013; Speck, 2013; Watkins, 2018).

The popularity of TVCs has spawned numerous academic studies on their effects. These studies have focused on consumer behavior topics such as product wear out effects (Calder & Sternthal, 1980), variables prompting consumer acceptance (Belch, 1982), repetition and commercial length (Rethans et al., 1986), and consumer recall effects (Singh et al., 1988). TVCs have been analyzed from the perspective of various consumer age segments to investigate their impact. Younger consumers are coveted more by multinational organizations because younger consumers who are loyal will make more money for those organizations over time. This preference is shown by the fact that advertisers pay a premium for access to a younger demographic of viewers.

Over the years, the impact of TVCs on the preferences of various age cohorts have been studied, including children (Blanc, 1953; Resik et al., 1977; Jeffrey et al., 1980; Galst, 1980; Greer et al., 1982) and teenagers (Wainwright, 1980, Lee & Browne, 1995; Ross & Stein, 2008; Shea, 2008). Of particular relevance to this study is the research on the effects of TVCs on college students. In the past, the consumer behavior tendencies of college students have been studied to assess the impact of TVCs on topics such as economics (Paden, 1977), tobacco advertising (Crawford, 2014), and sexism (Kassin et al., 2010).

Over the past several decades, studies about marketing segmentation have been focused on gender (Wolf, 2009; Meyers-Levy & Zhu; 2010; Otnes & Tuncay-Zayer, 2012; Moss, 2017; Dobscha, 2019; Zawisza-Riley, 2019). Consumer behavior analysis based on gender has uncovered tendencies that are often gender-specific. For instance, Moss (2017) discussed how marketing should be designed keeping in mind that and men and women react differently to different colors, and that men prefer objects that are moving, whereas women prefer smiling faces.

As segmenting based on gender has been widely adopted, more nuanced gender-based marketing approaches have begun to be implemented. For instance, marketing based on gender has received attention in studies on political advertising (Sapiro et al., 2011; Zotos et al., 2018), children's advertising (Bakir & Palan, 2010; Foss, 2019), marketing ethics (Peterson et al., 2001; Lund, 2008), and viral marketing (Vesey, 2013). Nevertheless, Dobscha (2019) stated that gender in marketing has not yet received the focus and attention that it needs, and Moss (2017) warned that gender-related biases arise when marketers do not consider differences in consumer behavior preferences based on gender.

This study will assess the likelihood of positive branding by utilizing several categories in which students will assess commercials.

METHODOLOGY

Previous research on TVCs has used predictive studies, a type of experimental design used to ascertain when and in what situations an event will occur. In this model, the goal is to discover which types of commercials or attributes within commercials prompt viewers to react cognitively, leading to a specific consumer behavior response. Past studies attempted to form relational or causal hypotheses. The purpose of this study is to ascertain if gender differences exist among undergraduate students in their preference for TVCs.

This study analyzed the cognitive consumer behavior of undergraduate college students toward "classic" American TVCs spanning multiple eras. Specifically, a list of the 50 most influential commercials was developed based on various surveys of marketing industry specialists (XYZ, XXX, YYY, ZZZ). Their cognitive reactions were gathered to gauge their response to these commercials in the same fashion that they react to videos on social media. An immediate reaction was preferred rather than after time to reflect and conduct further investigation because branding is often associated with thoughts and feelings.

The same commercials were shown to students in three institutions of higher education (two public, one private) from 2006-2019. The students surveyed were majoring in either a business- or technology-related field. Each TVC was played in class in its entirety, along with a brief script introducing it. Students were then asked to rate each commercial on five components: 1) Marketability, 2) Memorability, 3) Likeability, 4) Chance of Success, and 5) Level of Classicness. Each item was ranked on a scale of 1 = very low, 2 = low, 3 = medium, 4 = high, 5 = very high. In addition, the 50 commercials were labeled as having a script intended to be humorous or comedic.

As such, the model contained the following discrete variables, which served as predictors, in the experimental design: 1) Gender, 2) Major, and 3) If the commercial was intended to be comedic (Humor). Since the various years in which the commercials were produced (Year) had so many values, the year was treated as a continuous variable in order to provide for the best explanation within the model. To best interpret the intercept within the model, the year was centralized and thus could take on any value (calculated as year = year – mean (years)). This process scaled its value, whereas the centered year = 0, or the mean value of all years.

To allow the algorithm to develop the relationships between variables to best predict future values (i.e., fit the model), a generalized linear mixed model was determined to be the best fit. This model is a type of predictor containing random and fixed variables in order to form hypotheses. In this instance, the commercials themselves served as random factors and were interpreted as to how they affected the relationships and interactions between Gender, Major and the Commercial, whereas the interactions among Gender, Major, Humor, and Year were designated as fixed factors.

This study will utilize the models for memorability, chance of success, and classicness to assess gender differences in order to determine the best factors determining brand assessment. By conducting this multiple hypothesis test (a style of Chi-square test or a more specific style of generalized linear model) to explain the variance (which is designed to test for homogeneity), the final model for each interaction is seen below.

$$Memorability_{ijmk} = \text{Gender}_i + \text{Humor}_j + \beta(\text{Year}_{ijmk} - \overline{year}) + \text{Commercial}_k + (\text{Commercial} * \text{Gender})_{ik} + (\text{Commercial} * \text{Major})_{mk} + error_{ijmk}$$
$$i = j = m = 1,2; k = 1,2,3 \dots,50;$$
$$\text{Commercial}_k \sim \text{N}(0,0.12269); (\text{Commercial} * \text{Major})_{mk} \sim \text{N}(0, 0.058);$$
$$(\text{Commercial} * \text{Gender})_{ik} \sim \text{N}(0, 0.0175); error_{ijmk} \sim \text{N}(0, 0.992)$$

Figure 1. Model for Memorability

$$Success_{imk} = \text{Gender}_i + \text{Commercial}_k + (\text{Commercial} * \text{Gender})_{ik} + (\text{Commercial} * \text{Major})_{mk} + error_{imk}$$
$$i = m = 1,2; k = 1,2,3 \dots,50; \text{Commercial}_k \sim \text{N}(0,0.149); (\text{Commercial} * \text{Major})_{mk} \sim \text{N}(0, 0.045); (\text{Commercial} * \text{Gender})_{ik} \sim \text{N}(0, 0.0169); error_{imk} \sim \text{N}(0, 0.905)$$

Figure 2. Model for Chance of Success

$$Classicness_{ijmk} = \text{Gender}_i + (\text{Gender} * \text{Humor})_{ij} + (\text{Humor} * \text{Major})_{jm} + (\text{Gender} * \text{Major})_{im} + \beta(\text{Year}_{ijmk} - \overline{year}) + \text{Commercial}_k + (\text{Commercial} * \text{Major})_{mk} + (\text{Commercial} * \text{Gender} * \text{Major})_{imk} + error_{ijmk}$$
$$i = j = m = 1,2; k = 1,2,3 \dots,50; \text{Commercial}_k \sim \text{N}(0,0.124); error_{ijmk} \sim \text{N}(0, 1.075)$$
$$(\text{Commercial} * \text{Major})_{mk} \sim \text{N}(0, 0.07557); (\text{Commercial} * \text{Gender} * \text{Major})_{imk} \sim \text{N}(0, 0.01547);$$

Figure 3. Model for Classicness

RESULTS & FUTURE STUDIES (UNDER CONSTRUCTION)

Likelihood ratio tests were conducted to examine and analyze the different statistical models, using the variables in the above model to interpret how they interact with each other. Alpha = .05 was utilized; those variables testing at a *p*-value > .05 were not significant, and those at *p*-value < .05 were significant.

From the above model and likelihood ratio tests, it can be confirmed that for memorability, "Gender" does have a significant effect on the mean and does play an important role on Memorability, with a *p*-value > .05 (along with "Humor" and "Year").

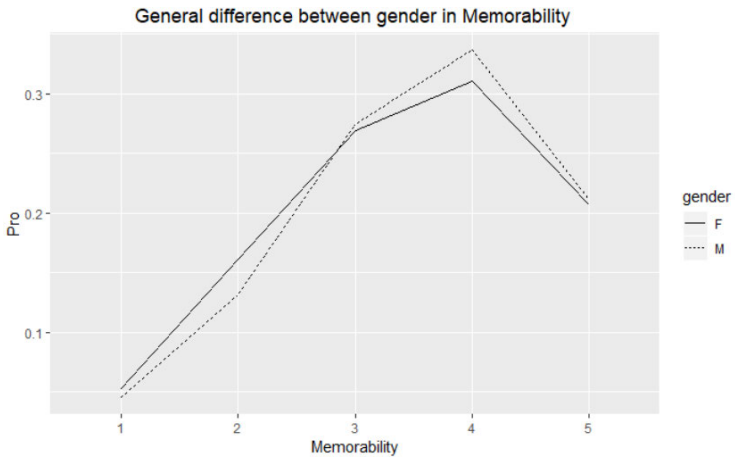


Figure 4. *Memorability Scores: Difference in Gender*

From the above model and likelihood ratio tests, it can be confirmed that for chance of success, "Gender" does have a significant effect and/or interactions on the mean, with a *p*-value > .05 (with no other variables being significant to predict chance of success).

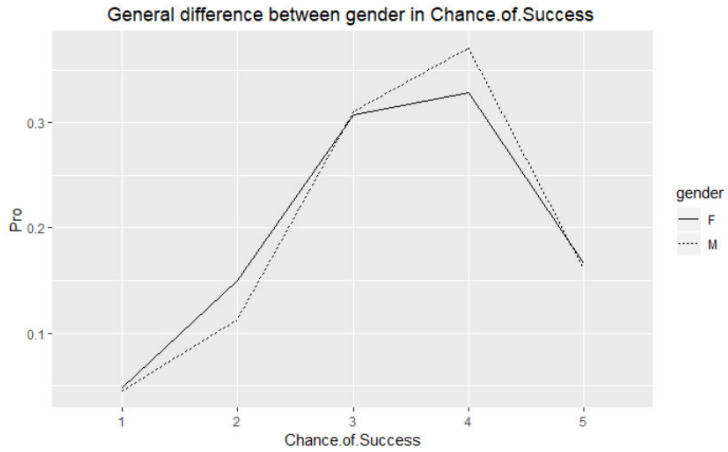


Figure 5. *Chance of Success Scores: Difference in Gender*

From the above model and likelihood ratio tests, it can be confirmed that for classicness, "Gender" does have a significant effects and/or interactions and does play an important role on Marketability, with a *p*-value > .05 (along with "Year", as well as the interactions between gender and humor, and humor and major).

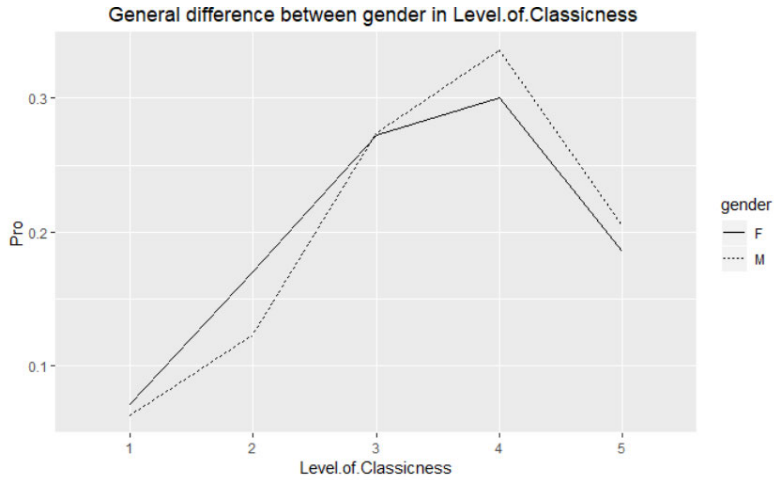


Figure 6. *Classicness Scores: Difference in Gender*

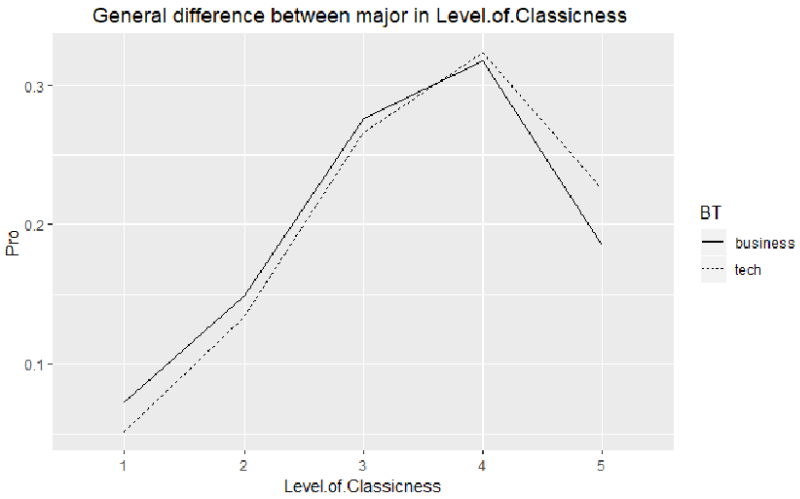
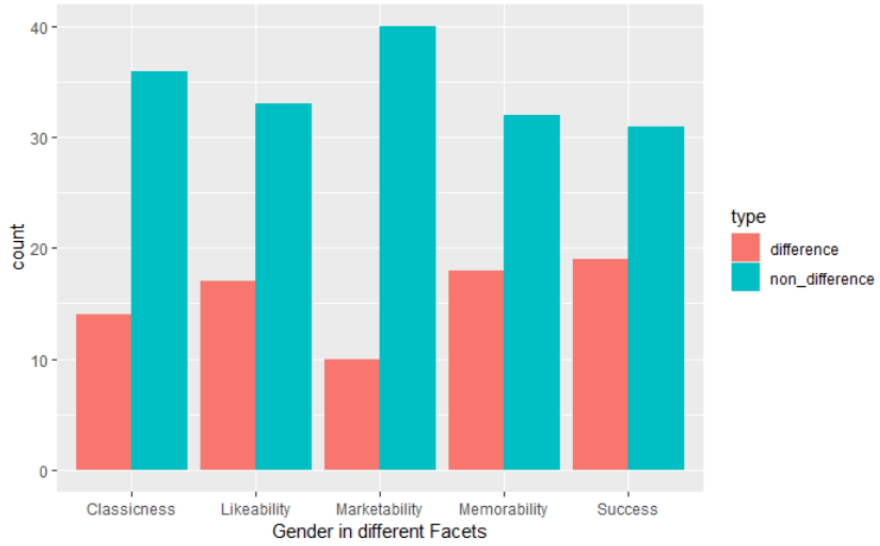
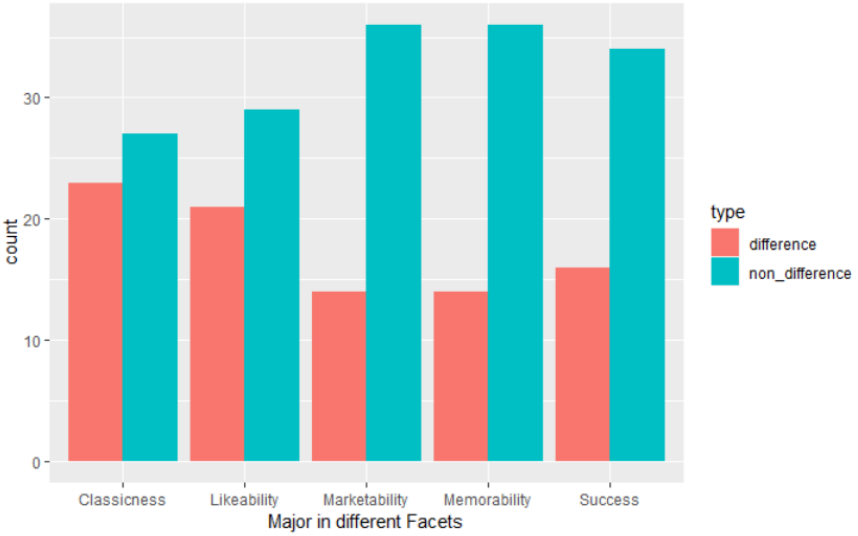


Figure 7. Classicness Scores: Difference in Major



Appendix A. Commercials Counts Plot: Difference and non-difference based on Gender



Appendix B. Commercials Counts Plot: Difference and non-difference based on Major

	Marketability	Memorability	Likeability	Chance of Success	Classicness
Gender	**0.07614**	**0.0005559**	**0.007216**	$1.61*10^{-6}$	$1.42* 10^{-8}$

Appendix C. P-value Data From Chi-square Test For All Commercials to Detect the Reaction in Terms of Gender and Major

```
> summary(Memorability_final)
Linear mixed model fit by maximum likelihood  ['lmerMod']
Formula: Memorability ~ gender + humor + year + (1 | commercial_index) +
    (1 | commercial_index:gender) + (1 | commercial_index:BT)
   Data: data

     AIC      BIC   logLik deviance df.resid
 23257.1  23313.1 -11620.6  23241.1     8106

Scaled residuals:
    Min      1Q  Median      3Q     Max
-3.4371 -0.6576  0.0618  0.7290  2.4524

Random effects:
 Groups                  Name        Variance Std.Dev.
 commercial_index:BT     (Intercept) 0.05863  0.2421
 commercial_index:gender (Intercept) 0.01751  0.1323
 commercial_index        (Intercept) 0.12269  0.3503
 Residual                            0.99191  0.9959
Number of obs: 8114, groups:  commercial_index:BT, 100; commercial_index:gender, 100; commercial_index, 50

Fixed effects:
             Estimate Std. Error t value
(Intercept)  3.517398   0.059425  59.191
gender1     -0.037325   0.018163  -2.055
humor1      -0.126500   0.062222  -2.033
year         0.010096   0.004083   2.473

Correlation of Fixed Effects:
        (Intr) gendr1 humor1
gender1  0.036
humor1  -0.192  0.000
year    -0.134  0.000  0.325
```

Appendix D. Memorability Model's Code Output Report

```
> summary(Chance.of.Success_final)
Linear mixed model fit by maximum likelihood  ['lmerMod']
Formula: Chance.of.Success ~ gender + (1 | commercial_index) + (1 | commercial_index:gender) +
    (1 | commercial_index:BT)
   Data: data

     AIC      BIC   logLik deviance df.resid
 21713.0  21754.8 -10850.5  21701.0     7817

Scaled residuals:
    Min      1Q  Median      3Q     Max
-3.4249 -0.6090  0.0310  0.7479  3.0180

Random effects:
 Groups                  Name        Variance Std.Dev.
 commercial_index:BT     (Intercept) 0.04491  0.2119
 commercial_index:gender (Intercept) 0.01691  0.1300
 commercial_index        (Intercept) 0.14985  0.3871
 Residual                            0.90491  0.9513
Number of obs: 7823, groups:  commercial_index:BT, 100; commercial_index:gender, 100; commercial_index, 50

Fixed effects:
            Estimate Std. Error t value
(Intercept)  3.45310    0.06138  56.259
gender1     -0.04350    0.01777  -2.448

Correlation of Fixed Effects:
        (Intr)
gender1 0.032
```

Appendix E. Chance of Success Model's Code Output Report

```
> summary(Level.of.Classicness_final)
Linear mixed model fit by maximum likelihood  ['lmerMod']
Formula: Level.of.Classicness ~ BT:humor + BT:gender + humor:gender +
    gender + year + (1 | commercial_index) + (1 | commercial_index:BT) +      (1 | commercial_index:gender:BT)
   Data: data

     AIC      BIC   logLik deviance df.resid
 23803.3  23887.3 -11889.7  23779.3     8061

Scaled residuals:
    Min      1Q  Median      3Q     Max
-3.1858 -0.6943  0.0516  0.7232  3.0398

Random effects:
 Groups                     Name        Variance Std.Dev.
 commercial_index:gender:BT (Intercept) 0.01547  0.1244
 commercial_index:BT        (Intercept) 0.07557  0.2749
 commercial_index           (Intercept) 0.12430  0.3526
 Residual                               1.07501  1.0368
Number of obs: 8073, groups:  commercial_index:gender:BT, 200; commercial_index:BT, 100; commercial_index, 50

Fixed effects:
                  Estimate Std. Error t value
(Intercept)        3.505344   0.116650  30.050
gender1           -0.108433   0.024441  -4.437
year              -0.009275   0.004166  -2.226
BTbusiness:humor0 -0.305837   0.148106  -2.065
BTtech:humor0     -0.177334   0.148417  -1.195
BTbusiness:humor1  0.165634   0.106765   1.551
BT1:gender1        0.059798   0.024309   2.460
humor1:gender1     0.045923   0.017558   2.615
```

Appendix F. Classicness Model's Code Output Report

The Relationship Between Experiential Learning And Teacher Efficacy In Student-Teacher Candidates: The *Text Talk* Project

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ABSTRACT

Academic achievement in English language arts assessment scores are below standard in the state of California. The numbers signify that a gap in learning exists. Teacher efficacy has been found to positively relate to student academic achievement. Teacher efficacy has also been shown to be sensitive to fluctuations during student-teaching. The current research aims to determine if a gradual release in responsibility during a time of student-teaching would increase a teacher's sense of self-efficacy in the classroom. Student-teacher candidates were scaffolded using the Text-Talk curriculum across a three-month period of time. Results show that student-teachers experienced a significant increase in self-efficacy by the end of the study.

Keywords: Student-teacher candidates, teacher efficacy, gradual release of responsibility

Business Delocalization And Adapting Taxation To The Digital Economy

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ABSTRACT

The digital economy impacts greatly on business organization since the possibilities for distributing intangible goods and services has resulted in new business models while also increasing the simplicity of company delocalization. Consequently, the international tax authorities, be it the OECD or the EU, are attempting to find solutions to the current fiscal problems; problems which have triggered a significant loss of tax revenue as a result of the obsolescence of the existing tax systems. Accordingly, the first real step forward in taxing the digital economy focuses on the concept of permanent establishment, seeking to adapt it to the new economic reality and creating a new tax on certain digital enterprises.

