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Monitoring Sprawl Through Land Use Cover Change

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Introduction

Development patterns result in conditions that affect residents and their environment; whether a
development pattern is deemed better or worse is based on the preferences of the citizens and their policy
makers. If municipalities are going to judge the consequences of sprawl on their environs, they must first
be able to identify the emerging patterns of growth and evaluate the local impacts on their quality of life.
The goal of our applied research is to provide city staff in smaller communities with a method to identify
and monitor suburban development patterns. We define these communities as holding about 100,000
people or less. These typically have a minimal planning staff and limited resources compared to centers of
greater size. We are working to provide an approach that can be applied to both rapid growth patterns and
slower development. Flexibility in terms of time frame, spatial scale and geographic coverage is
important. Lastly, relative ease of application and limited cost will hopefully add to its attractiveness.

Suburban sprawl and research into it has gained momentum since the 1970s. The term or concept is
viewed negatively in most studies. It has been characterized as: undesirable contemporary urban
development patterns (Ewing et al 2002, Downs, 1998; Sierra Club 1999), a generator of social problems
and inequity (Sturm and Cohen 2004; Galster and Cutsinger 2007) or simply as a form of suburbanization
with characteristics that differentiate it from other forms of suburbanization (Downs, 1997). Sprawl
research has led to substantial discussion and implementation of policies at federal, state and metropolitan
levels. The urban planners tend to find themselves between the researchers and policy makers, tasked
with identifying and dealing with suburban sprawl around their communities.

So, what does it look like? The definition of sprawl remains rather ambiguous. That said, the
academic community studying it has tended to treat it as a condition characterizing an urban area, such as
a pattern of land use (Lopez and Hynes, 2003, Fulton et al, 2001), a process of changing the pattern of
land from nonurban to urban (Galster et al 2001, Cutsinger et al 2005), or the societal and environmental
consequences of those processes (Wilson, 1996; Stoll, 2005). Early research efforts identified general
characterizations of the patterns of sprawl (Harvey and Clark, 1971; Ewing 1994) as being either large
expanses of low density development, strip or axial development, or leapfrog or scattered development.
While this oversimplifies the issue, it does provide a basis from which to pursue quantification of
measures of development patterns and their impacts.

There have been several efforts to both define and empirically operationalize its measurement through
quantitative indices. Density ratios were initially popular due to the simplicity of calculation: metropolitan
area change with metropolitan population change, or metropolitan population within the census urbanized
area and outside it, etc. Typically, these rely on census data at the metropolitan area, urbanized area or
county level (Rusk 1999; Wiewel and Persky, 2002). Refinements included measuring residential
population density using census tracts from metropolitan areas (Lopez and Hynes, 2003) or combining
metropolitan population change with quantity of metropolitan area developed land (from the USDA
National Resources Inventory, calculated every 5 years) (Fulton et al, 2001). The latter data source
breaks from the 10 year census interval. Some measures use data from a single year, giving us a static
picture, albeit of many metropolitan areas across the country. Other track percent change over time to
add a temporal element. These too typically examine multiple metropolitan areas. Scale of measurement
and time frame, while suitable for research, make tracking smaller spatial patterns over the short term
difficult. Interpreting the results measuring sprawl is a matter of degree, ranging from compact to low density to scattered.

Recent attempts to include more measures than density have led to numerous multidimensional measurement approaches that have given us sophisticated indexes of sprawl characteristics. Especially notable are the works of Galster et al (2001), Ewing et al (2002), producing 8, and 7 indexes respectively, using census data, American Housing Surveys and Natural Resource Inventory data for either urbanized areas or metropolitan areas and performing factor analyses. Dimensions such as those from Galster et al (2001) measuring density, continuity, concentration, clustering, centrality, nuclearity, mixed uses and proximity provide information about the emerging urban form (Knapp et al 2007; Jaret et al 2009). The index measures from Ewing et al (2002) are suggested to be of greater value to policy makers, in that their index information relates to parameters over which officials have influence (Knapp et al 2007).

While discussions of correlations of the indexes and of metropolitan rankings on each dimension can become exciting to academics with quantitative leanings, and extensions or explanations of social implications can be of value to social issue scholars and policy makers, reproduction or application by planners is unlikely. While these add considerably to our understanding of the complexities of sprawl, these do not help municipal staff identify trends in their immediate region. How does a local government staff member respond to being highly ranked in one dimension while falling into a lower bracket in another? Does this mean their sprawl is more “leapfrog” in nature or more “continuous low density”? Further, while the data may originate at the census tract level or a one-mile grid, the indexes are computed for the entire metropolitan/urbanized area, masking any pattern differentiation across space.

The bulk of the research mentioned has concentrated on the major metropolitan areas or their urbanized areas, primarily using census data. Both the time frame and the geographic scale of data do not serve suburban, smaller urban, or rural areas effectively. In addition, the statistical complexity is not easily applied by municipal staff. While we no doubt continue to learn about common patterns, processes and consequences through academic research efforts, and hopefully this knowledge leads to relevant policies and regulations, the local planner needs first and foremost to identify development patterns and track their progression. Fast growing areas, in particular, require the ability to update records of change in the short term if public officials hope to apply any form of policy in the relevant area.

To summarize the limitations of current techniques for the small center municipal staff: time frame of data, scale of analysis, and practical experience in sprawl indices application. These methods mostly rely on data that is decennial, their application and interpretation are statistically complex, their results usually deal with the study area as a whole, and this is typically a large metropolitan area (limiting comparison with the local situation). The fundamental needs to identify where sprawl is occurring, in what form, and how quickly are not easily achieved.

Case Study and Procedure

Our proposed procedure will allow the urban planner or municipal staff to:

- Identify land use/land cover patterns in their area based on readily available free satellite data and free statistical packages (when combined with GIS software)
- Identify and measure the extent of dispersion or clustering of newer development from the edge of the urban or political boundary
- Provide flexibility in the geographical scale of analysis i.e. pixel size based on scale of development or regulatory environment
- Provide flexibility in the temporal scale, allowing annual examination to any longer predefined time period
- Provide flexibility in the establishing of buffers from urban edges, major arterials, etc., based on scale and nature of development, and the calculation of development shape indices

Development patterns on the landscape can be detected and mapped using free Landsat remote sensed data and classified using GIS software. At the simplest level of analysis, these development locales can be described simply based on pattern change over time. We can enhance our study using free FRAGSTATS software (we must perform a basic data conversion in ArcMap); this allows us to calculate
a landscape shape index of compactness or irregularity for any segment of the urban fringe that we choose to include. The identification of clusters of development, whether compact or irregular, also removes the issues of pattern “averaging” over the full study area. The modifiable buffer distance range and pixel size allows the planner to customize the approach based on the scale and pace of suburban development and local regulatory conditions (such as lot size limits). The use of an adjustable buffer width can help us customize our parameters to suit the nature of suburban growth. These spatial belts from the urban edge could be widened or narrowed, based on development patterns. This could help concentrate on issues related to low density versus leapfrog sprawl. Similarly, buffers could be established from highways or major arterial roads if patterns suggest a predominant pattern of axial sprawl. Modifying to a larger pixel size will allow for coarser analysis over a larger area that is experiencing significant land use change, or adjust for local regulation specifying larger plots; smaller pixels can be used for examining smaller areas and higher image density requirements. For example, reclassifying the 30mX30m Landsat satellite pixel resolution to 60mX60m would reflect an area unit of about 1 acre; 90mX90m would represent a 2 acre block, etc.

Our case study is the City of Medina in Medina County, Ohio: a community of about 27,000 (2011) (see Figure 1). It is about 30 miles south of Cleveland and 20 miles west of Akron and increasingly serves as a suburban community for both. It is the county seat and contains a traditional downtown surrounded by established neighborhoods. Over the last 20 years, it has felt the impact of sprawl. Its continued population growth mirrors the population decline in the city proper of Cleveland. CNN Money 2009 rated it 40th in its top 100 places to live in the US.