Keywords: Permanent Establishment, Digital Economy, Digital Services Tax, Tax Planning.

1. INTRODUCTION

The financial and social significance of the digital economy is an economic and fiscal phenomenon whose importance cannot be ignored. The appropriate taxation of digital transactions and of companies that operate entirely through the Internet generates positive externalities that benefit society as a whole. Hence, an adequate, flexible tax system adapted to the characteristics of the digital economy is the cornerstone for such an economy to develop correctly. It must be guaranteed that taxation is proportionate to the economic activity undertaken; businesses must not be fiscally punished with higher tax rates or a greater number of taxes, but neither should they obtain tax advantages, arising primarily from the ease of delocalization, simply because they are conducting digital economic activity.

The characteristics of companies operating entirely through the Internet allows them to seek locations where their tax burden will be very low, while they can offer their goods and services on a website to any individual, regardless of their location. This results in corporate tax base erosion in the end consumers' jurisdictions of residence. Consequently, both the Organisation for Economic Co-operation and Development (OECD) and the European Union (EU) have been studying and analysing such tax questions for over twenty years. However, despite the effort and time invested, the only certainty is that tax base erosion is occurring, that is, there is a decline in tax revenue in states where economic activity takes place. This is the result of business delocalization due to the emergence of novel business models based on the new information and communication technologies (ICTs).

This work will briefly outline the characteristics and the effect on taxation of the new business models stemming from the digital economy to then focus on the tax changes they have given rise to, such as the modification of the concept of permanent establishment and the question of a new tax on certain digital companies. Finally, the main conclusions of this work will be presented.

2. THE DIGITAL ECONOMY AND NEW BUSINESS MODELS

In today's economic and technological context, traditional business models are losing ground to digital companies, given that the latter offer a number of advantages compared to traditional companies, such as more competitive pricing, time savings from not having to travel to acquire goods and services and the ease of relocalization, since they do not

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need to move large infrastructures to pursue their economic activity. Thus, we can now distinguish between two business models, which, following ESCRIBANO (2019), are:

- New business models, which could be called "purely digital companies", whose activities are essentially focused on:

- Provision of electronic services: automated services provided by means of pre-programmed software. These include search engines, comparison websites, cloud storage, e-mail services, instant messaging, educational platforms, user-generated content platforms, collaborative platforms, streaming services, etc.

- Supply of digital goods: companies marketing previously tangible products that can now be made available in an intangible format.

- Pre-existing or traditional business models. Companies that utilise the Internet to complement their traditional business, using it as commercial showcase.

Furthermore, the new digital business models are characterised by a novel element of value creation, which, before the emergence of the Internet, had no significant economic impact, namely the information users of online businesses voluntarily provide to companies in order to access their website or to finalize the purchasing process. The data collected – age, sex, marital status, etc. – together with the users' browsing histories provides companies with highly important information, which enables them to offer personalised advertising according to each individual's likes and preferences, which, in turn, benefits the company. The company may store such data, but can also sell it to third party companies that can then develop digital content adapted to the same users.[2] The main activity of these companies is the study and analysis of such data to use it to obtain the maximum profit.

If we consider the characteristics of "purely digital companies", another common feature is that they can be established in any jurisdiction across the world since their goods and services are intangible. Hence, they seek locations where the corresponding tax burden is as low as possible, given that the residence state of their users has no impact on the development of the companies' activities. In short, businesses can devise a perfect tax planning strategy, which does not imply they are engaging in illegal or fraudulent activities, only that they are acting in their own interest, making use of calculated and sometimes aggressive tax planning, which leads to the erosion of tax bases in the different jurisdictions in which the economic activity is actually taking place.

Tax planning did not originate with the digital economy, but it is true that the characteristics of this economy facilitate the implementation of such planning. Both the OECD and the EU are conscious of this. Thus, they currently focus their efforts on adapting taxation to the digital economy in an attempt to prevent practices of tax evasion and avoidance and the subsequent erosion of tax bases as a result of aggressive tax planning. The outcomes of such practices negatively affect society as a whole, impacting public assets and services and diminishing the benefits of the welfare state.

Tax systems have still not been adapted to the new business models and the obsolescence of these systems has the serious direct consequence of losses of tax revenue. Although quantifying the loss of tax revenue is complex, the tax liability of "digital" and "traditional" companies can be analysed, with the conclusion that the tax burden of the former is substantially lower, with digital models being subject to an effective tax rate of 9.5%, while traditional models are taxed at 23.2%[3] (EUROPEAN PARLIAMENT, 2018). For this reason, the EU seeks to establish fair taxation for the digital economy, as the emergence of these new business models has given rise to undesired tax scenarios with negative effects on citizens and taxpayers.

3. A NEW CONCEPT OF VIRTUAL PERMANENT ESTABLISHMENT

One of the taxation concepts that has the greatest impact on corporate organisations is that of permanent establishment,

[2] BigData refers to the significant database Internet users generate with their movements on the World Wide Web. This has given rise to new business opportunities, leveraging the information provided by users free of charge. This information is then analysed and specific advertising is offered to each individual user depending on their characteristics and preferences.

[3] These figures refer to large digital companies operating in various jurisdictions.

since it is the traditional nexus between a company and the jurisdiction in which it is taxable. However, in the setting of ICT, the existing concept of permanent establishment is not effective for electronically provided services, given that it the fails to include intangible scenarios.[4] Thus, although the institutions initially opted for minor amendments[5] to this definition, the OECD and the EU are now working on the provision of new nexuses to help build a taxation concept that is valid for both traditional and digital economic activity. Their aim is to avoid business delocalization, which leverages the characteristics of the digital economy and the obsolescence of certain concepts in the current taxation system.

With the aim of avoiding base erosion in jurisdictions where economic activity takes place, the OECD, in its Interim Report, published in 2018, proposed, but failed to define, the concept of virtual permanent establishment. Meanwhile, the EU, aware of the economic and social problems caused by the obsolescence of the concept of permanent establishment, took a step forward in tax policy, issuing a proposal for a Council Directive laying down rules relating to the corporate taxation of a significant digital presence (COM (2018) 147 final), in pursuit of a new nexus that is valid for digital business operating across border. The aim of the directive is to tax digital services where they take place, in such a way that Member States' corporate tax (CT) systems are unaffected and revenue is not diminished. Consequently, the European Commission is to consider, for CT purposes, that a permanent establishment exists if a significant digital presence exists, which will be determined by meeting one of the following conditions:

- Revenues in one Member State exceeding 7,000,000 million euros.

- More than 100,000 users in a Member State in one tax period.

- The number of business contracts for digital services concluded by the same company in one tax period exceeds 3,000.[6]

Meeting any of these conditions means a permanent establishment will be considered to exist and such a business shall be taxed in the jurisdiction in which the economic activity is undertaken and not where the company locates its server, which thus far had marked the consideration of permanent establishment. The attributable profits[7] considering a significant digital presence shall only be attributable to the jurisdiction where they are generated and where the company locates the server of its goods or services.

If we focus on the problem of fiscal delocalization and considering the revenue threshold of 7,000,000 euros, there emerges once more the issue of tax planning, as business organisations can operate as different companies in order to reduce their tax liability, leaving once more unsolved the problem of tax base erosion. However, it is also true that this new criterion means implementing tax planning strategies is more complicated. To this end, and despite laying down these abovementioned criteria to determine a significant digital presence, and thus a virtual permanent establishment, the EU Directive recognises that the optimal solution would be to put in place a Common Consolidated Corporate Tax Base (CCCTB). Nonetheless, to implement such a proposal, it is necessary to solve the structural challenges raised by the digital economy.

[4] Article 5, Paragraph 1 of the OECD Model Tax Convention defines a permanent establishment as a fixed place of business through which the business of an enterprise is wholly or partially carried out.

[5] One of the first decisions taken in this respect and one key to the digital economy scenario was proposed by the OECD and adopted by the EU, whereby it was determined that a web page was not to be considered a permanent establishment as it was not a tangible element, and thus could not be considered a permanent establishment. In contrast, a server could be considered a permanent establishment given it was a physical element, despite its easily being moved from one jurisdiction to another and being usable from a state other than that in which it is located.

[6] Regarding the conclusion of contracts for the provision of digital services: a) a contract shall count as a business contract if the user concludes the contract in the course of carrying out business activities; b) a user shall be deemed to be located in a Member State in a tax period if the user is resident for corporate tax purposes in that Member State in that tax period or the user is resident for corporate tax purposes in a third country but has a permanent establishment in that Member State in that tax period.

[7] The profits attributable to or in respect of the significant digital presence shall be those that the digital presence would have earned if it had been a separate and independent enterprise performing the same or similar activities under the same or similar conditions, in particular in its dealings with other parts of the enterprise, taking into account the functions performed, assets used and risks assumed, through a digital interface.

4. DIGITAL SERVICES TAX

As well as amending the concept of permanent establishment taking into account a significant digital presence, the EU has made a further proposal for a Digital Services Tax (DST).[8] The aim of this directive is to adapt the existing tax systems to the reality of the digital economy and avoid unnecessary losses of revenue as a result of business delocalization, which undermine the public finances of the Member States. Given the ineffectiveness of the measures thus far implemented, the need has arisen for a fresh approach to tax policy on the digital economy.

The tax will be applied to revenues from activities characterised by user value creation, and which are more difficult to tax under existing regulations, such as those:[9]

- generated from the sale of online advertising space;

- generated from the activities of digital interfaces that allow users to interact with other users and which may also facilitate the sale of goods and services between users;

- generated from the transmission of data collected about user and generated from users' activities.

The taxable persons under this new system will be entities meeting both of the following conditions:

- the total amount of worldwide revenues reported by the entity for the latest complete financial year exceeds 750,000,000 euros.

- the total amount of taxable revenues obtained by the entity within the Union for the latest complete financial year exceeds 50,000,000 euros.

The place of taxation will be the Member State in which the users of the digital services are deemed to be located in a tax period, irrespective of the location of the provider of such services. The DST corresponding to each Member State shall be calculated at a rate of 3% of the proportion of taxable revenues obtained in a specific Member State and becoming due on the next working day following the end of that tax period, and being payable within the following 30 working days. In addition, Member States shall be permitted to lay down accounting, record keeping and other obligations intended to ensure that the DST due to the tax authorities is effectively paid and which serve as measures to fight against tax fraud, evasion and avoidance.

The DST has been configured as a form of indirect taxation, which is perhaps debatable, given that it actually taxes base taxable income, without even making mention of profit. Hence, although the European Commission defines it as an indirect tax, this is open to discussion, with it plausibly being considered a direct tax. Moreover, taking into account that it applies to taxable revenues, it can also be considered to tax income that does not directly correspond to business profit, given that it does not account for the expenses necessarily incurred to obtain such income, which CT does. Consequently, it arguably taxes revenue already liable under CT, giving rise to double taxation.

In any event, it is a fiscal measure, which is intended temporarily, until the implementation of the concept of a significant digital presence, which aims to solve the problem of base erosion resulting from the nature of certain digital companies utilising the characteristics of their activities and the unsuitability of the existing tax systems to reduce their tax burden.

5. CONCLUSIONS

The tax base erosion derived from the digital economy and the ease with which companies marketing intangible goods

[8] The Digital Services Tax has been devised as a temporary proposal to mitigate the negative effects of not applying the concept of tax sufficiency principle and as a consequence of the rapid implementation of the new virtual permanent establishment, which requires the consensus of the Member States and the amendment of numerous double tax conventions to ensure the effectiveness of this change to the taxation system.

[9] Set out in Article 3 of the Council Directive on the common system of a digital services tax on revenues resulting from the provision of certain digital services. COM (2018) 148 final.

and services can engage in business delocalization is a reality that cannot be ignored by international tax administrations. They need to work together in pursuit of the broadest possible consensus on a solution to the problem of diminished tax revenues, an issue which directly undermines the sustainability of the welfare state. To this end, the OECD and the EU have been forced to adopt a change in approach to the question of taxing the digital economy while seeking to respect the principle of neutrality, without forgetting the no less important principles of flexibility, sufficiency and generality. The digital economy is an environment subject to the effects of rapid changes in technology and the development of excessively rigid tax systems may, in the short term, result in measures which are inefficient; a situation to be avoided at all costs given its negative implications.

The proposed tax policy measures seek to establish a new tax on the digital economy. Their aim is to modify the place of taxation of revenue obtained by digital companies, establishing they shall be liable for taxation where the economic activity takes place and not where a permanent establishment is considered to exist, given that such a concept has become obsolete. This system is built on the concept of a significant digital presence change, designed to reduce the possibilities of delocalization by digital companies. Implementing this measure, however, is far from simple, as it requires a broad international consensus and the modification of the double tax conventions signed by different jurisdictions, since these include the earlier concept of permanent establishment.

Given the impossibility of a swift application of the new concept of significant digital presence, a temporary measure has been proposed, that of a new tax that would only directly affect certain digital companies. The aim of both measures is to mitigate corporate tax base erosion and to establish the need for multinational enterprises operating in different states where they have no permanent establishment to pay tax on the profits obtained for providing services in the jurisdictions where the economic activity is actually undertaken. These two measures seek to alleviate the decline in public revenues as a result of the obsolescence of existing taxation concepts and the facilities for business delocalization.

Although both measures might, in the future, be amended and improved, they represent a major step forward in the taxation of the digital economy as they mark a change in international tax criteria. This change is necessary to avoid the base erosion of taxes on economic activity, which currently benefit companies in a specific sector, namely the digital economy. In any event, the application of taxation principles, consensus, coordination and swift action are all key to efficiently developing the taxation of the digital economy.

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How Is Your Commitment With Sustainability? The Point Of View Of Customers About Tourism Accommodation

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ABSTRACT

The present study is focused on the increasing interest that social and environmental aspects have in the managerial activity, especially in the tourism sector, due to the effect that this activity can generate on the environment, and inside a context of increasing awareness of sustainability in the society.

The increasing awareness and the implementation of strict regulations affect the way in which the companies develop their activity; however, these aspects have traditionally had low development inside small and medium companies in comparison with large ones.

In addition, other studies have established that consumers are more sensitive to the negative responsibility of companies than a positive one (Sen and Bhattacharya, 2001); it means, consumers do not reward committed companies, but they punish uncommitted ones.

The objective of this paper is to analyze the opinion of consumers about the sustainable actions developed by tourism accommodation, and how this variable influences the decision of consumers when they are looking for accommodation.

Keywords: Sustainability, Tourism accommodation, Consumer perception

Smart Tourism Destinations: Its Contribution To The Sustainability Of The Destination

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ABSTRACT

The sustainable commitment affects the way companies manage their activity, so they try to implement different activities in other of facing the challenge of sustainability.

Among those strategies to face sustainability, the actions of smart destination are gaining interest. In fact, innovation is considered inside the 17 objectives of sustainable development proposed by the United Nations.

Additionally, some countries try to implement Intelligent Tourist Destinations Programs; it is the case of Spain, through Seggitur, organization that proposes a tourism management model based on governance, innovation, technology, sustainability, and accessibility.

The objective of this paper is to analyze how the development of an intelligent tourist destination can influence on the maintenance of a sustainable destination. In addition, we pretend to offer the consumer point of view through its perception of the different actions to create an intelligent tourist destination and their effect on sustainability.

Keywords: Sustainability, Smart Tourism, Smart Actions

GMIC: Advanced Energy Efficient Clustering Routing Protocol Based Gregor Mendel Theory On Principles Of Inheritance For Internet Of Things

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ABSTRACT

Major challenge for designing energy efficient distributed clustering routing protocols is suitable rotation of the rule of Cluster- Head for network nodes. In this paper, we propose Gregor Mendel Inheritance Clustering (GMIC) distributed routing protocol influenced by Gregor Mendel Theory on principles of inheritance during CHs generation process. Proposed GMIC routing protocol promise effective CHs selection based on the previous services of CHs and residual energy resources of heterogeneous Wireless Sensor Networks (WSNs) based Internet of Things. Simulation results provide evidence that proposed model outperforms the existing state of the clustering routing protocols.

Keywords: Energy Efficient, Routing Protocol, Gregor Mendel Theory, Heterogeneous, Internet of Things.

I. INTRODUCTION

Internet of Things (IoT) is advanced and heavily deployed Information and Communication Technology (ICT) Application for modern day communication systems. Some applications IoT utilize thousands of sensor nodes organized complicated wired and wireless environments to develop information collection networks. These nodes are bound to collaborate in challenging deployment environments and effective routing is backbone to prolong the lifetime of unattended self-organized networks [1-6]. In limited resource environments of IoT applications rely on heterogeneous wireless sensor network (WSN) architecture and this is natural bridge of the researchers to make progress for industrial level IoT solutions [7-8].

In order to achieve reliable network lifetime in nature of unattended sensors deployment of IoT applications, it becomes more critical to design a solution that can maximize the functionality period of the network. Commercial success of such type of communication systems are directly proportional to the promised network lifetime. Existing solutions are focusing on the maximizing of initial capacity of deployed batteries and clustering of communicating devices to model cooperation system to share the processing and transmission burden [9-15].

Many routing protocols utilize single-hop cluster-based communications systems with coordination between network layer Medium Access Control layer functionalities to develop energy efficient routing protocols. These protocols show lifetime improvements as compared direct and location-based flooding algorithms [16-18]. Recently, design of Multi-hop routing protocols utilize many complicated algorithms for complex intra-cluster and intra cluster communications. These protocols also being tested in both homogeneous and heterogeneous network environments. Although the progress is being widely accepted and encouraged but still conventional routing protocols of WSNs also demand lot of design flexibility to be implemented in IoT applications scenarios [19-21]. The multi-level heterogeneity evolves naturally during the network operation where these following parameters are being observed and calculated; the initial energy, energy consumption, residual energy, link capacity, sensing capacity and even transmission range [22-24].

In this paper, we proposed an advanced energy efficient clustering routing protocol based Gregor Mendel Theory on principles of inheritance called; GMIC for WSN enabled Internet of Things (IoT) applications to enhance the efficiency of existing solutions.

II. RELATED WORK

Many exiting routing protocols of IoT networks provide open challenge for the researchers to reduce the proved drawbacks in addition, design the appropriated solution. Many improvements have witnessed to these solutions, which validate the progress of the research over energy efficient routing protocols. Research contribution of [4] proposes the Distributed Energy Harvesting Aware Routing (DEHAR) algorithm was based hop-count to reach the central controller called Base Station (BS) but this solution is only efficient in homogeneous network environment. In [5], researchers develop the Energy Harvesting Aware Ad-hoc On-Demand Distance Vector Routing Protocol (AODV-EHA). Although AODV-EHA design is originated by popular Ad-hoc networks and proposed the idea of energy harvesting but similar to DEHAR this protocol has limited to homogenous networks. DEHAR and AODV-EHA also ignore the efficient clustering formulations.

Some of the efficient clustering routing protocols include state of the art routing protocol called; Low Energy Adoptive Clustering Hierarchical (LEACH) [1] routing protocol. Although cluster formulation of LEACH is simple and profound and many extensions has been proposed over the protocol but the fundamental limitation of LEACH protocol is lack heterogeneity- awareness and lack of multi-hoping at inter-cluster level communications. In order to enhance the performance of LEACH routing protocol over larger networks the Multi-hop LEACH (MLEACH) has be proposed and tested [3]. LEACH and MLEACH both protocols have efficient clustering mechanism for homogenous networks environments but heterogeneity-awareness is required at this level to further prolong network lifetime of WSNs based IoT networks.

In [6-7] Stable Elections Protocols (SEP) and Enhanced Stable Elections Protocols (ESEP) have been proposed for two level and three level heterogeneity-awareness respectively. SEP and ESEP show significant performance but still have limitations due to single-hop inter-cluster communications. In order to resolve the technical limitations of above routing protocols we proposed GMIC routing protocol. Our proposed model is flexible according the architectural requirements of Internet of Things.

III. HETEROGENEOUS NETWORK MODEL OF GMIC

Initially, nodes distribution throughout network is random and multi-level heterogeneous nature as shown in Fig. 1. We execute logical step-wise nodes division over distributed nodes. At every step, CHs are being selected in each distribution and then further logical division is being performed. Fig. 2 and Fig 3 show the second and third level logical division where further CHs are being selected in new logical divisions. Fig. 4 to Fig. 7 show that all sub-divided regions are further four regions and after last logical division, total 64 sub-regions have been created. These selected CHs in sub-regions are utilized round-wise operation. In given round only limited number of CHs are advertised as final CHs. Remaining CHs are saved for next rounds to avoid CHs selection process in every round. This detail scheme of CHs selection and utilizations is given in next section.