To assess the patterns of suburban growth, the following procedure was created:

**Step 1: Getting Landsat Data**
Free Landsat data is available from the USGS website: http://glovis.usgs.gov/ (see Figure 2). The satellite images are at a 30mX30m pixel resolution scale. These are available monthly for the time period from 1982 to present. Selection can be easily customized based on percent cloud cover. Some data are available for immediate download, others require a request by email; the USGS will respond with an email for a Landsat scene request order.

**Step 2: Detecting Patterns of Development**
Initially, the data is classified into one of three land use categories: developed, undeveloped, or not developable (water); this is done using *Unsupervised Classification* (in ArcMap 10). The scale of resolution can be changed by *resampling* through ArcMap Spatial Analyst to whatever the user chooses define the scale (e.g. 60mX60m, 90mX90m, etc.) This lets the planner/researcher easily adjust to local land subdivision regulations/zoning or the nature of the development pattern in her/his urban area.

This step provides for the simplest level of application. Comparing multiple time period images enables the user to look for changes in the patterns over time and space. The time flexibility provided by monthly data enables the planner to track rapid changing conditions; alternatively, multi-annual time frames may be suitable for slower growth regions.

Spatial unit/detail flexibility enables the planner to resample to a larger pixel unit to study bigger areas in less detail (and vice versa). The pixel size and data availability make it easily applicable to smaller and larger urban places or parts of their suburban fringes.

**Step 3: Calculate the Landscape Shape Index for Clusters of Pixels of Developed Land**
The Landscape Shape Index (SI) can be calculated using free FRAGSTATS software (McGarigal and Marks 1995). Data is converted from vector to raster in ArcMap and brought into FRAGSTATS. The SI calculates a value indicating the degree of compactness: SI=1 indicates a compact pattern (i.e. square or almost square in shape); SI>1 results from an increasingly elongated, fragmented or irregular pattern, indicative of possible urban sprawl (see Figures 3 and 4). The formula is:

$$SI = \frac{P_{ij}}{\min P_{ij}}$$

where: $P_{ij}$ = perimeter of patch $ij$ in terms of number of cell surfaces

$\min P_{ij}$ = minimum perimeter of patch $ij$ in terms of number of cell surfaces
It is possible to get a higher SI score within the city proper in established residential areas with larger properties and heavier vegetation covers (i.e. appearing as undeveloped land). Knowledge of the geographic setting by the planner makes this easily accounted for.

**Step 4: Choropleth Map Comparison over Time and Space**

The calculated SI values are returned to ArcMap, converted to a shape file and shown as a choropleth map. The map for a single time period shows development locations, and the choropleth symbols help us identify development that is compact through fragmented, near to the urban boundary or distant/dispersed (see Figure 5).

Development in the study area can also be compared at different time periods. For example, we selected specific suburban areas of development in our case study area of Medina, OH and focused on change within these between 2005 and 2009. We calculated the SI for the 2009 development that extended from an existing one (i.e. 2005) enabling the easy identification of patterns over time and space (see Figures 6 and 7).

This approach provides the planner with a convenient method for identifying patterns of infill, dispersion, axial growth, etc., over any desired time frame of change, and tie this with any actions taken by local/regional government e.g. CIPs or zoning/subdivision regulation.

**Possible Step 5: Buffer Zones and SI Application**

We can add in a “distance from” component using buffers in ArcGIS; these can be any distance(s) from any point/line/polygon. For example, we could establish a series of rings around the existing city (polygon) or from an arterial road (line) and calculate an average SI for all development within each ring or band. Alternatively, we could divide the region into sectors (e.g. pie slices) and calculate average SI for each sector. This customization over space and direction again enables the planner to focus on areas or trends that are deemed of greatest concern, or on the impacts of current policies.

**Conclusion**

Our purpose is to provide smaller communities (typically limited re: staff and budget) with a method to identify and monitor suburban development patterns that can be applied to both rapid growth patterns and slower development. Flexibility in terms of time frame, resolution scale and geographic coverage, combined with a relative ease of application and limited cost will hopefully add to its attractiveness. At the outset, readily available and free data and software removes small urban center budget constraints. In terms of computer skills, basic GIS experience is needed (and common place today). Additional competency enables more complex application. The approach is customizable to local conditions re: time periods examined, pixel resolution used, and spatial scale included in the sprawl studies. This versatility adds to its suitability for a variety of urban sizes.

The level of analysis can be simple qualitative to sophisticated quantitative. It can focus on individual developments, broader areas, buffer applications, and customized area SI calculations. Existing patterns of development can be easily seen, change over time and space can be easily monitored, and development patterns/issues can be easily presented to municipal staff or elected officials.
References


Figures

Figure 1: Study Area: City of Medina, OH

Figure 2: Landsat Data From USGS
Figure 3: FRAGSTATS and Landscape Shape Index

Figure 4: FRAGSTATS Landscape Shape Index examples
Figure 5: Land Use Cover Shape Index Values, 2009
Figure 6: Land Use Cover Shape Index Values Change Between 2005 and 2009

Figure 7: Land Use Cover Shape Index Values Change Between 2005 and 2009
Disability is one of the underrepresented cultural groups in which any person can become a member at anytime in their lifetime (Barton, 2009; Smart & Smart, 2006). Because of the complexity of disabilities and society’s ignorance about individuals with disabilities, this population encounters many instances of oppression and discrimination (Conyers, 2003). According to Grönik (2009), disability definitions can be functional and administrative in nature. Defining disability from a functional limitation standpoint emphasizes a medical interpretation of disability where the disability definition is based on physical impairments or changes in bodily structures (Grönik, 2009). Administrative definitions of disability stem from state and federal legislation regarding what is considered a disability in order for a person to receive some type of benefit (Grönik). What this means is that governing bodies make decisions on what a disability is and whether individuals meet criteria to receive services and adequate accommodations (Grönik). These differences in definition provide a framework of how different entities define disability and the impact that these definitions have on the accessibility to services for individuals with disabilities.

In addition to the differences in how disability is defined, it is equally important to have knowledge of the various models of disability to which professionals ascribe. Smart and Smart (2006), McDougall (2009), and Sue, D. W. and Sue, D. (2013) described five models that conceptualize disability. The five models are moral, biomedical, functional, environmental, and sociopolitical. The moral model of disability stems from the belief that God has punished a person for committing a sin and therefore has “casted” a disability on a person (McDougall, 2009; Smart & Smart, 2006; Sue, D.W. & Sue, D., 2013). This model of disability is the least used today, however, some non-disabled individuals still have this belief about people with disabilities (McDougall, 2009; Smart & Smart, 2006; Sue, D.W. & Sue, D., 2013). The biomedical model, commonly used in the medical profession, is where the disability can be explained and fixed. From this framework, individuals with disabilities are considered “abnormal” and need to be fixed in order to cope in society (Smart & Smart, 2006). The disability is seen as within the individual with no influence from societal factors (McDougall, 2009; Smart & Smart, 2006; Sue, D.W. & Sue, D., 2013). With this conception of disability, persons with disabilities are treated and perceived as outside the norm group and devalued (Smart & Smart, 2006). Functional and environmental are interconnected models of disability due to their interactions with the individual person’s disability function and environment (Smart & Smart, 2006; Sue, D.W. & Sue, D., 2013). Within the functional and environmental model of disability, the biological aspect is considered, however, more emphasis is placed on the individual’s functions being a person with a disability and the environmental factors that may have caused the disability (McDougall, 2009; Smart & Smart, 2006; Sue, D.W. & Sue, D., 2013). With these models of disability, professionals see the individual with disability as “a whole person with skills, abilities, and demands” (Smart & Smart, 2006, p. 33). The sociopolitical model of disability, a more recent model, focuses on how individuals with a disability “defines disability, refuses to allow and accept professionals or experts definition of disability, and do not see their role as deviant and pathological” (Smart & Smart, 2006, p. 34). The sociopolitical model views the stigmatization, discrimination, and prejudice of disability as a problem within the non-disabled group. Within this framework, the “discrimination and prejudices inflicted upon persons with disabilities are the true handicap” (Smart &
Within these models of disability, disability is conceptualized and approached differently. Professionals should keep these models in mind when interacting with individuals with disabilities.