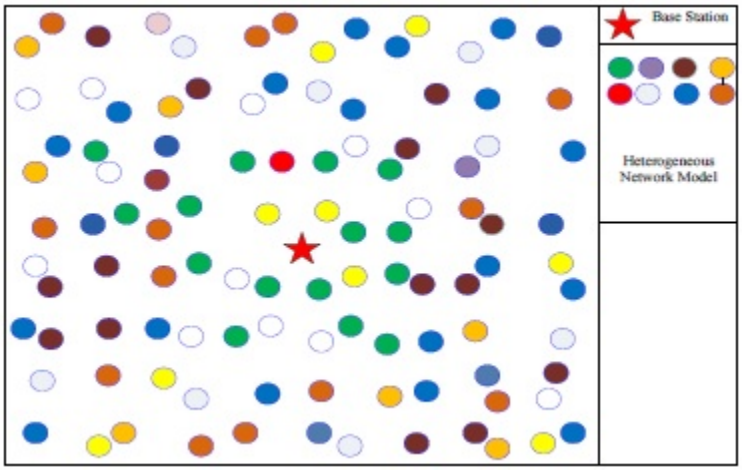

Fig. 1. Random network topology of Proposed Model

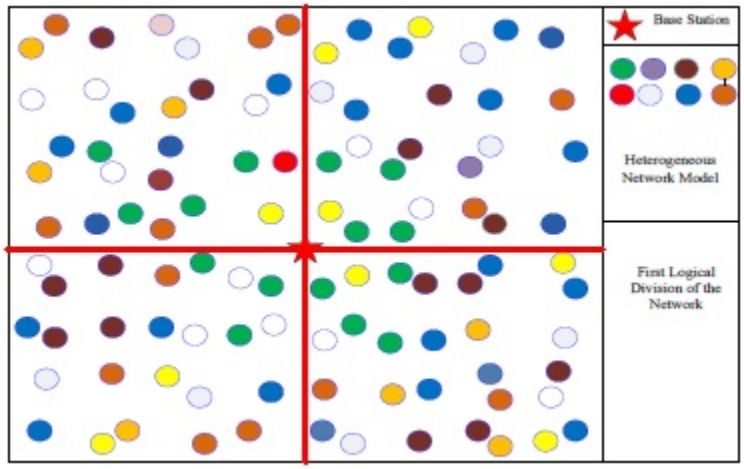

Fig. 2. First level clustering in logical sub-divided network region

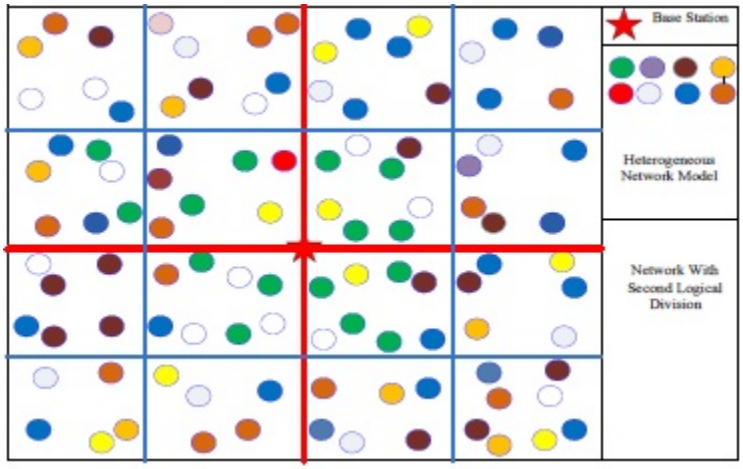

Fig. 3. Second level clustering in logical sub-divided network region

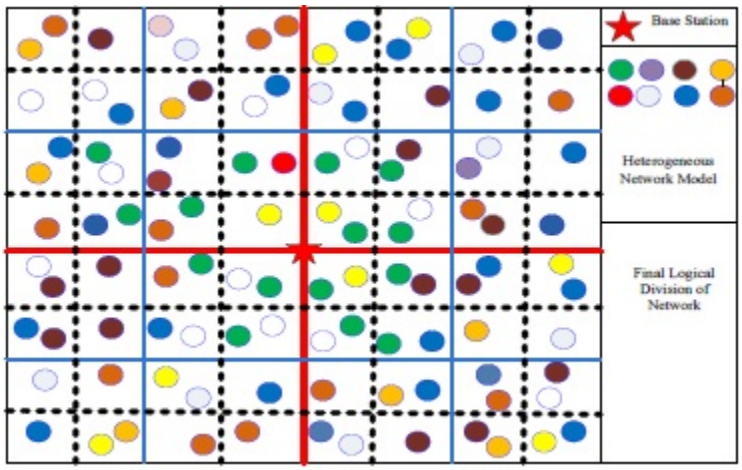

Fig. 4. Third level clustering in logical sub-divided network region

IV.PROPOSED MODEL OF GMIC

Proposed model Gregor Mendel Inheritance Clustering (GMIC) routing protocol is based on rounds operations. In which, each round is divided into cluster-head selection phase and Transmission Phase.

V. CLUSTER-HEAD SELECTION OF GMIC

In this Cluster-Head phase, CHs are being selected with the help of distributed hierarchal cluster formation algorithm. This distributed algorithm is intelligent enough to create suitable number of cluster heads. GMIC cluster formation is unique and more efficient as it not repeats the all computation procedure in every round. It means this cluster formation is heuristic based and utilize the computation procedure of last rounds. This previous rounds computation is very efficient in order to reduce the computation of current and next coming rounds. This reduction of computation results into shorter time setup phase and it means that cluster formation will be very fast. When the setup phase will be fast, it means most of the time network will be under the steady state phase. Longer study state will provide longer through put of actual traffic at base station and cluster head. The setup phase of GMIC algorithm is based upon the Gregor Mendel Inheritance Clustering (GMIC) algorithm. In which cluster head will be selected in future having the properties of current cluster-heads and previous rounds cluster heads. The setup phase is very much iterative and number of computational iteration will be different in different rounds. For efficient cluster formation, we define the different types of cluster-heads at different level as shown in different figures of section III. Now we define the iterative computational levels and cluster-head type generated at every computational level.

Parent Cluster Head

In the first computational level of first iterative-based round, all nodes announce themselves as a cluster head and these cluster heads are given name of parent cluster head. This cluster-heads act as ancestor of next *l* number of rounds. The value of is based upon the logical divisions of whole network area and number of iteration decided by the network administrator. It mean every logical created sector will contain a parent cluster-head. These parent cluster-heads will considered as 1st generation cluster heads. These cluster heads are shown as green color triangle In Fig 5.

Second Generation Cluster Heads

These cluster heads are generated int he 2nd computational level of first round. These cluster heads are derived from the parents or first generation cluster heads. Fig 6 contains yellow triangles which Are representation of 2nd generation networks? These kind of cluster heads are not available in logically divided sector. It means the sector, which are not having 2nd generation cluster-heads are out of the cluster-head election for the current round. It means

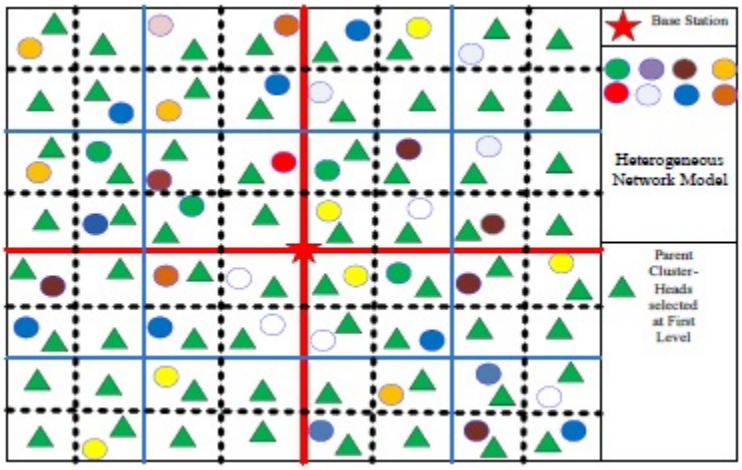

Fig. 5. Fourth level clustering in logical sub-divided network region

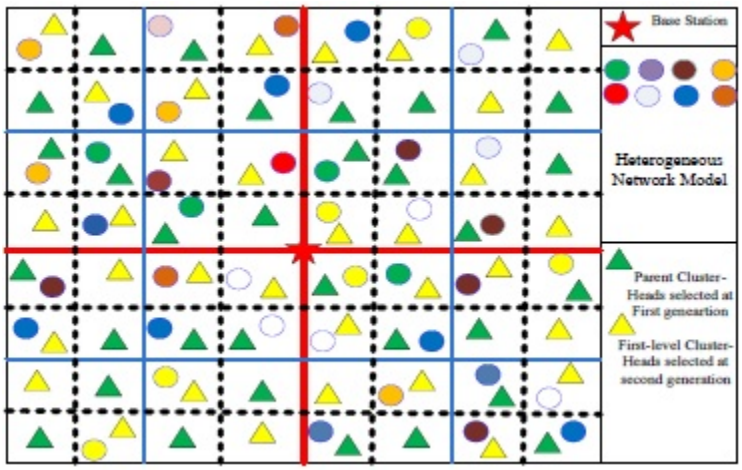

Fig. 6. Fifth level clustering in logical sub-divided network region

Third Generation Cluster Heads

3rd generation networks are derived from the 2nd generation cluster heads in the third computational level of first rounds. These are represented by the blue triangle in Fig 7. In addition, these will be the only nodes, which will participate in next computational level. In addition, other parents and 2nd generation clusters heads will not considered any more in the next computational level of current round.

Final Generation Cluster Heads

These final generation cluster heads will be derived from the 3rd generation cluster-heads in the last computational iteration of current round. These cluster heads are represented by the red triangle in fig 8. These cluster heads will be responsible for the actual communication because for the current rounds these are the finally selected cluster heads. Other kind of cluster heads will wait for the next round to participate in the election of final cluster heads.

How these nodes are selected as cluster heads at different level of communication is major output of our GMIC clustering algorithm. First whole network is logically divided into multiple sectors and more importantly, it is iterative process as discussed in in section III. When whole network has been divided into 64 sectors then it is the probability

that each sector could not have more two nodes if the total number of nodes are 100. Initially nodes compare their efficiency only with their own sector nodes. Efficiency of nodes can be calculated through this formula:

$$Efficiency = \frac{E_T - E_D}{Dis_{toBS}}$$

Where E_T is total energy of the node, E_D is dissipated energy of nodes and Dis_{toBS} is distance of nodes to base station. Subtraction dissipated energy from the total energy of the node provide the residual or remaining energy of the nodes. This residual energy of the nodes is directly proportional to the efficiency of the nodes and Dis_{toBS} is inversely proportional to the efficiency of the nodes. In this way, nodes can calculate their efficiency and these all nodes share their efficiency to their sector nodes. As every sector have one or two nodes maximum in it so, it will be overhead of exchanging hello packets and can determine the node with highest efficiency in their own cluster.

In result of first computational effort, every normal cluster selects its cluster head. So total 64 nodes will be selected as parent cluster heads.

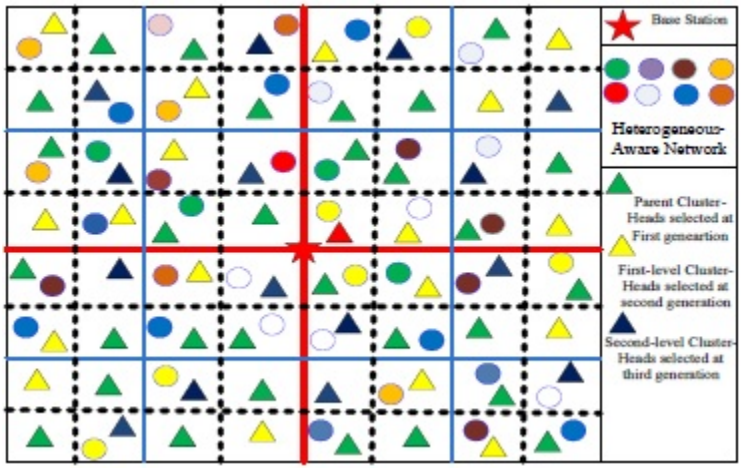

Fig. 7. Sixth level clustering in logical sub-divided network region

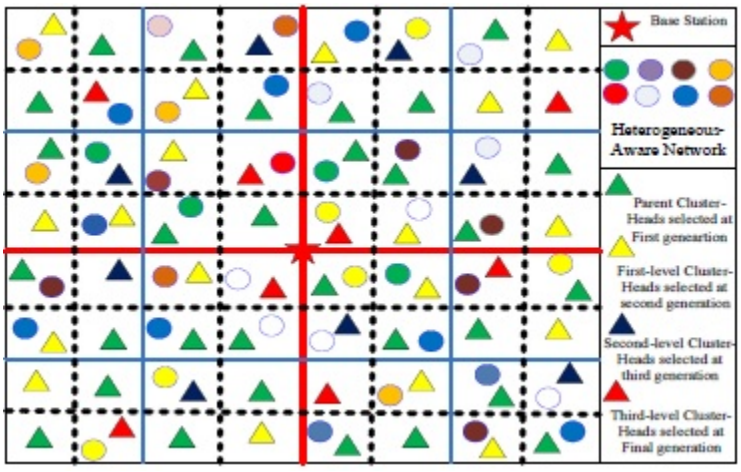

Fig. 8. Last level clustering in logical sub-divided network region

After creation of these parents cluster heads two adjacent normal clusters combine and format an advance cluster. The parents cluster heads (1st generation) of advance nodes compare the efficiency 2nd generation cluster head and generate the 32 2rd generation cluster head. Now two adjacent advance cluster are combined, format a super cluster, and similarly their two 2rd generation cluster heads decide a 3rd generation cluster heads. Total of16 3rd generation cluster heads are generated in this computational level. Similarly, two super clusters create a Jumbo cluster after their integration. Eight final generation cluster heads will be generated in the result of last computational level of current round. Therefore, this cluster will hold the major responsibility of each jumbo cluster.

Main feature of our GMIC protocol is principle of inheritance proposed in Gregor Mendel theory is integrated in our cluster formation algorithm. It will help cluster formation in next round, as only one computational level is required in second round because in this round, remaining 8 3rd generation cluster heads will be promoted to final cluster heads. It has reduced a lot of computational overhead in this round. This selection will move in backward direction and selected second and 1st generation cluster heads will be utilized. This selection of cluster head is define by the principle of inheritance works in Gregor Mendel theory.

VI.TRANSMISSION PHASE OF GMIC

After the completion of all cluster formations, appropriate CHs are chosen and TDMA slots are assigned. As per the criteria of assumption in general network topology that it continues to transmit data on a regular basis according to the time- based transmissions over the sensor nodes, which are programmed prior to the network formation. Therefore, for consuming appropriate energy GMIC utilizes not only the criteria using TDMA slots but also saves energy by switching off the transmitter of member nodes during the time of no-communication. Whereas, CHs are responsible for the entire communication so they will keep themselves active throughout the iterative period. During transmission phase of GMIC, non-CHs sense the data from the sensing field and transmit it to their appropriate CHs. Whereas, CHs will receive this and aggregate it to the BS using various signal-processing techniques.

VII. SIMULATION RESULTS AND DISCUSSION

In this section, we provide the detailed performance evaluation of proposed Gregor Mendel Inheritance Clustering (GMIC) protocol through simulations, which is taken in MATLAB 9.4. If not otherwise specified, we assume that 100 sensor nodes are uniformly deployed in 100m 100m sensor field area with the initial energy of $0.5J$. Percentage of becoming a CH is set to 10%, which is a reasonable amount of CHs with respect to the number of current sensor nodes. As we are running epoch, so the probability of becoming a CH is equal for all the sensor nodes in each single round of any 10000 rounds. Other important simulation parameters are given in the Table *I*.

In order to evaluate the performance, we considered state of the art routing protocols such as LEACH [1], LEACH-C [2], SEP [3] and DEEC [4] for comparison. The reason behind choosing these routing protocols for comparison because the design of all these routing protocols are based on distributed routing, which is also a key feature of proposed GMIC protocol. Moreover, proposed GMIC is designed to choose CHs based on the residual energy of sensor nodes, which is also a claim of aforementioned routing protocols. Following are the key features of proposed GMIC, which helps in providing better results than other routing protocols.

1) Cluster formation is completely distributed and based only on the local information.
2) Nodes, which are selected for the CHs, are guaranteed to be the highest residual energy nodes.
3) One node can only associate itself with one CH.

Round computation, time is as less as negligible so the network will remain in the steady-state phase throughout the network lifetime

TABLE I
SIMULATION PARAMETERS

Parameter	value
Network size	100m * 100m
Initial Energy	.5 j
P	.1 j
Data Aggregation Energy cost	50pj/bit j
number of nodes	100
packet size	4000 bit
Transmitter Electronics (EelectTx)	50 nj/bit
Receiver Electronics (EelecRx)	50 nj/bit
Transmit amplifier (Eamp)	100 pj/bit/m2

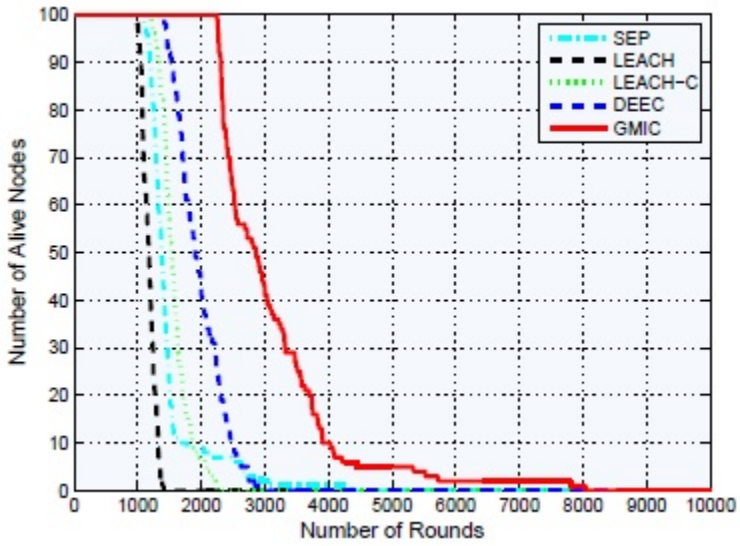

Fig. 9. Number of alive nodes with respect to the network operational rounds

Criterion for evaluating the routing protocol in sensor network is to measure the lifetime of network. In the simulations of proposed protocol, we compared the network lifetime of GMIC with existing state of the art routing protocol namely; LEACH, LEACH-C, SEP and DEEC. Figure 9 shows the number of alive nodes after each round. In the above graph, it is proved that number of nodes die quicker in LEACH, SEP, LEACH-C, DEEC and at the end GMIC. It clearly states that proposed GMIC has the longest network lifetime. Moreover, deployed sensor nodes are communicating throughout the network lifetime so the Figure 9 also proves that GMIC has the highest packet delivery ratio among other routing protocols.

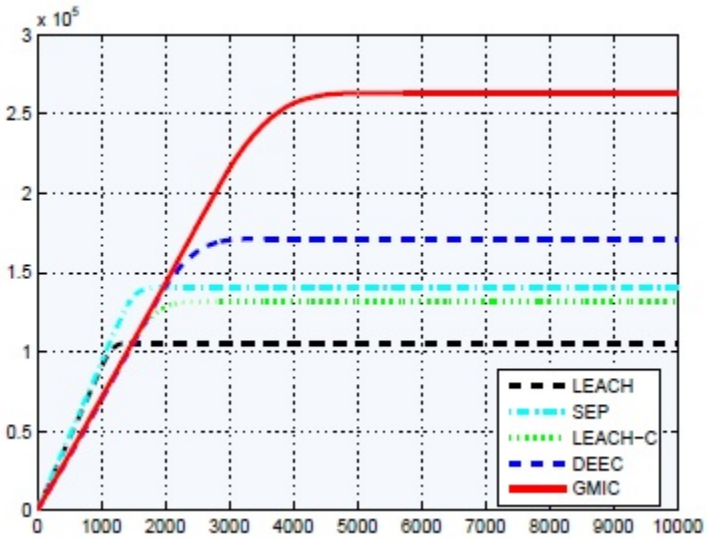

Fig. 10. Number of Packets (Signals) successfully received by the Base Station

VIII. CONCLUSION AND FUTURE WORK

In this paper, we have proposed a novel distributed clustering algorithm called Gregor Mendel Inheritance Clustering (GMIC) distributed routing protocol influenced by Gregor Mendel Theory on principles of inheritance during CHs generation process. GMIC outperforms in all aspects as compare to state of the art routing protocols due to the unique CHs selection mechanism. Proposed protocol is much robust and enough flexible which can be suitable for various sensor network applications. To prove the performance of GMIC we have provided the evidence that proposed routing protocol has better network lifetime, network stability and maximum packet delivery ratio. In the future, we will adopt the distributed learning methodology for the statistical analysis of our proposed GMIC.

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Challenges Of Transition From]High School To University Among Students In A Rural Context

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ABSTRACT

Among the challenges that the students face as they move from high school to higher education is that of making relevant and appropriate choice of career. Literature shows that there is a definite increase in concern regarding the choice of career among students when they are about to complete high school and move into higher education. This concern is not only about the career but also about the choice of institutions that would best serve their interests in terms of chosen fields. The exploration and choice of post-secondary career options is therefore seen as one of the major tasks of the high school students. The career decisions that students make for higher education have an influence on their motivation to study. Proper career choice results in highly motivated individuals as they engage in courses that are in line with their personality, interest, aptitude and other attributes. However, the rural context which is characterised by environmental deprivation does not provide for adequate exposure and career exploration to students in high school. As a result students go through high school and may enter post-school education without being fully prepared. Some students in high school in these remote rural areas fail to prepare themselves and to find the post-school opportunities due to lack of exposure. Dealing with under-prepared students from high school is the challenge that the higher education sector is faced with as this impacts on throughput and success rates. This paper explores careers and opportunity awareness among students in high school in a rural setting as well as the factors that impact on their transition from high school to higher education.

Keywords: career awareness; career choice; higher education; rural context; high school

DAISY - Damn Insecure System; Teaching Web Security From A Students' Perspective

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ABSTRACT

Cyber security is one of the applied sciences in which well-founded theoretical knowledge is, of course, absolutely essential.I In addition to basic research, a major focus has to be put on the practical relevance. Of course, this also applies to web security as part of cyber security. Therefore, various web application platforms, such as DVWA[1], Mutillidae II[2], WebGoat[3] or bWAPP[4] - to name just a few very well known - can be found on the Internet for the purpose to test and increase the web security skills of interested users.Evaluations of most of the used platforms show that they all have a vulnerability-focused approach in common. The platforms contain multiple vulnerabilities and provide means to examine each of them in an own section. They are created by security experts with the goal of pure cognitive knowledge transfer.

On the one hand this enables students to gain knowledge about specific vulnerabilities, but on the other hand it spares the part about the reconnaissance phase, which is about finding vulnerabilities. Generally, this vulnerability-focused approach is quite expedient, but, at the same time, not very challenging, which makes it not very tempting for students.

Our goal is to create a web security learning platform designed specifically for education where students can simulate a realistic penetration testing approach. Students do not just get to the vulnerability, they have to hunt for them in a common looking web shop. And as no one knows better what motivates the youth, we develop our project DAISY (Damn Insecure System) in cooperation with students.

Keyword: Cyber Security, Teaching Web Security, Practical Security Training

INTRODUCTION

DAISY is an existing student project at the UAS Technikum Vienna. The didactic concept behind the DAISY platform was inspired by the “learn by playing” concept [1] as well as publications on the gamification topic like [2].

The overall goal of the project is to provide a platform for study and practice which should help any information security student to hone their skills in the area of web application security. DAISY is designed to offer an interactive way of training to students, instead of relying on theory-heavy lessons.

In our approach students are confronted with a real life penetration testing situation, like a typical web shop, where they have to work themselves through the whole penetration testing process starting with a reconnaissance phase to find the vulnerabilities and afterwards exploit the vulnerability. Due to this approach the whole teaching process feels much more like a game for the students where, like in computer games, they are used to play, they are confronted with a problem and have to find a way to solve it. The advantage of playing a game instead of just learning the theory of web vulnerabilities is obvious, students are intrinsic motivated and therefor eager to spend more time playing then reading books.

[1] http://www.dvwa.co.uk/
[2] https://github.com/webpwnized/mutillidae
[3] https://github.com/WebGoat/WebGoat
[4] http://www.itsecgames.com/

To keep the students motivated there have to be rewards after fulfilling tasks. For this reason the application is designed in a jeopardy-style[5]. This means that if a vulnerability was found and successfully exploited by a student, a unique token gets presented, which in this context is often known as a "flag". The flag gets submitted by the student to the grading system, which validates the token and adds points according to a preset value to the submitter's scoreboard.

To prevent flag-sharing, the flag is individually created for each student. We also implemented a hint system to help students who got stuck on their way to find a solution. If a student uses the help system, this has an effect on the flag, which leads to a deduction of the points at the end.

ARCHITECTURE

The DAISY learning environment consists of two components, the DAISY application itself, a web shop with vulnerabilities and the reward system (CTFd) with the scoreboard (see **Error! Reference source not found.**). The web shop runs in a Docker container which isolates the different instances from each other so each student gets his own instance and reduces the attack surface of the system as a whole.

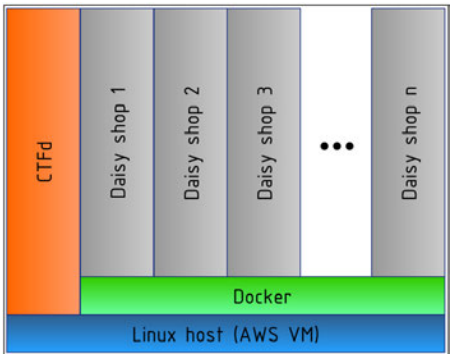

Figure 1
Architecture of the daisy environment

DAISY Reward System

A user first has to register an account on the scoreboard, where a personalized user token for the user get generated (see **Error! Reference source not found.**).

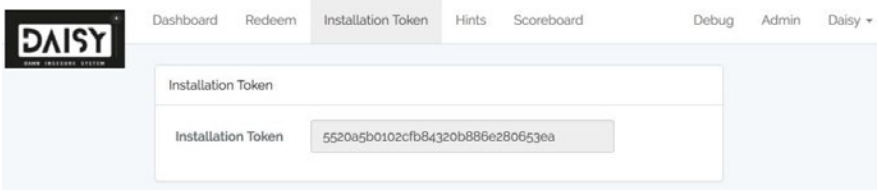

Figure 2
Personalized installation token

This installation token is used by the system (see **Error! Reference source not found.**) to personalize the flags, user receive from exploiting vulnerabilities. This makes cheating much harder because simple flag sharing is not possible.

[5] https://ctftime.org/ctf-wtf/

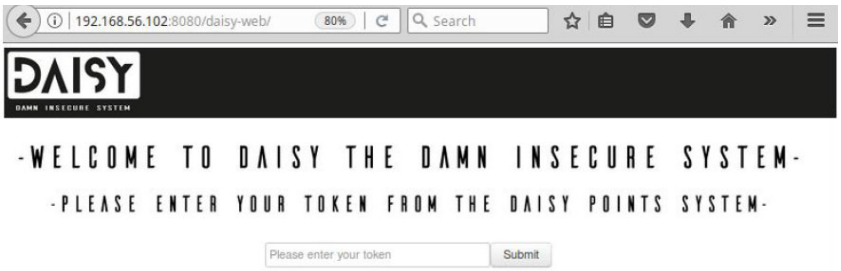

Figure 3
Providing installation token to personalize flag

The reward system is used to redeem point by providing reward token gathered through exploits (see **Error! Reference source not found.**).

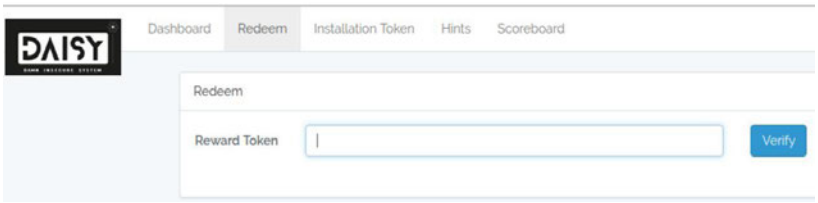

Figure 4
Redeem point by providing reward token

The scoreboard of the reward system also keeps track of the already solved exploits and displays an overall score for all users. It is written in PHP2 using the Laravel3 framework.

The Web Shop

The main part of the DAISY platform consists of a web shop with several vulnerabilities.

In the most current version, DAISY has implemented six different vulnerabilities:

- SQL Injection
- Insecure Direct Object Reference
- Cross-Site-Scripting (XSS)
- Hidden Directory
- Command Execution
- XML External Entities (XXE)

The web shop provides an environment for training the different penetration testing phases: reconnaissance, enumeration, finding vulnerabilities, exploiting vulnerabilities.

When a user gets connected he first sees a web shop, where he can start with the reconnaissance phase, looking for vulnerabilities. Of course, each vulnerability is also documented in an accompanying literature for the class teachers.

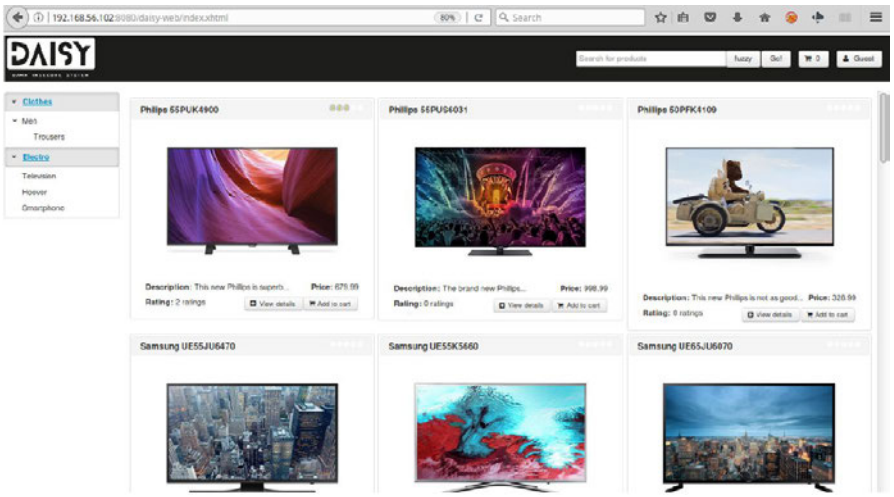

Figure 5
Main page DAISY Web Shop

The Hint System

If students get stuck working on a challenge they can get hints from the DAISY Reward System. The hints will get more and more helpful pointing the student in the correct direction but will cost more points for each hint the student needs. These points will get taken from the final score of the student, even if he is not able to solve the challenge at all.

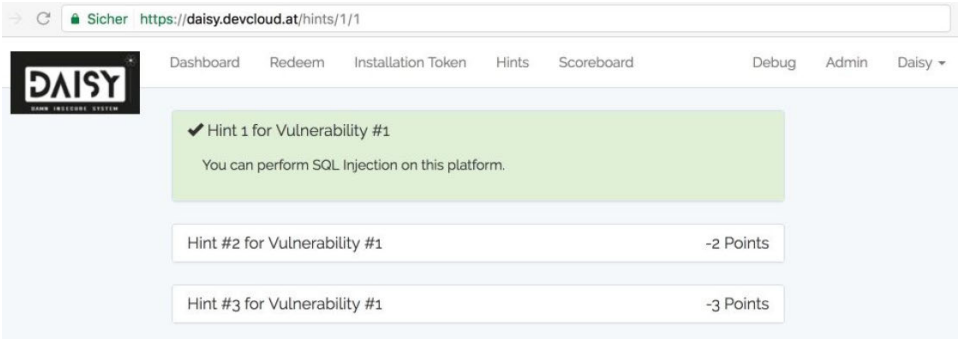

Figure 6
DAISY hint system

The Token System

If a student has successfully exploited a vulnerability he gets a token like the one in **Error! Reference source not found.**.

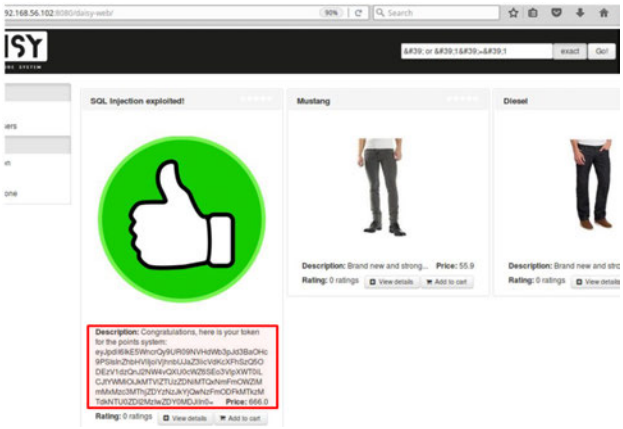

Figure 7
Token for successful SQL Injection exploit

With those tokens the student redeems points for the scoreboard and the teacher is able to track progress of each student, because he sees on his admin page which vulnerabilities each student has solved so far and which points he has redeemed.

To track the progress of the student and assess how many vulnerabilities he has found, a capture the flag mechanism is implemented. This mechanism is realized by the use of tokens which are generated by the DAISY Reward System as well as the DAISY Platform.

The goal is to ensure that the tokens are generated automatically and are assigned to each user and vulnerability combination unambiguously. The combination of user and vulnerability should ensure that found tokens cannot be passed on to other students. **Error! Reference source not found.** shows how the unique tokens are generated and which algorithms are used.

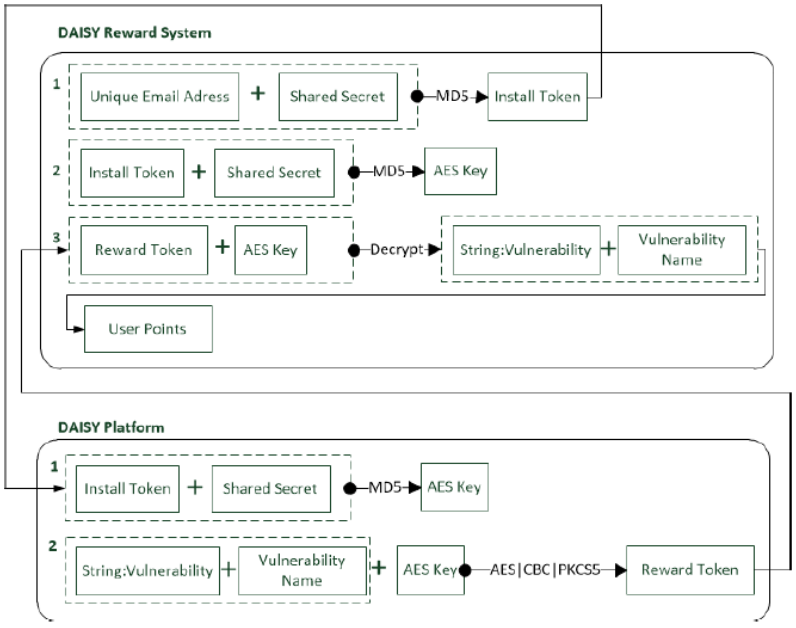

Figure 8
DAISY Token Algorithm

The user starts by registering in the DAISY Reward System with his email address. In step one the DAISY Reward

System generates an “Install Token”, therefore it concatenates the unique user email address and a shared secret and builds a MD5 hash. This “Install Token” is later used by the user to initialize the DAISY instance for himself.

In step two the Reward System concatenates the Install Token and the shared secret and building a MD5 hash. This hash value represents an AES key. The same step is performed on the DAISY instance after the user initialization. This AES Key is used to generate the reward tokens. The reward tokens consist of the string: vulnerability and the vulnerability name. This value in combination with the AES key will be encrypted with the AES|CBC|PKCS5 algorithm.

If a user successfully exploits a vulnerability he will receive a reward token. Afterwards he can enter this token into the reward system. The reward system uses this token and the users AES key to decrypt the token and get the information which vulnerability has been exploited. Based on this information, points are assigned to the user account minus the points for hints.

FUTURE WORK

Future work on this project can be done in different directions that are not mutually exclusive

On the one hand, further web vulnerabilities according to OWASP top 10 will be added and on the other hand the learning platform could outgrow the area of web vulnerabilities. We are experimenting with Reverse Engineering and social engineering challenges at the moment, where the students upload their binaries or office documents with macro viruses. The necessary user interaction is getting scripted like we already do with PhantomJS in our XSS challenge.

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Academic Support In A Distance Learning Environment: Students Expectations

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ABSTRACT

Higher Education in the country is battling to improve its success rates. Purely Distance education institutions find themselves also in the same league, but facing even more difficult challenges at both undergraduate and postgraduate levels with significant proportions of students entering Universities and get stuck in the system. Some students spend more time than the regulated one and some dropping out without any formal qualification. The reasons are varied and complex including amongst others that some of them are expected to juggle between studying and family responsibilities but the most common one being that the level of academic support offered to Distance education students is not as intensive as it is the case at contact institutions. This paper takes a look at how South African Distance Education institutions are trying to provide academic support to their students as well as the implications thereof.

Global Partnership And International Education With Latin America: A Case Of Study

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Tará B. Lopez, Southeastern Louisiana University, USA

ABSTRACT

For more than fifteen years, Southeastern Louisiana University has been working with the Latin American Community through the University's Latin American Business Development Initiative (LABDI) program. The purpose of the LABDI is to strengthen and stimulate entrepreneurship and leadership skills among citizens in Latin American countries and the American Hispanic Community, as well as to develop closer international relations between the United States and Latin American countries. The LABDI has developed strategic partnerships with government agencies, universities, chambers of commerce, business leaders, and non-profit organizations in Louisiana and Latin America. Through these partnerships, LABDI has been able to truly enhance opportunities for Latin Americans abroad and the American Hispanic Community. The LABDI has also been able to broaden the scope of its impact as a result of the enhanced relationship between the State of Louisiana and Hispanic countries. The purpose of this article is to describe the LABDI's approach to developing partnerships and creating impactful programs to support others who may be interested in similar programs at their universities. This article will also highlight the significant contributions of LABDI on Southeastern's campus and with partners in Latin America and the Caribbean region.

Keywords: Latin American Business, International education

Spiritual Leadership: A Model Of Leadership

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ABSTRACT

Public school leaders who identified as spiritual leaders practiced leadership for the success of their schools. Promising spiritual leadership strategies were significant for engendering school leaders to foster a collaborative and empowering learning organization. School leaders may find spiritual leadership a valuable modality for collective leadership in achieving common goals.

Keywords: Spiritual Leadership; School Leader; Principal; Assistant Principal; Spiritual Leader

INTRODUCTION

School leaders are under pressure to improve student achievement in their schools (Huff, Brockmeier, Leech, Martin, Pate, & Siegrist, 2011; Bartoletti & Connelly, 2013), create a culture of collective responsibility (Jones & Hughes, 2011; Leithwood & Sun, 2012; Mosley, Boscardin, & Wells, 2014), and set clear goals for student achievement (McIver, Kearns, Lyons, & Sussman, 2009), the landscape of education has changed with the onset of the coronavirus pandemic. Coronavirus disease often referred to as COVID-19 is a respiratory illness similar to the flu (Center for Disease Control, 2020), has significantly impacted the economy, and changed how education, businesses, and social institutions operate around the world. Both public and private K-12 schools and higher education institutions were forced to close school or shift schooling from in-person to remote or virtual learning. Quite naturally, with these complex responsibilities, principals are in search of meaning and purpose to leverage leadership practices in a day of post COVID-19. Spiritual leadership may support school principals in stabilizing the work environment, and garnering support for strengthening the school community in times of difficulty.

Spiritual leadership comprises behaviors necessary to lead, motivate, organize, retain people for organizational commitment and productivity (Benefiel, Fry, & Geigle, 2014), and resolve complex problems for organizational success. Research (Fry, 2003; Fry & Matherly, 2006) posits spiritual leadership theory is an intrinsic motivational model that supports the needs of both the leader and the follower for spiritual survival within the organization. Therefore, in times of uncertainty, spiritual leadership as a management strategy may be a means to develop a culture wherein both leaders and followers are intrinsically motivated to foster high levels of organizational commitment and productivity (Fry, 2003; Fry & Nisiewicz, 2013) to achieve positive organizational outcomes.

The concept of spiritual leadership includes vision, altruistic love, hope/faith, meaning/calling, membership, inner life, organizational commitment, productivity, and satisfaction with life. *Vision* describes the organization's journey and purpose; *altruistic love* conveys a sense of wholeness, harmony, and well-being produced through care, concern, and appreciation for both self and others (Fry, 2003); and *hope/faith* clarifies the assurance of things hoped for (Hebrews 11:1, *King James Bible*, 1611); all serve as the premise on which the organization's vision, mission, and goals are achieved. Fry and Matherly (2006) noted that hope/faith keeps followers inspired and fuels effort through intrinsic motivation to achieve the vision of the organization. *Meaning/calling* refers to a sense that one's life has meaning and makes a difference; *membership* denotes cultural and social structures wherein individuals are understood and appreciated through interrelationship and social interaction. *Organizational commitment* illustrates the degree of loyalty or attachment to the organization; *productivity* addresses efficiency in producing results, benefits, or profits; *satisfaction with life* denotes one's sense of subjective well-being or satisfaction with life as a whole (Fry, 2003); and *inner life* refers to influencing the development of hope and faith in service to others through altruistic love (Fry, 2008). Furthermore, spiritual leadership positively influences organizational commitment and life satisfaction, which are essential in meeting employee needs including their well-being, organizational commitment, and

performance (Fry, Latham, Clinebell & Krahnke, 2016), especially when making decisions for the overall success of the school.

Public school leaders in the United States are bound by constitutional obligations that do not, for the most part, allow them to express faith and spiritual persuasions (U.S. Constitution, Amendment I). Religion, as a practice in the public school organization, is forbidden, due to the ideals of the separation of church and state (U.S. Constitution, Amendment I). Halford (1998) and Shields (2005) contended that spirituality, or spiritual leadership practices, can be implemented in a neutral manner within public schools. Fry (2013) conveyed spiritual leadership can be implemented regardless of religious theory, beliefs, and practices. Within the parameters of Fry (2003), spiritual leadership may be a tangible leadership practice for reducing stress, improving morale, and accountability in the school environment (Crossman, 2008; Jones, 2010).

METHODOLOGY

Two methods were used in this study. A quantitative method was used by school leaders to self-report spiritual leadership behaviors. A qualitative methodology using a single-case study was employed to explore how 16 school leaders who self-identified as spiritual leaders experienced, understood, and practiced leadership for the overall success of their schools. The single case study facilitates the understanding of a theoretical proposition (Yin, 2014) and is the ideal strategy when asking, how, what, or why research questions (Amerson, 2011; Andrade, 2009, Stake, 1995; Yin, 2014).

Much like principals, other organizational leaders find it challenging to motivate, lead, organize, and retain people to be committed to organizational goals, vision, culture, and values (Fry, 2003). Especially in times of uncertainty and crisis, it is arguable that this would also be true for assistant principals. Therefore, school leadership would be no exception, given that schools are no longer just brick-and-mortar but have evolved to include virtual/remote learning environments, bringing together learners and teachers with varying degrees of spirituality. Such evolution would suggest that the functions and responsibilities of principals, as well as assistant principals ought to transform, if they are to bring about new forms of leadership to fulfill the ever-increasing demands of accountability in school leadership (Pollock & Winton, 2015).

Sixteen (16) assistant principals in a urban school district were invited to self-identify their spiritual leadership behaviors using the Revised Spiritual Leadership Questionnaire (RSLQ). The RSLQ comprises 31 questions and uses a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly Agree) to elicit participants' responses to nine dimensions: vision, hope/faith, altruistic love, meaning/calling, membership, inner life, organizational commitment, productivity, and satisfaction with life. Fry's (2003) Spiritual Leadership Questionnaire originally addressed the spiritual leadership practices of vision, hope/faith, altruistic love, meaning and calling, organizational commitment, productivity, and satisfaction with life. Later, in 2008 Fry revised and expanded the spiritual leadership questionnaire (RSLQ) to include inner life as a spiritual practice to enhance the spiritual areas of hope and faith and altruistic love. The RSLQ seeks to assess spiritual leadership, establish value congruence between the leader and follower, empower teams, and "ultimately, foster higher levels of organizational commitment, productivity, and employee well-being" (Fry, Vitucci, & Cedillo, 2005, p. 835). Data collected through the RSLQ helped the researcher identify participants who exemplified spiritual leadership.

Two sources of data collected by the researcher included (a) one-on-one open-ended interviews, and (b) focus group interview.