The definitions and various models of disability provide a framework for disability and how individuals conceptualize the disability status of individuals. With these various conceptualizations, stigma is often associated with how individuals with disabilities are viewed. This stigma is sometimes associated with social isolation, segregation in various institutions, and inadequate educational opportunities people with disabilities have to endure (Conyers, 2003). Legislative acts such as the Individuals with Disabilities Education Act of 2004 (IDEA), Americans with Disabilities Act (ADA), and the Rehabilitation Act of 1973 were created to provide equal access of services for individuals with disabilities (Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010). However, this population still has difficulty obtaining and sustaining employment, housing, and other services that are taken for granted by nondisabled persons (Barton, 2009).

Each of the legislative acts listed above vary in the guidelines of access of services and accommodations for persons with disabilities (Smith, Foley, & Chaney, 2008). The Individuals with Disabilities Education Act (IDEA) mandates that k-12 school districts provide students with disabilities free and appropriate services so students can be academically successful (Conner, 2012). In addition to IDEA, ADA (Americans with Disabilities Act) was developed to offer more access and accommodations for persons with disabilities (Barnard-Brak, Lechtenberger, & Lan, 2010; Conner, 2012; Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010). Under ADA, individuals with disabilities are responsible for reporting their disability to appropriate officials in order to receive adequate services (Hadley, 2011). People with disabilities may not be comfortable with this level of disclosure or they may not be aware that this is something that needs to be done (Barnard-Brak, Lechtenberger, & Lan, 2010). The Rehabilitation Act of 1973, on the other hand, was implemented to ban discrimination practices in federally funded programs and organizations that serve individuals with disabilities (Conner, 2012). Section 504 of the Rehabilitation Act protects students with disabilities from discrimination or access based on their ability status (Conner, 2012). A brief examination of these legislative acts provides evidence that these provisions differ greatly. It is important that professionals who interact with individuals with disabilities are aware of these acts and the impact that these acts have on the ability for persons with disabilities to receive adequate services and accommodations.

**Post-secondary education and students with disabilities**

Individuals with disabilities are entering post-secondary education settings at an increasing rate (Barnard-Brak, Lechtenberger, & Lan, 2010; Denhart, 2008; Hadley, 2011; Huger, 2011). This may be due to the various legislative acts that are in place to provide these students access and accommodations to be academically successful (Barnard-Brak, Lechtenberger, & Lan, 2010). Even though these students are entering postsecondary setting at an increasing rate, the graduation and retention rate of college students with disabilities is not as high as their nondisabled counterparts (Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010). Some of the reasons for the decreased rate in the retention and graduation of these students include “academic dismissal, dropping out for personal reasons, family responsibilities, and the lack of assistance on campus” (Marshak et al., 2010, p. 151). Because of these reasons, it is important for professionals in academic settings to provide support for these students as they transition from high school to college.

The transition from high school to college is an exciting yet overwhelming experience for all students, especially students with disabilities (Conner, 2012). As mentioned above, when student transition from high school to college, the legislative requirements change. Under ADA, students have to disclose their disability status to several campus personnel in order to receive the accommodations needed to be academically successful (Barnard-Brak, Lechtenberger, & Lan, 2010). Students sometimes feel uncomfortable with this level of disclosure and may opt not to receive necessary accommodations (Barnard-Brak, Lechtenberger, & Lan). A qualitative research study was conducted that explored reasons why college students opt to not utilize the disability service office on college/university campuses (Barnard-Brak, Lechtenberg, & Lan). Results concluded that students associated their disability status as
having some stigma, students wanted to develop a different identity than the one they had in k-12 settings, and students were not sure how to adequate explain or express their disability status to those parties that needed to know (Barnard-Brak, Lectenbery, & Lan). From this study, it can be concluded that more interaction with these students and creating an open and supportive environment for these students could be beneficial in alleviating some of these student issues.

According to the above mentioned research study, institutions can help with the transition for students with disabilities by creating an open and disability friendly environment (Huger, 2011). Huger (2011) mentioned that all university personnel, not just those who work in disability services offices, should work toward creating a disability friendly environment for students. It takes various entities across the university to work together and collaborate to make sure that all students, especially students with disabilities, feel as though they are valued on a college campus (Huger, 2011).

**Faculty perceptions and concerns.**

The role of faculty on college/university campuses is to teach students to be efficient in their careers and be productive citizens in society. This role is increasingly more important in their interactions with students with disabilities (Huger, 2011). The faculty role regarding students with disabilities includes, but is not limited to, providing an inclusive, accommodating environment where students can be academically successful (Huger). When accommodating students with disabilities, faculty sometimes struggle with how they can effectively accommodate these students without the feeling of “lowering the standards” of their course or academic program (Scott & Gregg, 2000). Although most faculty members are accommodating, there are faculty who have reservations about the accommodation process (Huger, 2011; Scott & Gregg, 2000). It is vital for faculty to provide a disability friendly and welcoming climate for students with disabilities. The lack of this climate has been noted as a strong variable as to why students with disabilities dropout of colleges/universities (Barnard-Brak, Lechtenberfer, & Lan, 2010; Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010; Scott & Gregg, 2000).

Since faculty play a huge role in the adjustment of college students with disabilities, it is important that collaborations exists between disability services personnel and faculty in order to communicate about accommodating students with disabilities and make sure the needs of these students are being met (Huger, 2011). The purpose of the study was to conduct an assessment on a university campus in the western part of the United States assessing faculty’s perception and understanding of the disability services office and the accommodation process. This assessment was a collaborative effort between a faculty member and personnel within the disability services office on campus. According to Huger (2011), partnerships between faculty and disability services personnel are needed in order to help students become “fully integrated into academic life at the institution” (p. 8). It is hoped that this study initiates the conversation between faculty and disability services personnel while also providing insight in how these two entities should continue to collaborate in order for students with disabilities to be academically successful.

**Method**

**Procedures**

Participants included faculty (adjunct, lecturers, professors) at a four-year public university in the western part of the United States. Upon approval by the university Institutional Review Board (IRB), potential respondents were sent an invitational email outlining the purpose of the study and encouraging participation. The email message included a link to a website where the informed consent and survey was located. Once potential respondents consented to participation, respondents were automatically transferred to the instrument. Upon completion of the instrument, participants responded to a demographic questionnaire.

**Participants**

Invitational email messages to participate were sent to 300 faculty members at a four-year public university and satellite campus in the western part of the United States. Of 300 faculty members, 86 individuals click on the survey link. Of those 86 individuals, six individuals declined to consent to participation in the assessment. The response rate of this instrument was 28.67%. However, when reviewing individual questions and demographic items, between 46 and 69 individuals provided information. This decreased response rate of items between 15.3% and 23%.
Majority of participants identified as female (60.9%), indicated their academic rank as lecturer (36.2%), and utilized the Services for Students with Disabilities (SSD) more than 2 times a quarter (46.3%). Although participants worked in a variety of departments, majority of participants identified their department as Nursing (8.7%) and Social Work (7.2%).

**Instrument**

**Services for Students with Disabilities (SSD) Assessment.** An assessment was created in collaboration with author and SSD personnel. The instrument was designed to focus on faculty understanding and perceptions of accommodating students with disability at the university. SSD personnel identified items they wanted to assess. Editing and revisions occurred among all parties to make sure statements were clear, concise, and addressed the areas SSD wanted to focus on. The final instrument included 12 items in which participants would indicate their level of agreement on a 4-point Likert scale.