One-On-One Open-Ended Structured Interviews

The researcher explored 10 public school assistant principals regarding their views on spiritual leadership. In qualitative investigations, the open-ended interview is used to collect data (Marczak & Sewell, 2006); in addition, the researcher was also the primary data collection instrument (Patton, 2002). An interview protocol was used to guide the interview. The researcher received permission from Rezach to modify and implement the one-on-one interview questions used in her 2002 dissertation for the qualitative data collection because the questions were relevant for

answering the research questions. The one-on-one in-depth interviews comprised 12 questions that asked participants various questions pertaining to spirituality and leadership.

Focus Group Interview

The researcher conducted a focus group interview to capture a holistic view of six assistant principals interviewed regarding spiritual leadership in one setting. A focus group interview protocol was used to guide the interview. The focus group provided additional information relevant to spiritual leadership that was not shared or expressed during the one-on-one interview (Marshall & Rossman, 2016; Patton, 2002). Additionally, the focus group interview questions comprised three questions that asked participants the following questions pertaining to spiritual leadership.

How do public school leaders who self-identify as spiritual leaders *experience* leadership for the overall success of the school?

How do public school leaders who self-identify as spiritual leaders *understand* leadership for the overall success of their school?

How do public school leaders who self-identify as spiritual leaders *practice* leadership for the overall success of their school?

Interviews are often used to achieve data saturation (Fusch & Ness, 2015). Data saturation is the deepness of the data collection (Burmeister & Aitken, 2012). The researcher conducted one-on-one open-ended interviews for data saturation. As suggested by Guest, Bunce, and Johnson (2006), interviews should be structured to achieve data saturation. The researcher structured the interview questions to ascertain multiple participants' responses on how they experienced, understood, and practiced spiritual leadership to reach data saturation. Additionally, the focus group interview was used to gain multiple perspectives on a given topic to achieve data saturation (Fusch & Ness, 2015).

Seven themes emerged from the study as evidence-based spiritual leadership strategies for school leaders to use for the overall success of their school community. These strategies include (1) model the way; (2) connecting with others; (3) empower and motivate others; (4) connection to a higher power; (5) deliberate devotional practices; (6) setting expectations; and (7) calling/purpose.

Model The Way

Modeling the way is a key behavior of spiritual leadership and is necessary for establishing credibility as a leader as well as transforming the organization. When leaders find their voice, set an example, and align actions with shared values (Kouzes & Posner, 2003b). Lyon (2004) realized that credibility and consistent relationships are necessary, if one is to influence the environment. Tipton (2007) noted that when leaders model the way, doing so helps the leader establish credible and consistent relationships with followers.

Connecting With Others

Connecting with others is a significant spiritual leadership for school leaders to achieve organizational outcomes such as student achievement. Leaders who show care and concern for both self and others, create an environment of belonging, mutual trust, and respect whereby followers can connect and engage with others with meaningful dialogue (Abdizadeh & Khiabani, 2014; Bartoletti et al., 2013; Fry & Matherly, 2006; Bass & Avolio, 1995). Spiritual leaders place priority on establishing genuine connections with those who work with them (Riaz, 2012). Salmanpour, Vandaei, Yadegari, Nezhad, Ghasemzadeh, & Khoshemehr (2014) found connecting with others as a spiritual leadership practice can build a collaborative environment of mutual trust and respect. In the public school setting, this would mean establishing trusting and collaborative relationships wherein stakeholders work together to achieve organizational outcomes.

Empower And Motivate Others

Empowering and motivating others is an important spiritual leadership practice for creating an environment of trust and collaboration in which organizations can achieve organizational outcomes (Fry, 2003). School leaders who practice spiritual leadership not only empower and motivate employees and stakeholders through collaboration and involvement in decisions to build internal capacity for goal attainment (Thompson, 2012; Louis, Leithwood, Wahlstrom, & Anderson, 2010; Schulte, Slate, & Onwuegbuzie, 2010) but also transform the organization by transcending self-interests for a greater collective purpose (Riaz, 2012; Fairholm, 1997; and Klenke, 2003). Additionally, empowering and motivating others in the decision-making process build environments of trust and collaboration (Fry, 2003).

Connection To A Higher Power.

Connection to a higher power is an essential spiritual leadership practice in shaping leadership practices (Dalia, 2005) as well as supporting the leader's spiritual journey in a meaningful way (Smith & Rament, 2007). The centrality of spiritual leadership is one's connection to self, others, and a higher power beyond self and others (Schlosser, Brock-Murray, & Hamilton, 2008; Sexton; 2013). Therefore, a leader's connection to a higher power is not always outwardly spoken but internally expressed, which enables the leader to make tough decisions (Fry, 2003; Williams & Peters, 2011).

Deliberate Devotional Practices

Deliberate devotional practices are a way of life for spiritual leaders as they search for purpose and meaning, interact with others, guide others' behaviors and beliefs, and make decisions for organizational transformation (Bass, 2000; Massenburg, 2010; Sexton, 2013; Williams & Peters, 2011). Spiritual leaders motivate and inspire school employees and stakeholders to achieve difficult goals [decisions] (Fry, Nisiewicz, M., Vitucci, S., & Cedillo, 2007) as well as practice self-reflection (Miller, 2002).

Setting Expectations.

Setting expectations is an important spiritual leadership practice for establishing direction and change for organizational transformation (Fry, 2003). Leaders who set expectations promote faith and hope. Hope is the desired expectation of fulfilment (Fry, 2003). Faith endorses hope and is demonstrated through one's attitude, behavior, and belief in which the desired expectation will be realized (Fry, 2003). Followers report by communicating an attractive vision, providing meaning and clarity, and aligning personal goals with the vision of the organization are ways to achieve organizational success. Therefore, leaders must establish expectations and collaborate with followers to achieve school outcomes (Thompson, 2012).

Calling/Purpose

Calling/purpose is an essential spiritual leadership for improving employees' commitment and social responsibility within the organization (Fry & Cohen, 2009). Spiritual leaders create a vision with the organizational culture for both the leader and follower to have a sense of calling/purpose for making a difference in the lives of others. Through calling/purpose, followers develop vision and value team empowerment to improve productivity within the organization (Fry, 2003; Fry, et al., 2005). Calling/purpose [meaning] as a spiritual leadership practice is necessary for spiritual leaders to intrinsically motivate followers to achieve the vision of the organization (Fry & Matherly, 2006; Stewart, 2006).

These evidence-based strategies are critical for supporting spiritual leadership theory and engendering school leaders as spiritual leaders to "create an intrinsically motivated, learning organization" (Malone & Fry, 2003, p. 5), wherein school leaders, teachers, parents, and the school community work collaboratively to achieve organizational outcomes. Moreover, the school leader as spiritual leader promotes a culture of altruistic love through a sense of wholeness, harmony, and wellbeing produced through care, concern, and appreciation for both self and others (Fry, 2003). Additionally, the school leader as spiritual leader creates meaning in the lives of others, thus providing teachers,

parents, and the school community with a strong sense of belonging in the organization, which is necessary for building the capacity of others.

CONCLUSION

In this unprecedented time of COVID-19 (coronavirus), there is a need to ease anxiety, reduce stress, empower others, increase alternative ways to connect with others and show care and concern for others while social distancing. Spiritual leadership is a viable leadership strategy to support public school leaders in making sound decisions regarding the "new" normal of schooling. The implementation of spiritual leadership will guide school leaders in their leadership practices, make sound instructional and cultural decisions, and influence and build cohesive and trusting relationships with teachers, staff, parents, and the school community.

AUTHOR BIOGRAPHY

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Sustainability Accounting: A Growing Performance Reporting Standard And The Need To Prepare Business Students

Tina Rolling, Alma College, USA

ABSTRACT

Environmental performance and the costs associated with it are an important factor in evaluating a company's success. Companies have now begun to implement sustainability accounting standards from the Sustainability Accounting Standards Board (SASB) in their reporting functions. These new standards will help businesses around the world identify, manage and report on their effect on the environment and society. This research paper explains sustainability accounting reporting, how organizations are implementing the new SASB standards, and the new skills required to manage this information. The research is based on a review of the new Sustainability Accounting Standards as well as specific business cases. As a result of these new standards, college educators need to consider adding the topic of sustainability accounting into their business curriculum. This research highlights the importance of educating business students on sustainability accounting in order to prepare them as they enter this new reporting environment.

Competency-Based Education – Precision Education For Student Success

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ABSTRACT

Precision education is not new, but it is being applied in new and unique ways. Originally designed for special needs students and those with learning disabilities in primary and high schools, it has already shown tremendous potential in the realm of higher education. Historically universities used a one-size fits all approach. Students were selected based on their likelihood of success using the traditional rubrics of grade point averages and entrance exams. This left large populations underserved in institutions of higher learning, and therefore affected their success in life. Designing the educational delivery system around the student, rather than have the student conform to a specific system has incredible potential for student success in institutions of higher learning. This need for a more personalized educational delivery system is not new but has been emphasized in light of the current worldwide pandemic. One of the hallmarks of precision education is competency-based education. Rather than having all students exposed to course material at the same rate, and then testing them on a set schedule, competency-based education allows students to work at their own pace until competency is reached for a given objective. Courses are divided into competency sections that can be labeled modules, learning objectives, or even competencies. When students demonstrate competency for a given section, they move on to the next one. While this educational modality is often touted for the student who tends to fall behind, for which it is well designed, it also serves the student who may be bored because the pace is too slow for them. This allows some students to progress faster and some slower, but ultimately achieves greater student success. The precision model can be used in assessing students as well. While all students would need to demonstrate a minimum competency, how the competency is assessed does not have to be the same for all students. Traditional exams can be used, but they could be written or oral. Similarly, a research project can be assigned, but it could take the form of a written paper or a live or even recorded presentation. A competency-based delivery system does present some challenges, like the potential for requiring excess resources. However, the emphasis should be on student learning, and whether that learning takes place within a traditional, scheduled structure, or within a timeline that fits the student's abilities should be irrelevant. Ultimately, the student learns the necessary subject matter, academic rigor is not sacrificed, and society benefits from a more educated and workforce ready population.

Living The Theoretical Framework Of Caring In The University Setting

Suzanne J. Crouch, Chamberlain University, USA

ABSTRACT

Embracing a theoretical framework grounded in caring science may enhance learning and satisfaction within the academic community for both faculty and students (Boykin & Schoenhofer, 2001; Groenwald, 2018). Caring for self, colleagues and students is an expected practice of nursing education. Promoting caring for self and others may be viewed as a means to foster engagement, social presence, and a vibrant teaching and learning community.

In nursing, health sciences and all academic disciplines, revisiting our "roots" is an essential journey for our own professional growth. For many faculty, the reason for their career choice was the opportunity to reach out and care for others and foster students' development and learning. The foundation of this journey is caring.

Caring is the framework through which nurses implement the art and science of professional practice. If caring is a framework for practice, a significant challenge is conveying the passion of caring in the realm of the physical and virtual world of teaching and learning. The element of caring as fostering human freedom embodies the essential essence of academic freedom. "Authentic human caring is not subservience, not subordination, not subject to control but a way of living that fosters human freedom in all relationships" (Roach, 2002, p. 7).

Caring for self, colleagues and students is vital for growth and development as it can transform the workplace culture (Groenwald, 2018). Embracing a culture of care is a way to get back to one's roots and become grounded in the aspects of life that are vital for humanity. During our academic career, we give of ourselves, our time, our talents and our lives. Those in education have been given the incredible opportunity of being instrumental in the development and establishment of collaborative learning communities. Boyer (1995) suggests six essential qualities for any learning community to exist: (1) purpose, (2) communication, (3) discipline, (4) justice, (5) caring and (6) celebration. In accordance with this premise, before a student can openly grow and mature, the essential qualities of a learning community must be developed and embraced.

Caring has been the pillar of nursing education and practice since the inception of nursing and needs to remain as such regardless of the platform for the delivery of nursing education (Leners & Sitzman, 2006; Watson, 1988). The framework of caring within academic organizations has been illustrated to positively impact teaching and learning communities (Boykin, & Schoenhofer, 2001; Groenwald, 2018). It is within the land of caring that we work and learn and live. It behooves us all to remember that caring is foundational to all that we are and all that we do as human beings.

INTRODUCTION

What was the basis for you when entering the field of education? For many, it was the opportunity to reach out and care for others while fostering students' development and learning. The foundation of this journey is caring. In nursing, health sciences and all disciplines, revisiting our roots is an essential journey for our own professional growth.

Embracing a theoretical framework of caring grounded in caring science may enhance learning and satisfaction within the academic community for faculty and students (Boykin & Schoenhofer, 2001; Groenwald, 2018). Caring is the framework through which nurses implement the art and science of professional practice. If caring is a framework for practice, a significant challenge is conveying the passion of caring in the realm of the physical and virtual world of teaching and learning.

The element of caring as fostering human freedom embodies the essential essence of academic freedom. "Authentic human caring is not subservience, not subordination, not subject to control but a way of living that fosters human freedom in all relationships" (Roach, 2002, p. 7). Caring for self, colleagues and students is vital for growth and development as it can transform the workplace culture (Groenwald, 2018).

Embracing a culture of care is one way to get back to one's roots and become grounded in the aspects of life that are vital for humanity. Caring has been the pillar of nursing education and practice since the inception of nursing and needs to remain as such regardless of the platform for the delivery of nursing education (Leners & Sitzman, 2006; Watson, 1988). The framework of caring within academic organizations has been illustrated to positively impact teaching and learning communities (Boykin & Schoenhofer, 2001; Groenwald, 2018). During our academic career, we give of ourselves, our time, our talents and our lives.

Chamberlain University is committed to creating an academic culture in which colleagues and students thrive and that cultivates extraordinary graduates. The University's vision is to educate, empower and embolden diverse healthcare professionals who advance the health of people, families, communities and nations. We believe that if we take extraordinary care of our colleagues and faculty, they in turn will take extraordinary care of our students on their journey toward becoming extraordinary healthcare professionals who will transform healthcare worldwide. This is what we call *Chamberlain Care®. Designing and Creating a Culture of Care for Students and Faculty: The Chamberlain University College of Nursing Model* is a book describing the seven-year journey to creating an organizational culture and work climate, in which students and colleagues thrive. It speaks to a culture where students are cared for in a way that can improve their chances of success and that can provide an advantage in attracting and retaining high quality and effective faculty and staff.

Chamberlain University's Center for Faculty Excellence (CFE) was created for the purpose of caring for faculty through professional development. Chamberlain University was designated as a Center of Excellence by the National League for Nursing in recognition of sustained efforts in "Creating Environments That Promote the Pedagogical Expertise of Faculty." A comprehensive curriculum was created, which offers certificates for attaining Master Instructor status. Teaching and learning tools include faculty resources, continuing education offerings, Care for Self guides and recorded webinars. The Program of Scholarship outlined on the CFE portal includes scholarship tools, professional conferences, scholarly writing guides and scholarly publications.

It was conceived as a response to an urgent need to transform nursing education. Master Instruction is *Chamberlain Care®* in action and champions care for faculty, which translates into well-cared-for students who graduate as extraordinary healthcare professionals. Integral to this process is creating a positive, participatory learning environment through deliberate use of evidence-based strategies to foster deep student learning. Master Instruction was created by Chamberlain University's Center for Faculty Excellence and is based on the work of Ken Bain (2004). The impact of Master Instruction is transitioning from:

- Content to concept
- Student interaction to student engagement
- Grades to outcomes
- Right answer to right thinking
- Assignments to assessments

Master Instructor Level I distinction is completed through course completion, self-reflection, observation and debriefing sessions. Master Instructor Level II distinction is completed through additional course completion, self-reflection, observation and debriefing sessions.

Chamberlain Care® is based on the, "fundamental belief in the University's responsibility and ability to achieve superior student outcomes for a diverse population of students," through "initiatives that lead to… extraordinary care,

strong support for each student's learning experience, motivating actions instead of demotivating actions and encouragement instead of discouragement in the face of challenges" (Chamberlain University Philosophy of Nursing Education).

To help meet student demands, care interventions were created. These initiatives focus on developing standardized practices aimed at enhancing the students' coping skills. Specifically, balancing the demands of school/work demands, resilience, self-confidence, motivation for learning and learning strategies.

The intent of care interventions is to help achieve the purpose of graduating extraordinary nurses who transform nursing worldwide. If we embrace care as our framework, then it is our responsibility to reach out to the students where they are and help them adapt to meet the rigorous demands of academic life. The challenges of traditional nursing education, health science programs and academia in general threaten to overwhelm many of our students. If left unaddressed, those threats persist and may prevent students from accomplishing their educational goals.

Caring for students through planned interventions and a commitment to a culture of caring may increase the likelihood of student success within academia. It is within the land of caring that we work, learn and live. Embracing a culture of care is the compass that guides every decision that is made while educating our students. It behooves us all to remember that caring is foundational to all that we are and all that we do as human beings.

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"Serious Play": Designing Interactive Museum Visits For The Online Environment

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ABSTRACT

The abrupt shift to an online environment in the spring semester of 2020 left me with a conundrum: how to deliver a museum visit without the physical visit. I, therefore, began to explore the many virtual museum environments for those that might be applicable to my art history courses. In light of this I designed two assignments: one that asked beginning students to do a virtual tour; the other that required advanced students to attend a guest lecture, do a virtual tour, and write a critique of the exhibition design.[1] The former asked students to treat a historic house administered by the Cape Ann Museum in Gloucester, Massachusetts whereas the latter tasked students with critiquing an exhibit at the New Museum in the Bowery area of New York City's borough of Manhattan. This presentation describes and presents the assignments, as well as analyzes the results to demonstrate that such are "serious play" assignments can offer more than just fun and interactivity; they can meet the learning goals of a course on a deep level.[2]

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[1] This is an extension of the gamification of my classes generally, in which assignments are presented as roleplay in order to develop the empathy necessary to become historically sensitive. See, Kevin Bell, *Game On! Gamification, Gameful Design, and the Rise of the Gamer Educator* (Baltimore: Johns Hopkins University Press, 2018); Lindsey Blass and Cate Tolnai, *Power Up Your Classroom: Reimagine Learning Through Gameplay* (Portland, OR: International Society for Technology in Education, 2019); and Michael Matera, *Explore Like a Pirate: Engage, Enrich, and Elevate Your Learners with Gamification and Game-Inspired Course Design* (San Diego: Dave Burgess Consulting, Inc., 2015).

[2] Although this term is used to refer specifically to digital learning games, it is adaptable to interactive online experiences. See, Catherine Beavis, Michael Dezuanni, and Joanne O'Mara, *Serious Play: Literacy, Learning, and Digital Games* (NY: Routledge, 2017).

The Effect Of Gender Diversity On Firms' Performance: The Case Of Jordanian Non-Financial Institutions

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ABSTRACT

Purpose – This study offers new insights to investigate the effect of gender diversity on firms' performance using of non-financial institutions data in Jordan.

Design/methodology/approach – This study employs ordinary least square (OLS) regression model applying Fixed Effects model to analyze the panel data of 77 companies over the period (2008-2016). The study used multiple proxies to test the firms' financial performance, including ROA and Tobin's Q. The corporate governance variables (Gender diversity (GD), Age of the firm, Leverage, firm's size and Non-executive director (NED)).

Findings – Our results show that Jordanian firms' boards are male dominated. In addition, the study found a positive relationship between female directors and firm' financial performance, as measured by ROA and Tobin's Q. This confirms that gender diversity in Jordanian non-financial institutions seems to be important to improve governance and leading firms' to be more profitable.

Originality/value – limited number of studies that have investigated the relationship between gender diversity and firms' financial performance in developing countries. In addition, the previous studies show inconsistent result based on this relationship. Moreover, the Jordanian Corporate Governance Code related to the representation of females on the board is ineffective. For instance, there is no legislations to stimulate companies to increase or motivate the presence of females on the board. Thus, this paper aims to extend the present literature specifically the case of Jordan, displaying that the presence of female on the board directors lead to enhance boards of directors' effectiveness and thereby, better firms' performance. Therefore, the results of this study might have significant effects and implications on firm's boards, policymakers and regulators, who should consider the effect of gender diversity on firms' financial performance. Accordingly, the study will contribute to provides evidence to policy makers in Jordan for any governance reforms.

Keywords: Gender Diversity, Firm Performance, Corporate Governance, Emerging Markets, Jordan

Current State Of Research On Electric Vehicles: Is Generalization The Right Way To Go?

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ABSTRACT

Since 2010, scholarly articles on the topic of electric vehicles have increased exponentially. A review of the literature, however, reveals mixed, and sometimes conflicting results. This paper suggests that the fragmented literature reflects the dynamic, evolving nature of the domain being studied and poses some serious ontological, epistemological, and methodological issues.

EV has the typical features of the embryonic or introductory stage of the product life cycle (PLC). Research findings based on later versions of EVs will be different from those based on early versions of EVs. Problems will arise when applying findings accumulated from the study of early adopters featured in the introductory stage to the behavior of early majorities who crowded the growth stage of the PLC. The EV markets are also segmented, which casts doubts on the need for generalized, grand theories and calls for more regionalized, context based knowledge.

The adoption of EV is an ongoing leaning process. It is not a purely functionality driven objective process, but rather embedded with social status, symbolic interactions, normative- face influence, and sense making. Consumers' perceptions, attitudes, and intensions are affected and shaped by different forms of promotions, public policies, cultures, and social norms. It reflects a constructionism theme that acknowledges different perspectives and subjectivities, which are in line with the covenants of symbolic interactionism. It is important to explore in more depth of the process and our understanding of what drives consumers purchase intention towards EVs can be enriched through qualitative research, especially in the tradition of grounded theory.

This study found a dearth of qualitative, exploratory works among the vast body of studies on EVs. There is a lack of knowledge based on well grounded, qualitative, exploratory works. In order to overcome this drawback, this paper calls for a research agenda based on more qualitative, exploratory studies to assist companies and marketers to better identify, understand consumers' needs toward EVs and to develop appropriate market offerings.