**Results**

**Data Analysis**

Participants were asked to complete the instrument and indicate their level of agreement or disagreement with each item on a 4-point scale. A score of 1 indicated participants strongly disagreed with item while a score of 4 indicated participants strongly agreed with item. The mean total score for participants on the instrument was 31.23 and the mean average score 2.60. These results indicated that participants on average disagreed with items than agreed with them. However, the total score that a participant could receive was 48, therefore, participants overall had slightly positive perceptions and understanding about the accommodating process for students with disabilities. See Table 1.

Individual questions were analyzed to see how participants responded on individual items. Mean scores were utilized to indicate the level of agreement or disagreement participants had about particular items. These results indicate that participants equally agreed and disagree with items on instrument. See Table 2.

**Discussion**

Based on the results from the faculty, it is clear that most participants are aware of the accommodation process, the importance of this process for students with disabilities, and are aware of the legal requirements required of them. However, when asked to indicate their level of agreement or disagreement with question three (“I receive assistance when calling SSD for clarification with Accommodation Letters”), 15 respondents strongly disagreed and four respondents disagreed with this statement. Although a relatively small number, it could indicate a need for SSD to provide more clear instructions and details regarding Accommodation Letters.

According to question five (“I am familiar with the Out of Class accommodations. i.e. Blue Card”), 47 respondents either strongly disagreed or disagreed with this item (17 and 27, respectively). This was a relatively high number, over 50%, indicating unfamiliarity with these accommodations. This could indicate a need for SSD to provide information or training on this type of accommodation for students with disabilities.

Interestingly enough, 35 respondents indicated on question six (“The Out of Class accommodation process is faculty friendly.”) they agreed or strongly agreed with this item. This seems inconsistent with the previous question regarding their unfamiliarity with this type of accommodation. This could indicate that respondents were confused by the question or that they found the process faculty friendly despite not being completely familiar with the process. Either way, SSD could continue to provide more clear and concise information regarding the Out of Class accommodation process.

Sixteen respondents indicated they were not familiar with the services provided by SSD in question 10 (“I am familiar with the services that SSD provide students with disabilities.”). Although a small amount of people, this could indicate an area of needed improvement for SSD.

Thirty respondents indicated in question 11 (“I am aware of the process students must go through in order to receive accommodations through SSD.”) they either strongly disagreed or disagreed with this item. According to this information, SSD would need to do more outreach to make sure faculty understand and are aware of all the services they provide students with disabilities at the university.
Regarding professional development opportunities in question 12 ("I have engaged in professional development opportunities to increase my knowledge about the accommodation process for students with disabilities.").

Majority of respondents, 38, either strongly disagreed or disagreed with this statement. It may be beneficial for SSD to provide information, workshops, or conduct outreach sessions with faculty regarding the issues and concerns facing college students with disabilities.

**Recommendations**

When reviewing each individual question and looking at the respondents’ average scores, the instrument indicated that majority of faculty were favorable and supportive of accommodating college students with disabilities. However, some individual questions indicated an area of needed improvement between disability services personnel and faculty within the university setting. For example, the most concerning item was where respondents indicated that they have not engaged in professional development opportunities about the accommodation process for students with disabilities and were unaware of the process students must go through in order to receive accommodations. Huger (2011) indicated that disability services personnel should “provide training to faculty and staff regarding appropriate terminology, best practices for managing accommodations in the classroom, and suggestions for increasing access to officers and services” (p. 9). Disability services personnel can provide outreach sessions for faculty, maybe during the beginning of the academic year or each quarter/semester, about the accommodation process or provide faculty with brochures about the accommodation process for students with disabilities.

Because respondents identified with a variety of disciplines, disability services personnel can conduct an additional needs assessment that assesses the needs of faculty by asking specifically what they do not know or need to know about the challenges and concerns of students with disabilities. This information would provide disability services personnel a starting point on how to best assist faculty with the accommodation process.

In addition to conducting additional needs assessments and providing outreach for faculty, disability services personnel can provide professional development opportunities to assist faculty in increasing their knowledge, understanding, and competency in helping students with disabilities. These opportunities could provide faculty members with information about the challenges college students with disabilities face, how faculty can assist these students in being academically successful in their classes and programs, and any concerns or challenges faculty have in accommodating and assisting these students.

Although the above suggestions focused on what disability services personnel can do to collaborate with faculty, there are things that faculty can do to ease the transition of the college student with disabilities. Research suggest that students with disabilities are uncomfortable disclosing their disability to others (Barnard-Brak, Lec tenberger, & Yan, 2010; Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010). Because students have to disclose their disability to faculty in order to receive accommodations, faculty should create a warm, safe, and open environment where students feel comfortable approaching faculty about their accommodations needs.

As mentioned above, if disability services personnel provide outreach and informational sessions regarding students with disabilities, faculty should attempt to attend these sessions to increase their knowledge and skills in interacting and assisting students with disabilities (Huger, 2011).

Faculty can also assist students with disabilities by using a variety of teaching and testing formats (Huger, 2011). Because students learn and test differently, it is important for faculty to incorporate different teaching formats and testing formats to make sure that students, in this case students with disabilities, are able to grasp and understand the concepts in classes (Huger).

Huger (2011) noted some additional recommendations which included, but were not limited to the following:

- Faculty should use multiple means in evaluating students
- Faculty should include people with disabilities in readings, classroom examples, and as guest speakers whenever possible
- Faculty should become knowledgeable about the accommodation needs of students with various disabilities so as to be prepared to fully integrate all students in the educational experiences
Administrators should provide a departmental environment and physical space that allows all students to access personnel and resources (Huger, 2011, pp 8-9).

With these recommendations in place and the collaboration among all entities, students with disabilities would feel valued and welcomed on college campuses.

All in all, the instrument provided information on the services SSD provides and how SSD can continue to improve their services and collaborate with faculty on meeting the needs of students with disabilities and faculty members.

Limitations

Like with research studies, this one had several limitations. The response rate for the instrument was fairly low, therefore, results are not generalizeable to other settings. However, the results do provide SSD with a framework of how they can improve their services and assist faculty in meeting the needs of students with disabilities.

The assessment instrument was created for the purposes of this research study, therefore, in-depth validity and reliability measures were not taken. Results of this study provided information for SSD at the university, but the results should be reviewed and interpreted with caution.

Future research in this area should include focus groups and/or individual interviews with faculty and students who are receiving services through SSD. Information from these focus groups and individual interviews will provide SSD with richer, deeper information regarding faculty and students’ needs and concerns in meeting the needs of students with disabilities.

Conclusion

Faculty play a vital role in meeting the accommodating the needs of students with disabilities, so it is imperative that more collaborative efforts should be in placed to best assist both parties. It takes more than disability services personnel to make a campus a conducive, welcoming environment for students with disabilities. Disability services personnel and faculty should collaborate in order to continue to meet the needs of students with disabilities and help them be academically successful. Only with both entities involved and developing partnerships will the graduation rate increase and dropout rate decrease for students with disabilities.

References


### Table 1
**Mean Scores**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score</td>
<td>46</td>
<td>31.24</td>
</tr>
<tr>
<td>Average</td>
<td>46</td>
<td>2.60</td>
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### Table 2
**Mean Scores – Individual Questions**

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>Accommodation letters provided clear instructions</td>
<td>65</td>
<td>3.06</td>
</tr>
<tr>
<td>Accommodations were kept in secure place</td>
<td>66</td>
<td>3.47</td>
</tr>
<tr>
<td>Received assistance when calling SSD regarding Accommodation Letters</td>
<td>56</td>
<td>2.39</td>
</tr>
<tr>
<td>Aware of expectations regarding Accommodation Letters</td>
<td>65</td>
<td>3.02</td>
</tr>
<tr>
<td>Accommodation Letters</td>
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<td></td>
</tr>
<tr>
<td>Familiar with Out of Class Accommodations</td>
<td>64</td>
<td>2.16</td>
</tr>
<tr>
<td>Out of Class Testing accommodations are faculty friendly</td>
<td>54</td>
<td>2.76</td>
</tr>
<tr>
<td>Aware of legal requirements of accommodating students with disabilities</td>
<td>66</td>
<td>3.21</td>
</tr>
<tr>
<td>Comfortable interacting with students with disabilities</td>
<td>65</td>
<td>3.52</td>
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<td>Accommodating students gives them an unfair advantage</td>
<td>64</td>
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<tr>
<td>Familiar with services SSD provide</td>
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<tr>
<td>Aware of the process to receive accommodations through SSD</td>
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<td>2.56</td>
</tr>
<tr>
<td>Engage in professional development opportunities about students with disabilities</td>
<td>65</td>
<td>2.45</td>
</tr>
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Introduction

No one can predict the future and surely there will be many uncertainties, but one thing everyone agrees is that the world will get increasingly smaller and we will all interact more with each other across, across geographical and political boundaries. In other words, we are living in an interconnected world and we are part of a global community. In this global community, many of the ways of how we deal with the world, how we solve problems, how we interact and work with others, will have to be different from the traditional ways of the 20th century. In the past, each country solved its own problems and people worked within the country or region to achieve goals. But, think of the major problems we face today: climate change, availability of potable water, drug and human trafficking, population explosion, AIDS, contagious diseases, the bird flu, we can go on and on. None of these can be resolved by any country alone. Contagious diseases and birds do not need passports to cross boundaries and they can spread the flu and other diseases widely and rapidly. People must work together at the global level to solve these problems.

We also know that when people get together in a group to solve any problem and to accomplish any task, success is dependent not only on the knowledge of how to solve the problem, but to a great extent it is dependent upon how well people can work together in this group. If the requisite knowledge is not available then it is dependent even more on how well the people work together. When the people are from the same region and share the basic culture, values and priorities, then they can better understand each other, they can better see things from other people’s viewpoint, and thus decrease the chance of misunderstanding. But when people working together have different cultures, values, religions, priorities, then it is difficult to understand others’ reasoning and logic, and it is more difficult to see things from the others’ viewpoints. This lack of understanding is likely to lead to misunderstanding and result in negative consequences ranging from disagreements, to arguments, to fights, to wars. (Feenberg, 1993; Heath, M.J. & Holznagel, D. 2002; Hiltz, R. 1994; Laws, E. M. 2005)

Therefore as educators, we must think about how we can help our student learn to work with people from other cultures effectively and minimize misunderstanding. One traditional way is to send students abroad so they can learn the ways of the foreigners, their values and customs, etc. The immersion in another culture can be very effective. However for economic and other reasons, few students can go abroad. Here in the US, IIE reports that less than 4% of our students participate in Study Abroad programs. While we have no official statistics for the rest of the world, it is safe to assume that in the majority of countries the percentage of students studying abroad would be lower than that for American students. And, everywhere in the world the rare opportunity of studying abroad is usually available only to the very smart or the very wealthy. Consequently there are at least 95% of students in most countries who do not go abroad, yet 100% of students live in the same global community as the smart and wealthy ones. Students without the study abroad opportunities can only learn about other cultures from limited and often biased sources like movies, TV programs and sensational news highlights. These are selected sources that maybe biased, and will likely lead to misunderstandings rather than reducing them. Thus it is
our task to develop strategies to help the 95+% of the student population to obtain first hand knowledge about the ways of other cultures.

**Methodology**

In 2002 a computer assisted learning expert and a cross-cultural psychologist met and both were deeply concerned about this issue. Their basic thinking was “if our students cannot go abroad, let’s see if we can bring “abroad” to our students”. This paper is a description of how they started to develop a strategy for a Global Understanding project to implement this goal, challenges they encountered, and the several changes they made to overcome the challenges and improve the project.

**A. Design of the Course**

The first decision was that this goal can best be accomplished by bringing students from different countries together in an environment as true as possible to real life global interaction experience through a collaborative class. The “working/learning together” should be as real as possible even though the students are sitting in their own classroom on their individual campuses. To accomplish this goal three challenges have to be resolved:

1. **The Technology Tool.** What tool can be used to bring them together? Online learning was the first thought that came to our minds, but we wanted more than that. We wanted the students to have as real an experience as possible, that includes seeing hearing and interacting. For us very high speed internet connectivity was available, but the supporting technologies are too cost prohibitive even for our own university not to say for some of the under developed or developing countries we want to partner with. After many trial and error and failed attempts, and many tests with several countries, we decided on using regular internet to accomplish video conferencing. (Abbot, L., Livingston, R. & Robinson, A. 1993; Austin, A., Abbot, L., Mulkeen, A. & Metcalfe, N. 2003; Andrews, T. & Klease, G. 2002; Chia, R.C. & Poe, E., 2011; Chia, R. C., Poe, E. & Yang, B. 2011; Glen, F. 2001)

2. **The Content.** The course is designed to be a basic level introductory course for all students to gain some insight into the culture and values of people from a sample of different countries, and not an in depth discipline specific course. After careful discussions we decided to use topics that are important across countries such as family, meaning of life, etc. Our thinking is that regardless of the student’s majors, this basic global knowledge will be helpful when they deal with people from other countries in many areas, be it academic collaborations, business negotiations, etc. A great deal of time was spent on developing and revising the topics for this “Global Understanding” course. (Andrea, E. 2007; Chia, R. C. & Poe, E. 2004; Chia, R. C. & Poe, 2004; Chia, R. C. & Poe, E. 2004; Massey, A. P., Montoya-Weiss, M. M. & Hung, Y. T. 2003)

3. **The Partnering Countries.** We knew that most of the 4% or so American students who study abroad usually go to countries in western European and English speaking countries with cultures similar to our own, so students usually already have some knowledge about those countries. We decided to choose partnering countries that are diversified, that our students knew little about, countries which will play an important role on the world stage such as China, India, Brazil, Africa, etc. With the rise of the importance of Islamic countries, we also emphasized having more Muslim countries where our students know the least about. (Kragel, P. J.& Chia, R. C. 2004; Chia, R. C., Poe, E., Boney, L., Kim, J. Y., & Maysami, R. C. 2012; Chia, R. C. & Poe, E. 2013)

**B. The Pilot Course with China**

Keeping in mind these major issues, a pilot course was conducted in the summer of 2003 to assess the feasibility of this approach. China was chosen as the first test partner. Our students and the Chinese students met 6 hours everyday, 8-11am our time (China’s 8-11 pm) and 8-11 pm our time (China’s 8-11am). For 2 weeks (10 days) students received the 3 credit hours for the course. The evaluation of this pilot by students and teachers alike was very positive, students from both countries did not want to end the course! But, we also found out that students who took this course had a misconception that all foreigners are like their Chinese partners. Using this assessment result we saw the need to revise the format and add diversity through additional
countries. It was finally decided to have four partner countries in any semester linking in a round robin fashion. While countries A-B are linking via video conference, countries C-D video link at the same time. Then, A-C; B-D and eventually A-D; B-C. Thus at the end of a semester, students will have spent approximately 5 weeks in video conference based discussions with each of three global partners. It was also decided that we should not just take the cultural essence from our partner countries for our own good, so we decided to undertake the major task that we will provide all our partners with the same kind of experience as our own students. With these changes, students from every partner country will have the chance to see diversity in 3 foreign countries, and recognize that there is great diversity among foreign countries.