NoSQL And Built In Security

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ABSTRACT

Over the last two decades security for information systems has become so important it has become its own field generally referred to as cybersecurity. In effect, even with extensive efforts to build security into information systems, over the seventy-year life of information systems (to date) it is very difficult to ensure security. For databases security this is provided in many ways, including means of storing the data, the data architecture, the distribution of the data, and specific application issues and these are all built into these systems. Can or does NoSQL accomplish these same things?

To assess how this occurs in a NoSQL world three lines of inquiry will be discussed. The first is if the shortcomings identified as needs for NoSQL are inherently likely to incur reduced security. Second, several built in portions of databases that exist for security will be compared to NoSQL to see if the security is available. The third is to identify if a hybrid of systems (NoSQL and RDBMS) can accomplish appropriate security.

It has always been necessary to use the correct tool for a task, even before there were computers. This purpose of this paper is to examine the implications of NoSQL for data that organizations rely upon. Data security is important to nearly everyone as our culture has become dependent on data systems.

Computing The Weighted Average Cost Of Capital: A Teaching Note

Carl B. McGowan, Jr., Norfolk State University, USA

ABSTRACT

The goal of corporate financial management is to maximize the value of the firm as measured by the total market capitalization of the firm. When making long-term investment decisions, wealth maximization is achieved when the firm invests in all available projects that have a positive net present value (NPV). To compute the NPV, the firm needs to know the appropriate discount rate to use to discount the future cash flows from the project. This discount rate is the cost of capital, which is the minimum required rate of return on investment. It represents the opportunity cost of funds for the firm, that is, the minimum rate of return that the firm or investors could achieve in another investment. This paper is a teaching note discussing the Weighted Average Cost of Capital and showing how to calculate the WACC.

INTRODUCTION

The goal of corporate financial management is to maximize the value of the firm as measured by the total market capitalization of the firm. When making long-term investment decisions, wealth maximization is achieved when the firm invests in all available projects that have a positive net present value (NPV). To compute the NPV, the firm needs to know the appropriate discount rate to use to discount the future cash flows from the project. This discount rate is the cost of capital, which is the minimum required rate of return on investment. It represents the opportunity cost of funds for the firm, that is, the minimum rate of return that the firm or investors could achieve in another investment. The rationale for using the weighted average cost of capital derives from the Separation Theorem which states that the investing and financing decisions are separate. Whether an investment should be made is determined by the discounted present value of future cash flows not on how the investment is financed.

For example in Table 8-1, assume that a company has two investment projects under consideration and two capital raising opportunities. In 2015, the company is considering an investment that returns 9% and will sell debt at a cost of 8%. If the firm does not apply the separation theorem, the company would accept the project because the return on the project is greater than the cost of funds. In 2016, the company is considering an investment that returns 11% and selling equity at a cost of 12%. If the company does not apply the separation theorem, the company would reject the project because the return on the project is less than the cost of funds. However, it is not logical for the company to accept a project that returns 9% and reject a project that returns 11%. This mistaken capital budgeting occurs because the company did not apply the separation theorem, (Tobin, 1958).

Table 8-1

Capital Budgeting Decisions Ignoring the Separation Theorem

Year	2015	2016
Cost of Funds	8%	12%
Return on Investment	9%	11%
Decision	Accept	Reject

The company avoids this mistake by using the weighted average cost of capital which combines the market value weights of each source of capital and the market value costs of each source of capital as shown in Table 8-2. If the company uses 50% debt and 50% equity, the weighted average cost of capital is 10%. The weight of debt which is 50% is multiplied by the component cost of debt of 8% to get 4% as the weighted component cost of debt. The weight

of equity which is 50% is multiplied by the component cost of equity of 12% to get 6% as the weighted component cost of debt. The weighted average cost of capital is 10% and equals the sum of the weighted component cost of debt plus the weighted average cost of equity.

Table 8-2

Computing the Weighted Average Cost of Capital

Weighted Average Cost of Capital

	Cost	Weight	C*W
Debt	8%	0.50	4%
Equity	12%	0.50	6%
WACC			10%

When the company uses the weighted average cost of capital for making capital budgeting decisions as shown in Table 8-3, the correct decisions are made. The weighted average cost of capital is 10% which is greater than the return on the investment project under consideration for 2015 which has a return of 9% so this project is rejected. The return for the investment project under consideration for 2016 is 11% which is greater than the weighted average cost of capital of 10%. Thus, the company accepts the project with the 11% rate of return and rejects the project with the 9% rate of return.

Table 8-3

Capital Budgeting Decision Making Using the Weighted Average Cost of Capital

Year	2015	2016
WACC	10%	10%
Return on Investment	9%	11%
Decision	Reject	Accept

Modigliani and Miller (1958) show that the overall cost of capital for a company is computed as a market value weighted average of the costs of each of the components of capital used by the firm. The components of capital used in M&M are debt and common stock equity. The weights used in the computation of the weighted, average cost of capital are the proportion of the capital structure represented by each of the cost of capital components. The component cost of each of the components of the weighted, average cost of capital is the marginal cost of capital for each of the capital components.

$k_o = w_d k_d(1-t) + w_c(k_{cs})$
where,

k_o – the firms overage weighted average cost of capital
w_d – the proportion of debt in the capital structure
w_c – the weight for common stock in the capital structure
k_d – marginal cost of debt
t - marginal tax rate
k_{cs} – marginal cost of new common stock equity

The cost of debt is adjusted for taxes since debt is a tax deductible expense while the cost of common stock is paid with after tax dollars.

The component weights are determined from the total market value of the components of the capital structure. The market value of the debt is equal to the current market price of the bonds times the number of bonds outstanding. The total market capitalization of the common stock equity is the current market price of a share of common stock times the number of shares outstanding. The total market value of the firm is equal to the sum of the total market value of

the bonds plus the total market value of the common stock equity. The weight for the debt component of the capital structure is the total market value of the debt divided by the total market value of the firm. The weight for the common stock equity component of the capital structure is the total market value of the common stock equity divided by the total market value of the firm. The weight of the debt component plus the weight of the common stock equity component equal one.

The component cost of debt is the yield to maturity for the firm's outstanding bonds. This value of the component cost of debt is computed by equating the current price of the bonds with the expected future coupon payments and the return of the face value of the bond at maturity.

$$P_o = \Sigma CP_t/(1+ k_d)^t + FV/(1+ k_d)^T$$

where,

Po – the current price of outstanding bond
CPt – the coupon payment of the bond
FV – the maturity value of the bond
T - the time to maturity

The discount rate that makes these two values equal is the yield to maturity.

One method to compute the component cost of common stock equity is the dividend discount model. In Chapter 4, we learned to compute the value of a share of common stock, P_0, as the discounted present value of all of the future dividends. This formula is simplified to $P_0 = D_1/(k-g)$, where D_1 is the anticipated dividend, k is the required cost of equity, and g is the anticipated growth rate. We can solve for the cost of equity, k, to derived from the dividend discount model of the cost of equity, $k=(D_1/P_0)+g$.

The component cost of common stock equity can be derived from the Capital Asset Pricing Model of Sharpe (1964), Lintner (1965), and Mossin (1966). The required rate of return for an investment is equal to the risk free rate of return plus a risk premium. The risk premium is the amount of risk, beta, times the market price of risk, which is the market risk premium, the expected rate of return on the market minus the risk free rate of return.

$$k_{cs} = k_f + \beta(k_m - k_f)$$

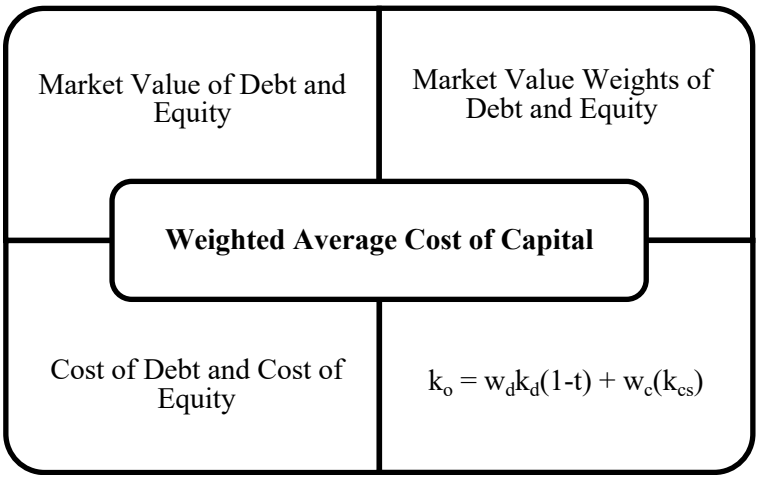
where,

k_{cs} – the component cost of common stock equity
k_m - the expected rate of return on the market
k_f – the risk free rate of return
β - the beta of the common stock equity

Beta measures the systematic component of risk for the common stock equity. Graham and Harvey (2001) find that 73.5 percent of respondents to their survey indicate that the company uses the capital asset pricing model to determine the component cost of common stock equity capital.

Total risk for an investment has two components. The unsystematic component is firm specific and can be diversified away in a properly diversified portfolio. The systematic component of risk is the result of market specific factors and cannot be diversified away. The systematic risk component is measured by beta and is a measure of the security's covariance with the market rate of return. The problem with measuring the component cost of capital for the common stock equity for multinational corporations from different countries results from international capital market segmentation. That is, international capital markets are not fully integrated. Various impediments reduce the ability of investors to arbitrage between markets.

Figure 8-1 The Weighted Average Cost of Capital



Note: The weighted average cost of capital is the opportunity cost of funds to the company and is the minimum required rate of return demanded by investors. There are five steps to compute the WACC.

1. compute the market value of debt, the market value of equity, and the total market value of the company,
2. compute the component weights for debt and equity, which sum to one,
3. compute the component cost of debt,
4. compute the component cost of equity, and
5. compute the WACC by combining all of the component weights and costs in the after-tax WACC formula.

Problem 8-1 provides a detailed solution to the WACC problem. Problem 8-1 contains the data necessary to calculate the weighted, average cost of capital for Collier Coal Company. CCC has 600 bonds outstanding at a market value of $1025 each with a term to maturity of eight years and a coupon rate of 5%. CCC has 30000 shares outstanding with a market price of $25 per share, a current dividend payment of $1.50, and an anticipated growth rate of 6%. CCC has a marginal tax rate of 35%.

The first step to calculating the WACC is to calculate the market value of the bonds and stocks as shown in the first panel of the solution to Problem 8-1. The market value of the bonds is the number of bonds outstanding times the market price per bond.

MV(bonds) = (600)($1025) = $615,000

The market value of the equity is the number of shares outstanding times the market price per share.

MV(equity) = (30000)($25) = $750,000

The MV(total) is the value of the bonds plus the market value of the equity.

MV(total) = $615,000+$750,000 = $1,365,000

We use the market value of bonds, the market value of equity, and the total market value to calculate the weights of each of the components of the capital structure.

The second step to calculating the WACC is to calculate the weights of each of the components of the capital structure as shown in the second panel of Problem 8-1. The component weight for bonds is the market value of bonds divided

by the total market value of the firm.

W(bonds) = $615,000/$1,365,000 = 0.4505

The component weight for equity is the market value of equity divided by the total market value of the firm.

W(equity) = $750,000/$1,365,000 = 0.5495

The total of the weight for bonds plus the weight for equity is always equal to one.

W(bonds) + W (equity) = 0.4505 + 0.5495 = 1.0000 = W(total)

The third step to calculating the WACC is to calculate the component cost of debt as shown in panel three of Problem 8-1. The component cost of debt is the yield to maturity for the outstanding debt. We use the PV/FV table to calculate the component cost of debt. The present value of the bond is the current market price, $1025. The future value of the debt is the maturity value, $1000. The annuity payment is $50 and is equal to the face value of the bonds, $1000 times the coupon rate, 5%. The number of years to maturity is given, and equals eight years. The only remaining variable is the yield to maturity, I%.

PV $1025

FV $1000

Pmt $ 50

I% _???_

N 8

Solving for I% yields 4.62%. Since the bond is selling for a premium, we know that the yield to maturity is less than the coupon rate.

The fourth step in calculating the WACC is to calculate the component cost of equity as shown in panel four of Problem 8-1. In this example, we use the dividend discount model approach. The current dividend is $1.50 and the anticipated growth rate is 5%. The anticipated dividend is $1.59 = ($1.50) (1.06). The dividend yield is 6.36 % and is equal to the anticipated dividend, $1.59, divided by the price, $25, times 100. The total required rate of return for the equity is the dividend yield of 6.36% plus the anticipated growth rate of 6% and equals 12.36%.

Cost of equity = ($1.50)*(1.06)/($25)(100) + 6.00 = 12.36%

The cost of equity is the sum of the dividend yield plus the anticipated growth rate.

The fifth step in calculating the WACC as shown in panel five of Problem 8-1 is to combine all of the component weights and costs in the after-tax WACC formula.

WACC $= w_d k_d(1-t) + w_s(k_{re} \text{ or } k_{cs})$

= (0.4505)(4.62%)(1 - 0.35) + (0.5495)(12.36%)

= (0.4505)(3.00%) + (0.5495)(12.36%)

= 1.35% + 6.79%

= 8.14%

Thus, CCC would need to earn at least 8.14% rate of return on any investment.

Problem 8-1. Calculate the weighted average cost of capital for Collier Coal Mining.	
bonds outstanding	600
bond selling price	1025
years of maturity	8
coupon payment	5%
tax rate	35%
current stock price	$25
current dividend payment	$1.50
anticipated growth rate	6%
shares outstanding	30000

Market value of bonds	195000	=	200	x	975
Market value of stock	300000	=	$15	x	20000
Total	495000	=	195000	+	300000
Weight of bonds	0.3939	=	195000	/	495000
Weight of stock	0.6061	=	300000	/	495000
Total	1.0000	=	0.3939	+	0.6061
PV	975	(-)			
FV	1000				
Pmt	40				
Cost of Debt	4.38%				
N	8				
Dividend Yield	8.40%	=	1.26	/	$15
Growth	5.00%	=	given		
Cost of Equity	13.40%	=	8.40%	+	5.00%
Debt Component	1.12%	=	0.3939	x	2.85%
Equity Component	8.12%	=	0.6061	x	13.40%
WACC	9.24%	=	1.12%	+	8.12%

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New Findings On Millennialism And Large Cycles Affecting Calendars Reliant On Astronomical-Cultural Expectations In The Ancient World

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ABSTRACT

We present our Astronomical calculations which demonstrate the dependence of several different calendars on the astronomical visualizations of the planets in their epochs. Based on our evaluation of an astronomical Table included in al-Khwarizmi's work on the Jewish calendar from 820 AD, we discuss the apparent strong belief that there are large cycles from 'creation' controlling major events in the history of different cultures. In our presentation we discuss such beliefs in Hinduism, as well as in Christian, Jewish and Islamic chronologies. The several examples which are presented, are including new recent findings discussing the astronomical reasons that led, for example, to different biblical chronologies.

In addition, we discuss the interrelations between Millennialism and astronomy that had brought spiritual expectations in different cultures in the historical milestones during the past two millennia.

We suggest that our results contribute to a better understanding in the education in higher levels of the development of science.

INTRODUCTION

As stated by us (A. Cohen, 2018), in all ancient cultures there could not be any document other than believed to be astronomical celestial coordinates of various elements in the sky that could be related to the creation of the universe. See Figure 1.

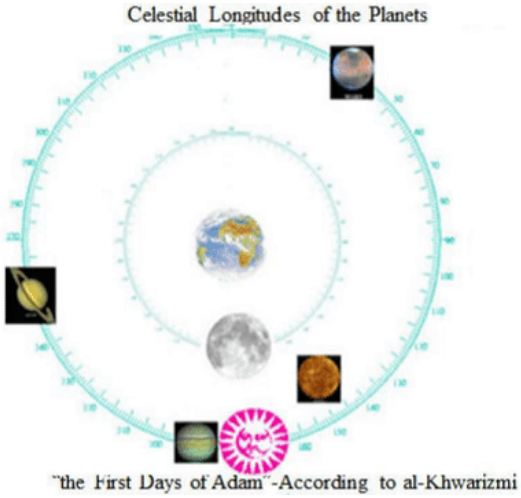

Figure 1. The creation visualization as derived by us based on al-Khwarizmi's astronomical Table. See below figures 5, 6, and 7 (A. Cohen, 2018).

In several cultures in the first millennium B.C. and the first centuries A.C it was accepted that the age of the present Earth did not exceed a few thousand years. As an illustration we can refer to the Kaly-Yuga scale of the age of the present cycle of the world of Hinduism:

According to the Hindu tradition the present cycle started on 3102 B.C. This was the year that the astronomer Aryabhatta calculated in 476 A.C. to be the starting point of the Kaly-Yuga because in that year there had been an extremely rare planetary alignment - all 7 planets including the moon and the sun had been in the same celestial longitude. This unique arrangement of the planets was believed to have been required for describing the unique cultural event in Hinduism when Krishna left the Earth, returned to his heavenly adobe and the epoch of their new era of 4,320,000 years began as detailed by Burges (1858).

In his book Burges include a Table in which it can be seen that there is a Hindu cycle of 4,320,000 sidereal years after which all planets as well as the lunar node and the lunar apogee complete each an integer number of cycles and thus return to the same common celestial longitudes.

Other cultures determined the creation by the combined visualization of certain astronomical conditions associated with unique weather requirements such as the beginning of spring.

This approach had to be based on contemporary astronomical calculations which helped accommodating the exact determination of the Vernal Equinox and the beginning of spring when in history the visualized religious assumptions were made for their day of creation.

We show that this is true for three of the main religions, namely the Jewish, Islamic, and the Christian visualizations of their day of creation.

1. THE ASTRONOMICAL-SPRING VISUALIZATION OF THE JEWISH DAY OF CREATION

Figure 2. The birth of Abraham, Exodus, the building of Solomon's Temple, and the rebuilding of the 2nd Temple, are all major events in the biblical Jewish history which were assumed to have occurred when the same astronomical visualization of the year of creation had been recurring as in the Figure. See text below.

During the last centuries B.C. and the first centuries A.D. the beginning of the astronomical sign of Aries had been associated with the Vernal Equinox and the beginning of spring. Based on our analysis of an astronomical table (Figure 3) found in an al-Khwarizmi's essay on the Jewish calendar (al-Khwarizmi, 820 A.D., see E. S. Kennedy, 1964),

	The first of the days of Adam. A Friday	The building of the Temple	The beginning of the years of the Two Horned
Mean sun	5 26	5 26;	6 13; 31, 18
Mean moon	5 26	5 26;	4 6; 45, 49
Lunar apogee	1 5	926; 40, 16	7 26; 17. 19
Saturn	8 15	10 22; 9, 1	8 8; 24, 6
Jupiter	6 5	3 7; 42, 34	3 12; 52, 18, 13
Mars	1 6	1 15; 26, 21	8 12; 14, 46
Venus	4 25	7 12; 11, 47	2 1; 22 3
Mercury	The coordinate is missing in the original work	1 13; 19, 19	7 10; 1 18
Lunar node	5 14°	4 26; 34, 11	4 23; 41, 27

Figure 3. al-Khwarizmi's astronomical table.

we show that Figure 3 represents the Jewish sages' view when they had determined the age of the Earth. When we add the Biblical description of the formation of the stars on a Wednesday, to the mean New Moon occurring on 6 pm (exactly) at the end of the first day of spring, the year of creation can be determined with an accuracy of less than 3.2 minutes for the time of the New Moon for each step of 1468 years: (Figure 4):

Length of	the YEAR	365.25			
Length of the	the MONTH	29.5305941			
		Deviation (in days) from the number of days in a cycle vs. the number of days in an imteger number of months	number of months in a cycle	number of years in a cycle	Deviation (in minutes) from the number of minutes in a cycle vs. the number of minutes in an imteger number of months
	1		1		42524
12.36852866	12	10.88287037	12	1	-15671.4
2.713493144	2	7.764853395	25	2	11181.3
1.401555164	1	3.118016975	37	3	-4490
2.490317871	2	1.528819444	99	8	2201.5
2.039493275	2	0.060378086	235	19	-87
25.32076677	25	0.019367284	5974	**483**	**27.8**
3.11752988	3	0.002276235	18157	**1468**	**-3.3**
8.508474583	8	0.001157407	151230	12227	1.6

Figure 5. The continued fraction approach for the determination of large cycles for the length of the year Julian Y and the Jewish mean month M(1). It can be seen that after 1468Y the new moon occurs within 3.3 minutes from the vernal equinox.

When the year is taken to be Y=365.25 days (the assumed to be the length of the year by the early Jewish sages) and the mean length of the month, M(1), as 29.5 days and 793/1080 hours (the Almagest [Toomer, 1984] value and the permanent Jewish calendar value), using the continued fraction method we get large cycles of 483, 502, and 1468 (=483+483+502) years in which the creation picture (Fig. 2) repeats itself. Such a repetition of the astronomical-seasonal visualized image had been believed to be the sign of an important new beginning such as the building of Solomon's Temple. We base the proof of the above statement on our analysis of al-Khwarizmi Table (Figure 3): In that Table the New moons associated with "the First of the Days of Adam", and "The building of the Temple" take place in exactly the same astronomical longitudes. But, in his 1964 article E. S. Kennedy discussed the basic properties of the positions of the planets and made the following remarks which have remained unchallenged (except for by us) - "The numbers for the first two sets of positions [except for the sun and the moon] seem to make little sense". Figure 5 represents al-Khwarizmi's Table positions of the planets in creation:

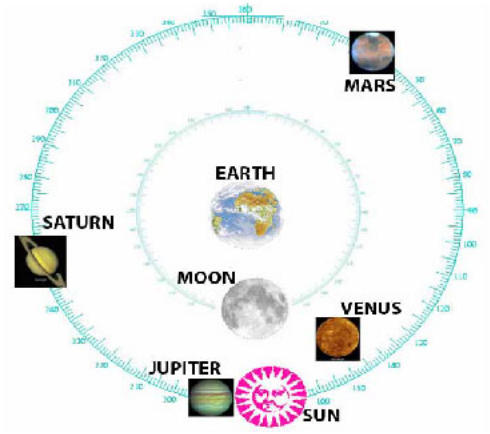

Figure 6. First set of planetary longitudes in al-Khwarizmi's Table.