C. Revised Course with 3 Global Partners

A key ingredient for our course is to create a “personal” atmosphere and relationship among the students from different countries, thus we decided to make the class size small, 16 students per class. Students were randomly assigned ID numbers 1-16. In each class we further divided the students into two halves, students 1-8 made up group 1, students 9-16 comprised group 2. In each linked class the group 1 students from the two cultures sit in a V shaped formation and engaged in each other in small group discussion on the assigned topic via live videoconferencing. Group 2 students sat at the back of the classroom each with a computer and engaged in text chatting with their counterpart student (e.g. 9 with 9; 10 with 10). The topic for the small group discussion (via videoconference) and the individual discussion (via text chat) is always the same. Group 1 and Group 2 students exchange positions in the middle of a class period. The rationale for both small group and individual discussion sessions is that in the former students can see diversity of opinion in any one country and the majority social consensus for that country; whereas in the individual group discussions students can see the “more personal” opinion of the partner student without peer pressure in the group discussion. In the individual discussion sessions, while students are waiting for their partners to respond by text, they observe the small group discussion in the front of the classroom. Frequently this observation would prompt them to ask questions like “a group member from your country just made a particular comment do you agree with this? Do people really act like that?” When the two groups exchange roles, each student can experience “group discussion” and “individual discussion” on the same topic.

At the beginning of the class the teacher stresses the importance of respecting all cultures. The course is to learn about other cultures different from our own, we do not have to accept those values and attitudes but through this course we will learn that the work of the people in that culture. Similarly we will not try to convert anyone to our beliefs and values. We hold these values and beliefs mainly because we believe they are the right ones, they are the good ones, but in this course we will learn that other cultures have their right and good values, and in this way we become more open-minded and accepting of others. This is the main goal of this course.

A great deal of planning and revising have gone into the choice of the specific discussion topics. The following topics and order were selected: Family structure, traditional and current; Cultural traditions and customs; Typical college life based on the country’s educational system; Meaning of life; Prejudices and stereotype. These topics are required for all partner countries when they link. Sometimes due to different countries having different academic calendars, there are additional linking days, the two teachers can then decide on other topics to discuss. The same topics are used when linking with each of the other countries so that students can compare the countries they have linked with on these same topics and note the similarities and differences. The sequence of the topics is also of importance. Students start out with familiar and friendly topics like family or college life in that country. These topics can be easy to discuss and are not necessarily controversial. As students get to know each other through these conversations, they build up trust in each other. They then move into the more controversial topics like the meaning of life. Only at the end do they talk about prejudice and stereotypes. We again emphasize that we constantly remind students that they must be respectful, non-judgmental and open to the opinions and viewpoints that are different. In this progression of increasingly sensitive issues,
we hope the students have developed the trust so they can talk about these more controversial topics with ease and sincerity. Students are linked with three foreign countries, but an additional outcome is that by exploring the cultural aspects, values, and priorities of other countries, they also have the chance of thinking about and understanding their own cultural uniqueness and comparing it with other countries. Thus over a 16 week period, each country’s students had the opportunity to video link with three other countries, and the opportunity to develop an understanding the cultures of 4 countries.

In addition to the regular tests and exams, there is an assignment of collaborative project for each pair of students. The project can be a paper, a video, a presentation or performance, etc as long as it has collaborative activities as its basis. For this collaborative project the two partners usually communicate on a daily basis outside of class using email, skype, twitter, facebook, QQ or other tools available to both partners. In these out of class communication, in addition to working on the project students usually get to know a lot more in depth about their specific partner in such areas as the likes and dislikes of music, sports, hobbies, plan for the future, etc. In this way each student gets to know at least one person in depth for each of the three countries. We have seen friendship developed and lasted over the years. Many of our students have visited their partners in the partner countries and we are sure there are more visits like this that we are not aware of. At least in one situation, the friendship started in this class led to a marriage.

Another method we use to for students to record their own attitude/knowledge changes while taking this course is to require students to write a reflective journal after every linked session. It need not be long but to jot down their reflection of what they think they learned in that section, what surprised them, what was different from their previous beliefs about the other culture, etc. In this way each student can track his/her own path of attitude change throughout the course. Teachers can ask students to share some of their thoughts in their journals and use those to lead discussions. Frequently those journal ideas lead to the most enthusiastic discussions. (Chia, R. C., Poe, E., Meng, F., Benhallam, A., Olivos, M. & Nazarenko, A., 2007; Chia, R. C., Poe, E. & Manhas, P. S. 2008; Chia, R. C., Poe, E. & Wuensch, K. L. 2009; Chia, R. C. & Poe, E. 2010; Chia, R. C. & Poe, E. 2010; Chia, R. C., Poe, E. & Bunch, A., 2010)

Results
We are very proud of this project we developed, bringing students from different countries together in real time so they can learn about each other’s culture, and we have won several awards. Over a decade not only have we sustained our initial project, but we have grown from 1 partner university in 1 country to 48 partner universities in 28 countries. But, does it really work? What do students think about this class? Do they like this format? Do they become more open minded after they take this class? The answers need objective data rather than our own gut feelings. In the following we will briefly describe the results on these questions. From the very beginning we have consistently collected pre-course and post-course data from our students. The data below are those gathered in the academic year 2011-2012. Our classes are designed to be small, therefore we do not have a large enough N to analyze data for each partnering country. For our main goal, to see if there were changes before and after students take the Global Understanding course, we put all student data together and did analysis on the accumulative date pool. Results are presented in table 1.

Table 1 presents those items which indicate a significant difference between the pre-course and post-course survey, they are all in the expected direction. Together they clearly suggest that after taking this course, there is a more positive view toward other cultures and people from other cultures and a greater interest in foreign affairs. Our main goal for creating this course for students who do not have the chance to go abroad and yet gain some real life interaction with global students did lead to a more positive view, became more open-minded, etc. There were some items which did not show a significant difference, including Neuliep’s Ethnocentrism scale. One plausible explanation for this is that students who selected this course may already be quite open-minded and not so ethnocentric, thus this selection created a ceiling effect minimizing the pre- and post- differences.
To get a glimpse of how students reacted to this course, we did a US/China comparison. China is the country where we have the most partners, so we could aggregate data from all 5 partner universities to do the comparison with students from our own university.

Table 2 presents students' opinion from China and US toward this course after taking the Global Understanding course. The items again clearly suggest that students like the course, are willing to take another course like this and will recommend the course to their friends.

Having presented a description of the course and some results from student surveys, we would like to point out some factors which we believe contributed to the success of the GU project.

**Factors Contributing to the Success of this Project**

1. **Realism that touches the heart**: The real time video conference format is a major factor. Students see, hear, interact, discuss, analyze and learn from each other in a real situation. Traditional lectures in class can at best touch the cognitive minds of students, but this real time interactive mode touches the heart of the students. They become more involved with their partners and with the course.

2. **Breadth of partners leads to a balanced view**: The format of having three global partners is also an asset. Students from each country not only learn about a culture that is different from themselves, they also learn there are many differences among “foreign” countries. The scope of 4 cultures (3+ their own) offer them a wide perspective of seeing a balanced picture of the global community.

3. **Equal opportunity for all partner countries**: All partners are equal, every country has the same opportunity as every other country. We also insist on every student be given a chance to speak to assure equality among students within any country. This stress on equality is not lost on the students and they like and appreciate the value of being treated as equals in all classes.

4. **Administrative simplicity and compliance for each partner**: While ECU started the project; we do not require any partner country to pay us any fees for participating. All we ask of the partners is that they allow their own students to participate so students from other countries can learn about their culture through their students. In return their students are given the opportunity to link with three other countries to learn about their cultures. The course at each university is independent and locally administered. No money exchanges hands. Students pay their own local tuition, get credit from their own university, and are graded by their own faculty. In this way, all participating universities are compliant with their own local accreditation requirements and government regulations. In this day and age, all universities are looking for global opportunities and this cost-effect means of creating global understanding is appealing to senior administrators.

5. **Cost-effective and time-effective in creating real life global experience**: Almost all universities have the basic video equipment and computers for a course like this. Thus there is no additional cost to the university compared to any other course. From the students’ viewpoint, they get credit just like they do in any other course, without additional expenses normally associated with global experiences. Furthermore, this course avoids some of the potential negative side effects of going abroad such as: students do not have to spend extra time nor extra money in traveling to and living in a foreign country, they do not have to be apprehensive about living in a foreign country where they do not know the language, may not be used to local food or local customs, etc.

**Limitations and Future Research**

Finally, some limitations and our hopes for future research. The results are quite consistent for East Carolina University students over almost a 10 year period. However, due to the ceiling effect we could not detect pre- post course differences. In the future we need to refine our assessment instruments to measure the effects. Our partner countries have not been returning both the pre- and post survey data from their students. With the small N from partnering countries who have completed both surveys it is not feasible to conduct meaningful statistical analyses on those results. In the future we plan to aggregate data over years to create a large enough sample size to conduct country analyses of the data. It is not easy to have all students from 48 universities in 28 countries to complete the pre- and post- course surveys, it
is our job to find incentives so students will complete the surveys and teachers will conscientiously return the data to us. Internally within our university we will work to get more departments and more colleges become interested in this course since we believe global understanding is needed for all students. Externally we will continue to develop more partners so our students can have the opportunity to gain a basic understanding of more global countries.

References
Chia, R. C. & Poe, E. A pioneering international virtual cultural course. The XVII International Congress of the International Association for Cross-Cultural psychology, Xian, China, August, 2004.
Kragel, P. J. & Chia, R. C. Innovations in medical education using a global classroom to study culture and health care in other countries. Association of American Medical Colleges Annual Convention, Boston, MA, November 2004

Table 1- Items with Significant Differences Between Pre and Post Course Surveys

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<th>ITEMS</th>
<th>MEAN</th>
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<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
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<tr>
<td>Getting to know someone of another culture is an uncomfortable experience for me</td>
<td>1.95</td>
<td>1.82</td>
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<tr>
<td>I enjoy making friends with people who are different from me</td>
<td>4.20</td>
<td>4.31</td>
<td></td>
</tr>
<tr>
<td>I am interested in learning more about other countries and cultures</td>
<td>4.10</td>
<td>4.32</td>
<td></td>
</tr>
<tr>
<td>I am interested in teaching others about my country and culture</td>
<td>4.31</td>
<td>4.40</td>
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Table 2- US-China Student Post-Course Opinions

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<tr>
<th></th>
<th>CHINA</th>
<th>USA</th>
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<tr>
<td>I enjoyed the interactions with our international partners this semester.</td>
<td><img src="image1" alt="CHINA" /></td>
<td><img src="image2" alt="USA" /></td>
</tr>
</tbody>
</table>
I would like to visit one or more of the countries that we linked with this semester.

This course has challenged me to learn new things about myself.

I am satisfied with my experience in this course.
### Appendix
A List of Partner Countries 2011-2012

<table>
<thead>
<tr>
<th>Country</th>
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<td>India</td>
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Bias, Confounding & Interaction in Social Science Study:
A Primer for Researchers

Elias J. Duryea
University of New Mexico

Introduction

In the 1940’s psychologist Kurt Lewin formulated a theory of human behavior which became the model for numerous subsequent iterations to come. In essence, Lewin proposed that all human actions could be traced back to the environment the human being operated within. Such an elegant and precise depiction of behavior precipitated research for decades that would elaborate on this basic conceptualization. Figure one presents Lewin’s theoretical notation for this logic.

Figure 1. Lewin’s Theory of Behavior

That error exists in human behavior and is a function of ecological forces is logically intuitive. In the research arena such error is often referred to as “bias”. When results of research are considered to be debatable or confused as to cause, social scientists call the outcomes “confounded”. Finally when an outcome is said to be the result of multiple combinations of different levels of causes (i.e., variables) investigators state that “interactions” have occurred. (1)

Given the complexity and multi-leveled nature of human behavior and the social environment within which it occurs, it is not surprising that almost all social science research data has some degree of bias, confounding and/or interaction. As most seasoned investigators concur: the problem is not that these phenomena exist (they are inevitable) but that too many researchers are not effectively trained to identify and thus control them in their studies. (2) The result may be that when social science research outcomes are disseminated to varied constituencies an objective view of final conclusions may be absent. (3)

The purpose of this review is not to cite the works of social science authors committing mistakes in the area of research methodology. If such a summary was objective and accurate, it would surely include many of the present authors own miscues. Rather than criticize individual efforts, which is generally the easier path, this report will examine these dilemmas and propose some plausible remedies for future social science investigators.

The Byrd Study

In 1967 Byrd published a classic study on the effect of intercessory prayer on cardiac patient’s recovery. In a large (N = 388), randomized, two-arm study with multivariate analyses he found that patients receiving prayer from unknown “intercessors” while participating in standard cardiac care rehabilitation, reported significantly better medical outcomes (i.e., less need for drugs) than those who received only the standard care. (4) When the study was published in the Southern Medical Journal many cardiac researchers thought the paper was a satire of modern care in the cardiac area. Byrd eventually responded that not only was the study real but that the results should be taken seriously in the field: prayer as an add-on therapy does have a significant and positive effect on such patient’s recovery.

Yet critics continued to attack the study results saying "prayer” as an independent variable could not be verified by any known measurement technique. For something to have an effect it must be documented as having actually been received. Since prayer could not be so validated critics continued their assault on the efficacy of it as a viable treatment. Yet Byrd defended forcefully that because the study experimentally controlled all sources of internal invalidity (i.e., bias, confounding), the conclusion must be accepted. Over the ensuing decades dozens of replication studies took place trying to determine if
prayer was truly a contributing factor in cardiac rehabilitation results. (5,6) As these findings appeared in both academic journals as well as lay media no clear trend emerged: some reported confirmatory results while others did not.

Was the Byrd study flawed with hidden bias, unknown confounding and/or significant and undetected interactions? Were the positive results a function of something other than intercessors praying for patients in a specified hospital wing? As with almost all social and behavioral research it is not possible to know absolutely how and why certain results emerge. (7) Since human beings are the one’s reporting their actions, beliefs and priorities, we must admit that potential for bias, confounding and different types of meaningful interactions among variables may be operating. As social science scholars have long contended these elements are intrinsic whenever humans are asked sensitive questions during data collection. (8) We must admit that many facets of social and especially behavioral science study ask participants to report information on delicate areas. Among them are relatively intrusive questions on one’s income, sexuality, drug and alcohol usage, social and marital status, education attainment levels, political views and the like.

Given that humans may not be consistently truthful when asked to provide personal data in these domains, it appears necessary that researchers try to control or at least acknowledge to readers the possibility for error and thus possible uncertainty in various outcomes. (9) To accomplish this investigator’s must be cognizant of the typologies of bias, confounding and variable interactions that exist in our research and the strategies for managing them.

The Bias Among Us

That bias exists among human beings is well accepted. Bias is generally defined in research terms as: “deviation of results from the truth, or processes leading to such deviation. Any trend in the collection, analysis or interpretation of data that can lead to conclusions that are systematically different from the truth”. (10) Table 1 lists a partial list of various types of bias in research areas. As is clearly evident this inventory may give researchers pause and beg the question: “can we ever conduct any studies that do not contain bias”? While daunting in both magnitude and range investigators in social and behavioral science must confront and acknowledge to readers this possibility.

It should also be noted that while research bias infers a fault (premeditated or as a function of methodological ignorance) on the part of the researcher, it does not imply pejorative bias such as occurs in racism or sexism or related social distortions. The final result however stays the same in both forms: systematic error and thus inaccurate estimation of the phenomenon under study. (11) Due to the fact that bias implies inaccuracy, conclusions presented with such error are suspect in validity. Researchers conducting experiments know this issue as “threats to internal validity”. In a subsequent portion of this paper we will offer possible solutions for remedying these threats and thus hopefully enhance researcher’s claims of supposed positive outcomes in their research.