In our attempts to understand what had been the unseen message which motivated the writers of the original Table (as composed by the Jewish sages several hundred years before reaching al-Khwarizmi's hands) to construct the first set of positions as they are, we tried to determine from the set of positions given for the time of the new moon close to the autumn ("Adam's new moon"), what would be the corresponding assumed positions in the preceding spring.

For that we calculated the positions for six lunar months earlier when the sun, the moon and the other planets were believed by several ancient Jewish sages to have been created.

At first, when we based our calculations on the motions of the planets, the results at the beginning of spring made also little sense.

But, when we found out (as is elaborated in A. Cohen, 2018), that the year of creation in the original Table made for the spring creation, is 3 years (37 lunar months) after the new believed to be the year of creation, we assumed that the astronomical positions of Saturn and Jupiter were interchanged in the handwritten Table as inserted by al-Khwarizmi into his manuscript. (We note that according to Talmudic sources the planet Saturn had to be positioned in the Vernal Equinox on the day of creation. As a consequence there is no way that the original Table of al-Khwarizmi allows it to happen unless we exchange its celestial longitude with that of Jupiter as done by us-see below).

Just by interchanging the 2 positions (Figure 6), the modified celestial longitudes offered a most interesting result:

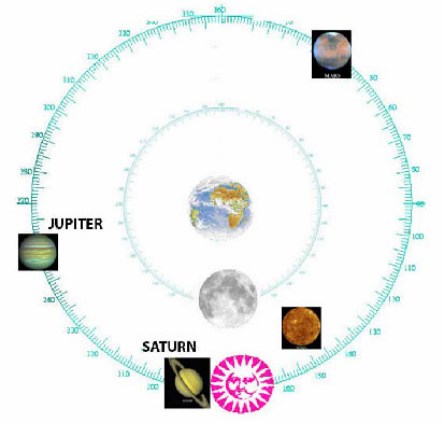

Figure 6. The modified first set of planetary longitudes in al-Khwarizmi's Table.

By moving the positions of all planets backwards to the beginning of spring we got the following surprising, unknown before, picture (Figure 7):

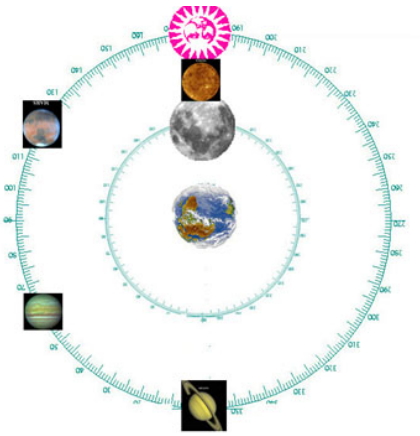

Figure 7. The unique arrangement of the planets in the day of creation as visualized by the ancient Jewish sages. For the celestial longitude of Venus see A. Cohen, 2018.

In addition we also claim that al-Khwarizmi had misinterpreted the New Moons in the first and the second sets of data in Figure 4 to indicate a cycle of 19 years which is part of the permanent Jewish calendar using the length of the year, Y(1), to be exactly Y(1)=235 * M(1) / 19 = 365.246822… days.

This approach which assumes an exact correspondence between the length of 235 months and 19 years was brought to al-Khwarizmi's attention as the new Jewish calendar. Indeed, even though he was wrong in trying to apply the astronomical Table to the new calendar, we owe al-Khwarizmi's interpretation to be the first description of the permanent Jewish calendar as used today, noting that the first Jewish source determining this calendar appeared only a century later.

In contradiction to the present permanent Jewish calendar, in a cycle of 19 years, 235 of the above mentioned mean lunar months, are not equal to 19 years of 365.25 days. The difference after 19 years is close to 87 minutes (against the 0 difference in the Jewish calendar):

235 x M(1) – 19 x 365.25 = -0.06 d = -86.944m.

Evidently this difference is increasing by -86.944 after each cycle of 19 years. But the other large cycles mentioned above of 483, 502, and1468 years provide smaller differences from integer numbers of months: The differences between 483 years and 4974 months, or between 1468 years and 18157 months are -27.8 and 3.3 (!) minutes), respectively (see Figure 5. We, therefore, claim that the 2 identical longitudes of the New Moons in al-Khwarizmi's Table, refer to 2 cycles of 1468 = 2936 years. If we take the year of creation to be 3757 B.C. as explained in A. Cohen, 2018, the building of the Temple took place (within 3 to 8 years from the biblical value) 2936 years later, noting that there is a difference of 160 years between the historically adopted value and the biblical value.

In addition, Exodus, which is also signifying a new beginning (with a repetition of the Figure 3 visualization of the universe) took place 1468+483+483 = 2434 years after creation which is exactly the Old Testament biblical year as calculated by the Christian church from the 17th century on (compared to the 6 years different Jewish 2428 years interpretation of the Masoretic biblical chronology which had been first published in the 2nd century A.D.).

Finally, what can we learn about the astronomical-seasonal role in the determination of the Jewish calendar by the Jewish sages?

As emphasized by Maimonides (Gantz at al., 1956), during the first Millennium the Jewish sages developed 2 permanent calendars after the end of the visual testimonies of the New Moon crescent required by the Sanhedrin in order to declare the beginning of a new month.

The first permanent calendar used M(1) and 365.25 days for the lengths of the mean month and the Tropical-Seasonal year, respectively. The regular year was taken to be 12 mean lunar months long and, consequently, an intercalation method was required to ensure that the spring Holiday, Passover, would never start more than 1 lunar month from the beginning of spring. This well-known requirement makes the Jewish calendar a strongly seasonal-weather related subject:

The intercalation method was based on inserting 7 years of 13 lunar months in a cycle of 19 years. If we require that in the year of creation (counted from the autumn preceding the spring in Figure 2) the beginning of Passover (which always starts at the end of the 14th day of the lunar month of Nisan) the month of Nisan would start at the beginning of spring, the sequence of the insertion of 7 years of 13 months in between the 12 regular years of 12 months each, should be accomplished by 7 groups containing each 2 or 3 years. Merging the 7 groups in the following order 3,2,3,3,3,2,3 years, with the intercalation of the last year at the end of each group which keeps all Passovers to start after the beginning of spring, is presented in al-Khwarizmi's essay.

Since a cycle of 19 years was not exactly equal to 235 months the intercalation sequence should be changed after a large cycle of 483 years.

As a consequence, the intercalation system could not be claimed to have been used from creation but was made to be applied, as we claim, merely between the 5th to the 9th centuries A.D.

Instead, in the second permanent calendar M(1) and Y(1) days were used for the lengths of the mean month and the Tropical-Seasonal year, respectively. In such a system the intercalation system can repeat itself permanently. As we claim this second permanent calendar system used ever since the 10th century counted the creation year to be 3 years earlier (the year 3760 B.C.) than in system 1 (the year 3757 B.C.), and, as a result, the intercalation method was changed to be

3,**3**,**2**,3,3,**3**,**2.**

In that year, namely, 3757 B.C., the first mean New Moon of the spring took place on a Wednesday at exactly 6 pm in Jerusalem. This time of the New Moon agrees with the Almagest value.

In conclusion, the Jewish calendar in all its versions could not have been determined without a strong dependence on contemporary astronomy and atmospheric sciences.

Finally, we add an interesting "coincidence" which we also discovered:

If the belief that the mean newmoon coinciding with the vernal equinox represents a celestial astronomical pattern indicating a new beginning, what would correspond to a celestial arrangements in which the sun, the moon and the vernal equinox are 120 degrees apart from each other, all in the ecliptical plane?

Using Y and M(1) we calculated how many years from the celestial position as in Figure 2 are needed to find such a maximal separation between the sun, the moon and the vernal equinox. The result came out to be exactly 70 years before the new beginning (Figure 8).

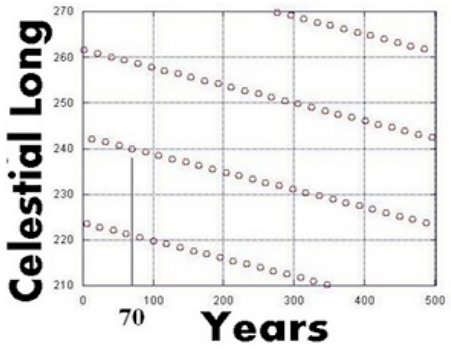

Figure 8. The number of Jewish years (including intercalation) required to find the sun at 240^0 going backwards from the celestial coordinates as in Figure 2.

Moreover, when we take the beginning of a major milestone event (accompanied with the celestial longitudes as in Figure 2) to occur on the first day of Nisan, and taking into account that in every year the vernal equinox would be on a different date due to the intercalation system, the date of the celestial maximal separation would take place on the ninth day of Abb, namely "Tishaa (9) BeAv" the accepted date of the destruction of Solomon's Temple: The 1st day of the month of Nisan takes place 118 days before the 1st day of the month of Abb (= the total number of days in the four lunar months of Nisan (30 days), Iyar (29 days), Sivan (30 days), and Tamuz (29 days)) , or 127 days before the end of the 9th of Abb. On the other hand, in each and every year the mean sun would cross the celestial longitude of 120 degrees (measured from the Vernal Equinox) 121.75 days after the beginning of spring. Consequently, the requirement that the sun would be 120 degrees away from the Vernal Equinox should occur in a year in which the mean new moon of Nisan is 5.25 days before the beginning of spring. Indeed, such a situation takes place 70 intercalated years before the celestial coordinates are as in Figure 2. Is this a coincidence? Or, is it possible that the Biblical date is based on an assumption that a major destruction should occur when there is a maximal separation between the sun, the moon and the vernal equinox? We note that the historical accepted value is 48 years and not 70 years (Solomon's Temple destruction was in 586 BC and Cyrus Declaration - in 538 BC).

2. THE ASTRONOMICAL-SPRING VISUALIZATION OF THE ISLAMIC DAY OF CREATION

The approach of the 6000th year A.M. (Anno Mundi, at the end of the 5999th year after creation) in Europe based on the Julian length of the year, brought Charlemagne to hold his imperial coronation by Pope Leo III during the Christmas and New Year's week of 800-801 A.D. Modern historians that have analyzed this event described it as a pivotal week in Western history, being reinforced by its "unquestionably millennial significance" (Landes, 1999). This "millennial significance" originated from the fact that as of the 5th century A.D. the chronology of Eusebius and St. Jerome (see references) was adopted, according to which the year of creation was 5199 BC (= -5198): 801- 5999 = -5198 = 5199 BC. It can, thus, be concluded that during the 6th through the 9th centuries A.D., and, in particular, during the early years of the foundation of Islam, the widely accepted Biblical (Catholic) year of creation had been the year 5199 B.C. The role of Eusebius' chronology and its translation to Latin by Jerome is well expressed by [De] Hartmann (2003, p. 14).

As emphasized by B. F. Stowasser (2000) the millennium turning point from creation has historically quickened the feeling that the world will be reborn.

We, thus, claim that the two concepts, Millennialism as well as a sun-moon conjunction similar to the conjunction in Creation had both been associated with the foundations of Islam:

al-biruni (see references) emphasized that the prohibition of inserting 7 years of 13 lunar months in a cycle of 19 Julian years and basing all years to be 12 lunar months long, took place only in the year 632 AD (See the English translation by Sachao, 1879, p. 74):

The Prophet waited [with the announcement of the prohibition] till the "farewell pilgrimage", on which occasion he

addressed the people and said:

"The season, the time has gone round as it was on the day of God's creating the heavens and the earth." By which he meant that the months had returned to their original places, and that they had been freed from what the Arabs used to do with them.'

'Therefore,' al-Biruni added, 'the" farewell pilgrimage," was also called "the correct pilgrimage". Thereupon intercalation was prohibited and altogether neglected.'

We next show that by counting the years from creation, all containing merely 12 lunar months, the Prophet Muhammad was crowned on Friday, July 16th 622 A.D. (a day which started on July 15 at 6 pm) as the new Messiah sent by Allah exactly on the first day of the 6000th year counted from the day that was then believed to be the day of Creation:

As emphasized by Richards (1996) the average length of the month used by the Muslims was 29 days, 12 hours and 44 minutes.

The total number of tropical (solar) years since Eusebius' year of creation

(-5198) till 632 A.D. was 5830 years.

Now, if we multiply 5830 solar years by the ratio of the length of the solar over the length of 12 Islamic months (= the length of the Islamic year), we get 6009 Islamic years to within 1 month depending on the exact value of the length of the solar year adopted by the early Islamic astronomers If we assume that there are exactly 6009 Islamic years, then the total number of months would be 6009*12=72108. In fact the length of the solar years that would almost exactly agree with our result of 6009 Islamic years are primarily the Jewish solar year

(= M(1)*235/19 = 365.246822 days)

and also the Almagest Ptolemy's (following Hipparchus) solar year

(= 365.25-1/300 = 365.246667 days):

Surely, when we use the number of months to be 72108, the length of the year can be calculated to be:

72108* (29.5+792/1080.24) / 5830 = 365.246878.

As a result, the use of the lengths of the Jewish or the Almagest solar years by the Islamic astronomers would bring the time of the New Moon relative to the time of the beginning of spring in 632 A.D. to be within a few hours from the beginning of the world, assuming that in the year of creation (-5198), the New Moon took place at exactly the Vernal Equinox.

Following the Almagest and its value for the time of the spring's New Moon the beginning of the astronomical Vernal Equinox in 632 AD took place on March 26, with the beginning of the month of Muharram on July 25th at 18 hours local time in Mecca.

10 Islamic years earlier or 120 months earlier, fell on

July 16th at 18 hours of the year 622 A.D.

(= the date and time of the beginning of the Hijri calendar), the number of Islamic lunar years from creation was thus 5999 years. Therefore, as we claim, with the start of the month of Muharram in the 6000th year from creation, the symbolic arrival of the Prophet Muhammad gave the setup of the first Islamic state a sign that the a new world leader has arrived in that date.

Indeed, Stowasser (2000) highlighted the letters of an eye-witness to the first Islamic millennium after the Prophet Muhammad in 1592 AD:

622 + 1000 x 12 x 29.530555 / 365.25 = 622 + 970.2 ≈ 1592:

In addition, as emphasized by Stowasser, the advisor to the great Moghul Emperor Akbar (1542-1605), Abu al-Faḍl, wrote several letters from which we learn that Akbar was aware of the existence of a Muslim millenarian tradition that viewed the turn of the first Hijri millennium as fulfillment of the earth's 7000-year lifespan.

Abu al-Faḍl found a direct testimony in Abd al-Qadir Badāūnī's treatise (Badauni, 1592) in which the following description is included: "And Khwájah Mouláná of Shíráz, the heretic of Jafrdán, came with a pamphlet by some of the Sharífs of Mecca, in which a tradition was quoted to the effect that the earth would exist for 7,000 years, and as that time was now over the promised appearance of the Mahdí would immediately take place." Even though Abd al-Qadir Badāūnī' himself did not believe in the Millenarian signs, he knew that his own disagreement was not shared by his Emperor Akbar and he added that: "All this made the Emperor the more inclined to claim the dignity of a prophet." The Emperor Akbar was, thus, aware of the fact that the appearance of the Prophet Muhammad could have been associated in the Muslim millenarian tradition to the fulfillment of the earth's 6000-year lifespan.

The Muslim millenarian tradition endorsed by the founders of Islam thus believed that the earth year of creation was 5199 BC based on Eusebius interpretation of the Septuagint biblical chronology.

We conclude that even though the Islamic calendar is not related to the seasons, it could not have been developed without the determination of the beginning of spring in the year 632 A.D.

3. THE ASTRONOMICAL-SPRING VISUALIZATION OF THE DAY OF CREATION BASED ON THE GREEK-ORTHODOX SEPTUAGINT CHRONOLOGY

A. From the last few centuries B.C. major cultures in the Middle East used for the length of the mean lunar month a value of 29.5 days + 44 m. As mentioned above in Section 2, such a value has been in use in the Islamic world ever since the 7th century A.C. as well as by the Jews during the last centuries B.C

As claimed by us (A. Cohen, 2018) the Septuagint version which was the result of the translation of the contemporary Old Testament by 70 sages from the 12 Tribes of Israel into the Greek language in the 3rd century B.C., has a chronology which had been based on astronomical calculations using the length of the tropical year to be 365.25 days and the above mentioned length of the month M(2)=29.5 + 792/1080/24 = 29.530556 days.

When the main visualization resulting from our modified Table of al-Khwarizmi is also applied to the chronology of the Septuagint version, the first new moon in the year of creation took place at the same day as the beginning of spring. Therefore, the year of creation cannot be the same as in the Jewish Masoretic version since going back in time with a different length of the month used in section 1, leads to a different year of creation in which the mean New Moon occurs at the same day as the beginning of spring.

When we used the continued fraction approach for the relative values of Y = 365.25 and M(2), we found that after a grand cycle of 426 years a new moon would occur in practically the same celestial longitude as in the time of creation: 426 x Y - 5269 x M(2) = 4 minutes.

We, therefore, suggest that the basic large cycle in the Septuagint version is thus 426 years. According to al-Khwarizmi Table (Figure 3), the building of Solomon’s Temple is such an important event in the history of the Hebrews in the Old Testament that it is accompanied with the same new moon at the end of the first day of the spring as in the day of creation. Indeed 10 cycles of 426 years after the day of creation, namely, 4260 years, separate between the two events in the biblical chronology of the Septuagint version (the Vaticanus manuscript) as in Table 5 in A. Cohen, 2018.

In addition, when we adopt the year of creation to be the year 5199 BC (following Eusebius –see above), 11 cycles of 426 years would bring us to the rebuilding of Solomon’s Temple, and according to the Bible to its destruction 70 years

earlier. This would bring the year of the destruction to be 3 years off it's historically value: -5198+4260+426-70=582, or 583 BC.

As a consequence, as we claim, al-Khwarizmi's manuscript provides the answer as to how astronomy had been used by ancient cultures to look for celestial signs in order to determine the years of major events thus providing the necessary tools to the ancient's understanding of the history of mankind.

The Millennial Cyclic Significances in Christianity.

Based on the Almagest Ephemeris calculator (van Gent, 2007), we found that the Mean New Moon of the first lunar month of the spring took place in the 22 of March, in the year 30 A.D.. The New Moon occurred when the real sun was within half a day from the vernal equinox.

It can, thus, be claimed by us that this was the year of the Resurrection signifying the beginning of a new era. 13 cycles of 426 years backwards was the year 5509 B.C for which Figure 2 applies and, consequently, declared by the Greek Orthodox Church as the year of creation, taking into account the chronology of the Septuagint version of the bible. We claim that this result presents an excellent understanding of the Almagest derivations during the first centuries A.D. showing the strong relation between the main religious events and the beginning of spring.

We add that the Byzantine year of creation 5509 B.C. was not accepted by all Orthodox Churches:
In the 21st international congress of Byzantine studies, P. Kuzenkov emphasized the general acceptance of the following statement regarding the Alexandrian calendar (Kuzenkov, 2006) –

"There is a striking mysticism regarding the Alexandrian era of Annianus, connecting the Creation, Incarnation (5500 years after Creation) and Resurrection".

Indeed, Kuzenkov's remarks are emphasized to this date by Orthodox churches, such as in the official website of the Episcopal Church of America (referred to us by their representative Rt. Rev. Archpriest Michael D Kirkland (see the website on the Byzantine Creation Era, 2011), in characterizing the Alexandrian era: "This system presents in a masterly sort of way the mystical coincidence of the three main dates of the world's history: the beginning of Creation, the Incarnation, and the Resurrection of Chris. All these events happened, according to the Alexandrian chronology, on the 25th of March; furthermore, the first two events were separated by the period of exactly 5500 years; the first and the third one occurred on Sunday — the sacred day of the beginning of the Creation and its renovation through Christ."

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W. E. B. Du Bois, A. Radclyffe Dugmore, And Visual Sociology: Selected Images That Accompanied The Article "The Negro As He Really Is"

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ABSTRACT

This paper explores the visual sociology of W. E. B. Du Bois. Specifically, examines 20 images that W. E. B. Du Bois used in a 1901 article he published in the June 1901 issue of The World's Work. The photographs were taken by A. Radclyffe Dugmore, a photographer who once described himself as a wanderer. Du Bois anticipated the development of visual sociology as a subfield of the discipline of sociology. In the previous year, Du Bois also used photographic images to illustrate some of his research during the Paris Exposition and in an article titled "The American Negro at Paris," which he published in the November 1900 issue of the Review of Reviews. Du Bois showed in both articles how he could go beyond car-window sociology and utilize photographs to highlight social conditions.

Keywords: Visual Sociology, Car-Window Sociology, Car-Window Sociologist

INTRODUCTION: TOWARDS AN APPRECIATION OF THE VISUAL SOCIOLOGY OF DU BOIS

During 1901, W. E. B. Du Bois was a professor of economics and history at Atlanta University. At the time, Du Bois was deeply involved with the emergence of sociology in the United States of America (USA). He made contributions to sociological theory and sociological methodology. By 1901, Du Bois (1897a, 1898a, 1898b, 1899a, 1899b, 1899c, 1899d, 1899e, 1899f, 1900a, 1900b, 1900c, 1901a, 1901b, 1901c, & 1901d) had already published a major book of sociological research, *The Philadelphia Negro*, and a host of articles in such periodicals as the *Annals of the American Academy of Political and Social Science*, *Bulletin of the Department of Labor*, *The Atlantic Monthly*, *Independent*, *The Southern Workman*, *The American Monthly Review of Reviews*, *The Dial*, and *Harper's Weekly.* Du Bois also testified about his sociological research in Dougherty County before the Industrial Commission, which was under the aegis of the House of Representatives of the 55th Congress. In addition to those activities, Du Bois (1897b) published an important article in the occasional papers series of the American Negro Academy wherein he called for cultural pluralism and Pan-Africanism. As a professor at Atlanta University, he had taken over the Atlanta University Studies of the Negro Problems and developed a Sociology Laboratory. Whereas the Atlanta University Studies of the Negro Problems held a major conference each year and disseminated his sociological research in the proceedings, the Sociology Laboratory was a setting in which Du Bois conducted sociological research and educated students about sociological theory, sociological methodology, and had them engage in empirical research.

The purpose of this paper is to explore the visual sociology of W. E. B. Du Bois. Specifically, it will examine 20 images that W. E. B. Du Bois used in a 1901 article he published in the June 1901 issue of *The World's Work.* The photographs were taken by A. Radclyffe Dugmore, a photographer who once described himself as a wanderer. By collaborating with Dugmore, Du Bois anticipated the development of visual sociology as a subfield of the discipline of sociology. In the previous year, Du Bois also used photographic images to illustrate some of his research during the Paris Exposition and in an article titled "The American Negro at Paris," which he published in the November 1900 issue of the *Review of Reviews*. Du Bois showed in both articles how he could go beyond car-window sociology and utilize photographs to highlight social conditions.

As used here, the term visual sociology refers to a subfield of the discipline of sociology wherein a sociologist will engage in the analysis of visual images or use visual images as a pedagogical tool, including photographs. This definition draws on Liz Grauerholz and Marc Settembrino (2016), Jon Wagner (2002), and Laura Jones and Paul Harris (2020). Grauerholz and Settembrino, following Cameron T. Whitley, related that visual sociology involves the notion that photographs and other images can be studied and analyzed using sociological perspectives. Grauerholz and Settembrino posed that visual sociology can increase people "awareness and sociological understanding of social inequalities, especially income inequalities" (p. 200). They further posed that visual sociology was a pedagogical tool that include using films, printed media, or PowerPoint in the classroom.

Jon Wagner (2002) has related that, during the 1970s, a critical mass of scholars "envisioned sociology as a discipline that had room for working with photographs and other images" (p. 161). He emphasized that it is important for sociologists to not overlook "visual tools and strategies necessary to more fully apprehend and theorize about the social world." Wagner argued that the situation is "an outcome and a trajectory that sociologists of any stripe ought to want to avoid" (p. 171). He acknowledged the work of William H. Whyte (1972), Howard Becker (1974), Kai Erickson (1976), Bruce Jackson (1977), Hugh Mehan (1979), and Clarice Stasz (1979). However, Wagner overlooked or ignored the visual sociology of Du Bois that predated the others by seven decades.

Laura Harris and Paul Jones (2020) said that visual sociology "encompasses the many different ways that visual materials and associated techniques can be put to use in the illumination of social life" (p. 1). They asserted that "visual sociology serves to open up sociological research to different ways of seeing, knowing, and communicating beyond the text" (p. 1). Harris and Jones noted that visual sociology "perhaps has potential to engage new publics in research collaborations and conversations, to open up inquiry of elements of social life typically overlooked, and to democratise sociological research practices" (p 1). For Harris and Jones, visual sociology has become "mainstreamed in the discipline" of sociology (p. 1).

The term car-window sociology, as used here, refers to a social phenomenon wherein sociologists will engage in an unobtrusive measures type of observation from their car-windows and deliberately avoid participant observation at all costs. This definition draws on W. E. B. Du Bois (1901). As used here, car-window sociologist refers to a sociologist who engages in car-window sociology. This definition draws on W. E. B. Du Bois (1901).

Du Bois, Visual Sociology, And Beyond Car-Window Sociology

As a sociologist, Du Bois was committed to going beyond that which he referred to as car-window sociology. He criticized Walter F. Willcox, a professor at Cornell University, for engaging in car-window sociology. In a March 29, 1904 letter to Willcox, Du Bois (1973a) wrote:

The fundamental difficulty in your position is that you are trying to spin a solution of the Negro problem out of the inside of your office. It can never be done. You have simply no adequate conception of the Negro problem in the south & of Negro character & capacity, When you have sat as I have ten years in intimate soul contact with all kinds & conditions of black men you will be less agnostic. I have my prejudices but they are backed by knowledge if not supported. How on earth any fair student of the situation could have stood for a book like Tillinghast's & actually praised it is simply beyond my comprehension. If you insist on writing about & pronouncing judgment on this problem why not study it? Not from a car-window & associated press dispatches as in your pamphlet on crime but get down here & really study it at first hand. Is it a sufficient answer to a problem to say the data are not sufficient when they lie all about us? There is enough easily obtainable data to take you off the fence if you will study it first hand & not thro' prejudiced eyes—my eyes, or those of others. (p. 75)

Du Bois was writing in response to a letter Willcox (1973) sent to him on March 13, 1904. He made a similar critique of Herbert Spencer.

When he wrote his first full-length autobiography, *Dusk of Dawn*, Du Bois (1940) made the following statement about Herbert Spencer:

Social thinkers were engaged in vague statements and were seeking to lay down the methods by which, in some not too distant future, social law analogous to physical law would be discovered. Herbert Spencer finished his ten volumes of Synthetic Philosophy in 1896. The biological analogy, the vast generalizations, were striking, but actual scientific accomplishment lagged. For me an opportunity seemed to present itself. I could not lull my mind to hypnosis by regarding a phrase like "consciousness of kind" as a scientific law. But turning my gaze from fruitless word-twisting and facing the facts of my own social situation and racial world, I determined to put science into sociology through a study of the condition and problems of my own group.

I was going to study the facts, any and all facts, concerning the American Negro and his plight, and by measurement and comparison and research, work up to any valid generalization which I could. I entered this primarily with the utilitarian object of reform and uplift; but nevertheless, I wanted to do the work with scientific accuracy. Thus, in my own sociology, because of firm belief in a changing racial group, I easily grasped the idea of a changing developing society rather than a fixed social structure. (p. 51)

For Du Bois, as Green and Driver (1978) have noted, it was important for sociologists to collect and analyze facts in the form of empirical data instead of sitting in the office and engaging in armchair social theory.

Before he died in 1963, Du Bois (1968) worked on his third and final autobiography. It was first published after his death and simply titled *The Autobiography of W. E. B. Du Bois*. In that book, Du Bois repeated verbatim the statement he made about Herbert Spencer in the first autobiography. He stated:

Social thinkers were engaged in vague statements and were seeking to lay down the methods by which, in some not too distant future, social law analogous to physical law would be discovered. Herbert Spencer finished his ten volumes of *Synthetic Philosophy* in 1896. The biological analogy, the vast generalizations, were striking, but actual scientific accomplishment lagged. For me an opportunity seemed to present itself. I could not lull my mind to hypnosis by regarding a phrase like "consciousness of kind" as a scientific law. But turning my gaze from fruitless word-twisting and facing the facts of my own social situation and racial world, I determined to put science into sociology through a study of the condition and problems of my own group.

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Over the years, Du Bois may have changed his position on some things. However, when it came to the place of empirical research in sociology, he remained consistent.

During the summer of 1898, Du Bois (1901d) descended upon Dougherty County, Georgia to conduct a sociological study on Black people there. Following the research protocol he laid out before the American Academy of Political and Social Science in 1897, Du Bois (1898) proceeded to engaged in a mixed methods to studying the subjects. Hence, Du Bois used the survey method, observation method (including participant observation and unobtrusive measures), secondary data analysis method, and case study method. As part of his observation method, Du Bois had A. Radclyffe Dugmore take photographs of Black people in Dougherty County, including their living conditions, working conditions, and leisure activities. The photographs were published along with his article. By taking this action, Du Bois became a pioneer in what is now called visual sociology.

Unfortunately, Du Bois could not control the actions of Walter Hines Page, the editor of *The World's Work* who chose to use some racist captions along with the photographs. Gates and Oliver (1999) have informed us that, "Because of the racist nature of the captions, it is safe to assume that Du Bois was not their author" (p. 195). Furthermore, Robert W. Williams (2017) has informed that, "The photographs in the essay depict African Americans in daily situations; however, several photos have captions which suggest that Du Bois probably did not supply the wording" (p. 11). Regarding two of the photographs in *The World's Work*, Provenzo (2005) has stated that, "The racist caption almost

certainly is not Du Bois's, but probably written by an editor" (p. 190). Dimock (2013) has argued that the racist captions, included with the photographs, did a disservice to Du Bois and his article.

When Du Bois's article was published in *The World's Work* in the June 1901 issue, it appeared with 19 photographs taken by Dugmore. In the case of Dugmore, he was also known as Arthur Radclyffe Dugmore. Dimock (2013) has related that Dugmore was an "Anglo-Irish, early photojournalist and pioneering wildlife photographer commissioned by the magazine's editor, Walter Hines Page" (p. 39). He explained that Dugmore had "a close working relationship and friendship with the magazine's founder, part owner, and managing editor, Walter Hines Page" (p. 40). According to Dimock, "Du Bois makes no reference to the photographs or their maker in the *World's Work* article or elsewhere" (p. 39). As Dimock has pointed out, Dugmore mentioned his collaboration with Du Bois in a memoir, *Autobiography of a Wanderer*. In that work, Dugmore (1930) stated:

My next work was to do an article with illustrations for the *World's Work* on the negro question in Georgia so; I went first to Atlanta to see Du Bois, one of the most interesting and delightful men I have ever met, and a great educator and believer in the future of the coloured race. He joined us at Albany, where my wife and I stayed at an hotel which was so dirty that it was a disgrace to the white race, and yet Du Bois was not allowed even to come on the verandah to talk to me because he was "coloured." It did not take long to collect the material required for the article, and the beginning of April we were back at South Orange. (pp. 115-116)

Dugmore was referring to April 1901 and South Orange, New Jersey. Dimock charged that Dugmore's autobiography was genial and superficially informative. He also charged that Dugmore "spent his time in Georgia as just one among many commissioned assignments squeezed into a crowded schedule between a honeymoon canoe trip in Kissimmee, Florida, and a trout fishing excursion at the Spruce Cabin Inn in Canadensis, Pennsylvania" (p. 39). Dimock added: "His recollections may have at least as much to with Du Bois's celebrity at the time of the memoir's publication in 1930 as with their work together in 1901" (p. 39). Regarding Dugmore's stay in Dougherty County, Dimock surmised that Dugmore spent "no longer, perhaps, than a week" (p. 50).

According to Dimock (2013), "Of the nineteen images, only two (magazine illustrations 5 and 9) make direct use of Du Bois's text in the captions . . ." (p. 42). Dimock related that at least one of the other captions mocks Black people. He noted that:

A time-honored habit of magazine consumption is to scan the pictures and peruse the captions rather than to read the text with sustained critical attention. To do so in this instance is to come away with a version of African-American life in the Black Belt that usurps and deforms Du Bois's project. In purporting to show "The Negro as he really is," the photographs, together with their captions, supplant Du Bois's sophisticated sociological analysis and his sympathetic portrayal of struggle and resiliency against the legacies of slavery with easily read white stereotypes: the kerchief-wearing peasant woman behind the plow as romantic symbol of timeless and mindless agrarian labor; the dignified cobbler and broom-maker as proud artisans representing the best that can be expected or permitted by way of social standing and professional achievement; young children playing as little Topsies strutting their stud upon the minstrel stage. Far from supporting and adumbrating Du Bois's text, these images convey the coruscating contagion of the white racism typical of the mainstream media in the age of Jim Crow. (p. 39)

For Dimock, the captions accompanying the photographs are problematic. Dimock said that some of the "captions are saturated in the language and outlook of white supremacy, thereby putting them wholly at odds with the tone and content of Du Bois's text" (p. 44). He explained that, "One can only imagine the cold fury of the future author of *Souls* when confronted by the *World's Work* insidious interleaving of Dugmore's photographs and captions into his sociologically informed, lyrically articulated defense of African Americans living in the Black Belt" (p. 49). Dimcock related that the captions could be the production of Page or Dugmore. Dimock stated that, "The specificity of the George Washington anecdote gives room for speculation that the caption is a piece of noxious editorial mischief based on information supplied by Dugmore" p. 44).

The person responsible for the editorial mischief was probably Walter Hines Page. Although Page was the first editor to publish a magazine article by Du Bois when he did so in *The Atlantic Monthly*, he was also a proponent of the educational creed characterized by Booker T. Washington and Tuskegee Institute. By the time *The World's Work*

published Du Bois's article, it had already published articles about Booker T. Washington and his work. For example, the January 1901 issue of *The World's Work* had a short article about Washington's autobiography, a short article about Tuskegee's efforts to help White people create cotton plantations in Africa, and a full-page photograph of him on page 240 ("Mr. Washington's Autobiography," 1901; "The American Negro in Africa," 1901). After 1901, Page also published several articles in *The World's Work* by Washington (1901, 1903, 1906a, 1906b, 1907a, 1907b, 1910a, 1910b, 1910c, 1911, & 1913). However, Du Bois did not publish any further articles in *The World's Work*.

Some four years after the Du Bois's article appeared in *The World's Work*, Page (1973a, p. 113) sent Du Bois a letter and asked him, "I wonder if you are not at work on material that will in the course of time take book form?" Page continued: ". . . my partners and I are sure to be very deeply interested in anything that you write" (p. 113). Du Bois (1973b, 114-115) wrote back to Page that same month and informed him that he was working on three books, which included a novel promised to McClurg; a biography of John Brown promised to Jacobs of Philadelphia; and an unfinished textbook on "Sociology of the Negro America." However, Du Bois added: "At the same time will you let me say frankly that when it is written I cannot help but hesitate to offer it to the exploiters of Tom Dixon" (p. 114). In his way of speaking truth to power, Du Bois was blasting Page for publishing the *Clansman: An Historical Romance of the Ku Klux Klan* by Thomas Dixon (1905) via Doubleday, Page & Company. Page (1973b), who was the co-founder of that publishing company, wrote a second letter to Du Bois and made a defense of his actions based on the notion of freedom of the press, as Dimock (2013) noted.

During the nadir between 1890 and 1920, the mass media were in the process of developing some horrible stereotypes of Black people through magazines and the emerging film industry. Sadly, some Black people participated in the process of making caricatures of their own people during that terrible lynching era. Dimock (2013) has noted that one of those Black people was Booker T. Washington. Many White people were comfortable with the "comic relief" and "reassuring caricature skillfully deployed by Washington in currying favor with the white power elite" (p. 48). Dimock has also noted that a favorite target of Washington was the Black preacher. The White media responded to Washington by offering him space in their magazines and journals as well as many invited speeches. Du Bois (1903) and Ida B. Wells-Barnett (1904) took the position Washington was wrong for telling jokes about Black people to appease his White audiences. Instead, they believed that Washington should have joined them in the campaign to stop lynching and the campaign for full equal rights in the USA.

In 1900, the year before his article appeared in *The World's Work*, Du Bois went to Paris, France and participated in the Paris Exposition. Working in collaboration with Thomas J. Calloway, Du Bois developed a huge exhibit on the social conditions faced by Black people in the USA. The exhibit was composed of 500 photographs, 32 charts, and some maps and plans. Although he included information on Black people in various parts of the country, Du Bois used the photographs, charts, maps and plans to show an in-depth view of Georgia. On the one hand, many of the photographs, if not all of them, were mainly taken by Thomas E. Askew. On the other hand, William Andrew Rogers, a native of Marietta, Georgia a class of 1899 graduate of Atlanta University, drew and colored the charts for the exhibits. With the help of Thomas J. Calloway, Thomas E. Askew, Harry Shepherd, and Rogers, a "Georgia Negro Exhibit" was created as a part of the larger "American Negro Exhibit."

Several scholars have conducted in-depth analyses of Du Bois's use of photograph to illustrate the Black experience. Those scholars include Linda Barrett Osborne, David Levering Lewis, Deborah Willis, and Shawn Michele Smith. Linda Barrett Osborne (2003) explained that Du Bois started his work on the American Negroes Exhibit on December 28, 1899. Osborne informed us that, "As a rising star in the new field of sociology, Du Bois focused on a set of charts, maps, and graphs recording the growth of population, economic power, and literacy among African Americans in Georgia" (p. 13). It was further asserted by Osborne that "these images were merely specimens or representatives, serving the same purpose as the numbers on a chart: evidence in his meticulously documented case for progress and the diversity that existed in this 'small nation of people' less than one generation out of slavery" (p. 20).

David Levering Lewis (2003) discussed the social relationship between Du Bois and Calloway that dated back to their days at Fisk where they worked on the *Fisk Herald* together. He reported that Du Bois referred to the results of his collaboration with Calloway as a "honest, straight-forward exhibit of a small nation of people, picturing their life and development without apology or gloss" (quoted in Lewis, 2003, p. 39). According to Lewis, "Paris was the forum in which colored Americans hoped to win the appreciation and respect that the larger American nation denied to what

Du Bois called a 'small nation of people'" (p. 41). Lewis related that, "The Negro Exhibit won a Grand Prix for the entire collection, a Grand Prix for Hampton University, a total of fifteen gold, silver, and bronze medals, and an honorable mention for Claflin University" (p. 46).

Regarding the Georgia exhibit at the Paris Exposition, Deborah Willis (2003) informed that, "Du Bois had only five months to develop the plan for his exhibit before the opening of the Paris Exposition in April 1900" (p. 55). Willis said that, "The photographs Du Bois selected were powerful and engaging portraits that enabled the viewer to see how African Americans used the studio photographer to redefine themselves. He used the camera as a collector of evidence to support his sociological findings" (p. 67). She identified Thomas E. Askew, Harry Shepherd, and Frances Benjamin Johnston with being in the group of Black photographers who made images for the American Negro Exhibit. Looking at the cornucopia of the larger American Negro Exhibit and the smaller Georgia Negro Exhibit, Willis stated:

> Framing the New Negro images within the context of the Paris Exposition, Du Bois's sociologist's eye, and the photographers' vision allows us to see the self-image projected by the sitter, think critically about the history behind the photograph, and explore the transformation of the mythos projected on the black community both by its own members and by the dominant culture. (p. 77)

Willis concluded that Du Bois used his sociological eye to select photographs for the larger American Negro Exhibit and the smaller Georgia Negro Exhibit to help counter negative Black images found in the mass media and help create "a new awareness and historical consciousness, exemplifying pride and determination" (p. 78).

Shawn Michele Smith (2004) made a conscious effort to situate the photographs in a broader historical context and stated the following about the Georgia Negro Exhibit, which included several albums:

> While it may not be obvious initially, the Georgia Negro photographs share with The Philadelphia Negro an ideological focus on environmental forces as the cause of social conditions. With their many portraits, the albums suggest that individuals stand as the foundation of social progress, but they situate individuals within specific social settings. (p. 93)

Continuing to look at the material in the Georgia Negro Exhibit, Smith surmised that, "Moving through the portraits, the viewer arrives at images that participate in the emerging field of social documentary photography: one finds individuals and groups situated in the social contexts of homes, businesses, streets, and neighborhoods" (p. 93). Regarding the social documentary photographs in one of the albums, Smith stated:

> In the final album of photographs, Negro Life in Georgia, U.S.A., one sees families grouped on the steps of Victorian houses or placed in front of shaded, whitewashed homes; men and women perched in horse-drawn carriages; groups standing on the lawn in front of country churches; men in the doorways of stores and pharmacies; children in rural backyards with chickens and dogs; marching bands and smaller musical groups; individuals seated at large desks in spacious offices; men and boys at work delivering blocks of ice; and men and women at work in fields. (p. 93)

In the view of Smith, Du Bois selected social documentary photographs that shed light on the social conditions faced by Black people in Georgia and elsewhere. Smith concluded that, "The Paris Exposition launched Du Bois into national and international recognition as an African American scholar and a leader in the emerging field of sociology" (p. 1).

In recognition of their leading roles in mounting the "American Negro Exhibit" and the "Georgia Negro Exhibit," Du Bois and Calloway were awarded gold medals. The "American Negro Exhibit" received a Grand Prix by the organizers of the Paris Exposition. As was the case in 1901, he used photographs and other images to illustrate Black life in the USA long before the development of the International Association of Visual Sociology in 1981 and the work of Howard S. Becker and others during the 1970s (Du Bois, 1900, 1903; Lewis, 1900; Curry, 1986; Smith, 2004).

SUMMARY AND CONCLUSION

In sum, when he published his article titled "The Negro As He Really Is" in *The World's Work*, Du Bois demonstrated how he went beyond "car-window" sociology to provide an in-depth look at Black people in the USA. Du Bois utilized a mixed methods approach composed of the observation method (including both participant observation and unobtrusive measures), the secondary data analysis method, the case study method, and the survey method using interviews as the research technique. The article also demonstrates how Du Bois was able to stand on the shoulders of forerunners Harriet Martineau and Karl Marx, as well as contemporaries like Ida B. Wells-Barnett, Jane Addams, Jacob Riis, and Max Weber, to shed light on social conditions in the USA. Du Bois was helping to create a new pathway for sociology. In addition, the article demonstrated how Du Bois pioneered the use of visual images to shed light on social conditions in the USA and elsewhere.

Green and Driver (1978) related that Du Bois deserves a place among the giants of sociology because of the work he did between 1896 and 1910. They explained that sociology was then "being established as an academic discipline" (p. 39). At the very least, Du Bois should be considered as a peripheral fountainhead of sociology who has not received his full due and credit because he is a Black man of African descent. Nevertheless, Du Bois left us with a rich legacy that touches many subfields of sociology, including visual sociology. In fact, for better or worse, Du Bois was one of the first sociologists to utilize and publish photographs along with a report on his empirical research of some aspect of the Black experience. Du Bois (1900, 1901) did so at the 1900 Paris Exposition and in the pages of *The World's Work*. His two exhibits at the 1900 Paris Exposition featured many photographs, won awards, and brought international acclaim to him.

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