It should be noted that systematic errors (bias) can be either positive or negative in their effect. If positive the error artificially inflates a finding while if negative it will artificially attenuate or weaken it. Regardless of direction the result is still inaccurate and valid inferences from the result are not warranted.

One historically informative illustration of sampling & response bias (the most frequent bias’ in social research), was reported by Perinelli in 1986. The AT&T DIAL-IT 900 poll asked “interested parties” to call – in their opinions on service for a .50 charge. Since the charge of .50 may weaken participation among many, bias was inherent. Moreover specifying “only interested parties need respond” as AT & T executives stated destroyed any reflection of the general public’s actual opinion on the service proficiency of AT&T. (12) Such error is widespread and routine in a wide array of “scientific survey” studies disseminated to the public.

Numerous examples exist throughout history of poor sampling: biased public polling during the 1948 Presidential election produced next day headlines in the Chicago Tribune that claimed Dewey as predicted winner over Truman. As documented since only voters who owned phones (i.e., the more affluent at the time) were surveyed a large portion of the voting population was systematically excluded leading to an in inaccurate and embarrassing conclusion. (13)
The two key features of research-based error are: 1) it is systematic or chronic in nature (i.e., it infects the data consistently over extended data collection periods) and, 2) it introduces incorrect information on the phenomenon under study (i.e., the findings are invalid as portrayed). These two elements are related but conceptually and operationally distinct from the “random” error in research. As scholars have repeatedly stated: bias or systematic error is generally the fault of the researcher but random error is not since it is not as easily forecasted. (14) Finally it is important to note that factors which cause bias weaken validity of results while random errors weaken reliability of results.

**Plausible Solutions to Bias**

The wide-range of studies conducted by social scientists makes it difficult to recommend only one effective strategy for neutralizing potential bias. As each study has its own methods, purpose and unique circumstances the researcher intent on preventing or at minimum lessening bias must select bias control techniques that relate to their own study. The following counter-measures are generally considered the most feasible and most effective for researchers to consider before initiating any social science study.

- **Randomization**: Where participants / units of interest are: 1. selected and in true experiments assigned, with equal probability and, 2. their selection is independent of one another. Babbie refers to this as EPSOM sampling or equal probability of selection method. (15) If there is sufficient sample size most appropriately done randomizing spreads all known as well as unknown error out across groups and their results thus neutralizing sources of bias.

- **Matching**: When randomization is not possible selecting participants using matching is an effective substitute. While there are multiple methods available pair-wise matching is the most common: select a participant based on study criteria and then another as her match. They must be comparable on factors related to the dependent variable (i.e., outcome measure). After such comparability is documented one can use a simple coin toss to assign one to the experimental and the other to the control group. Repeating this relatively labor-intensive process 20 times will produce two comparable groups of N = 20 with their only difference being that one gets the treatment and one does not.

- **Blocking**: AKA stratification, using “homogenous groups” allows one to isolate the effects of a supposed cause across different levels of another related factor(s). Smoking cessation approaches for example cannot be assessed accurately unless “intensity of consumption” (i.e., frequency x quantity) of participants is noted. Blocking reduces error because each subgroup has less variation within it. Conversely if both long-term and new smokers are in one group (i.e., heterogeneous) and receive the same treatment, the result for the group is confounded by the large variation within the group.

- **Blinding**: To the extent that participants and / or investigators know which group (experimental v. control) they are assigned human bias exists. If participants are kept ignorant the study is single blinded; if also researchers/data collectors are then it is double blinded & if the data analysts are also “masked” one has a triple blinded study. Blinding reduces the likelihood that people will behave so as to produce some prejudicial and thus biased result.

- **Distal Sites**: Cross-participant contamination occurs when participants receiving an intervention are close in proximity to those who are not. Researchers call this “compensatory or rival behavior” and it introduces bias. Once again it is natural for human beings who learn they are not getting something beneficial and are going to be compared to associates who are, to alter their behavior accordingly. Designing the study beforehand so as to separate the contact between the 2 groups (i.e., schools, communities) allows investigator’s to reduce this error and thus its associated bias in the final results.

**A Note on Statistics to Manage Bias**

Experienced researchers often rely on statistical as opposed to the design methods mentioned above to remove or attenuate potential sources of error in results. Analysis of covariance (ANCOVA), regression techniques and other quantitative data treatments can indeed make error less a problem to valid inference making. (16) Frequently in social research, however, findings find their way into mainstream outlets for consumption by the general population.
Headlines from research on contemporary issues often attract quick and fervent opinions. Such consumers will inevitably fail to scrutinize the methods of a given report because they lack such background. As such researchers can and do frequently disseminate outcomes that many times have been statistically treated to reduce error. While such treatments are generally legitimate they should not be implemented unless other more intelligible methods, more palatable to the consumer, are considered. Surely telling readers that the 2 study communities in the research were separated by 100 miles informs them intuitively that individuals in the study are less likely to communicate about the intervention (i.e., cross contamination would be negligible). Jacob Cohen has articulated this caution along with many others in his classic paper on the use of $p < .05$ in psychological research as far back as 1999. (17)

It should be stipulated that many in the research community erroneously believe that if a study has a large sample size “N”, then the results are more valid. This is simply not the case unless the sample was formed via pure randomization and even then there could be design, fidelity and/or analytical errors invalidating the conclusions. Consider that even a sample of 1,000 could contain systematic error throughout: the author once as a graduate student gave sixth graders a survey designed for seniors. The results were of course not accurate because of not only content but comprehensibility issues.

Confounding Factors

Regardless of discipline research results involving human acts inevitably contain a large array of supposed “causes”. In research trials where a specific outcome is obtained (i.e., teen pregnancies were cut in half after the prevention curriculum was implemented), scholars by training ponder whether the finding was due to the researchers “cause” or whether it may be related to another factor.

Traditionally a finding is either due to: a.) direct 1:1 causation ; b.) chance occurrence ; c.) causal factor in concert with another unmeasured/uncontrolled factor or, d.) an unmeasured / uncontrolled or unknown “confounding factor”. A confounder plausible to the teen pregnancy reduction result above might be the emergence of a number of new teen contraceptive clinics in the study area at the same time of the curriculum. Was the decrease in teen pregnancies due to the curriculum, the clinics or both or some other unknown factor related to getting pregnant the researchers did not know about? To the degree these alternative hypotheses cannot be ruled out, the researchers finding is said to be “confounded”. (18) Many social and behavioral research papers portray this dynamic like the one shown below:

$$\text{cf } \{ \text{F}_1 \rightarrow \text{F}_2 \}$$

where: $\text{F}_1$ is the first factor (cause)
$\text{F}_2$ is the second factor (result)
$\text{cf}$ is the confounder that could alter either or both factors

Much like other fields social research studies frequently report results in view of pre-set hypotheses or research questions. If a finding is found to be positive seasoned and objective investigators will often discuss the limitations associated with the outcome so as to give readers an impartial and more complete assessment of the data. Most rigorous journals require that all findings be interpreted with regard to possible “alternate hypotheses” or relevant confounders. (19) The CONSORT Statement of the federal government outlines for researchers reporting randomized controlled trials a 25-item checklist of methodological areas to be addressed in this regard. (20) To the extent investigators effectively meet these criteria in their studies, their reported results are said to be “evidence-based” and of strong internal validity. The large majority of items in the checklist assess how well the research methods employed manage potential confounding forces.

The National Registry of Evidence-based Programs & Practices (NREPP) under SAMHSA, provides a comparable inventory for prevention researchers who may not be able to implement their programs within a large-scale randomized framework. (21) NREPP also offers criteria for how well a research team formulates a “readiness to disseminate” factor. Regardless the focus of the NREPP like the CONSORT Statement is mostly centered around encouraging investigators to delineate apriori confounding variables and employ various techniques to control their influence on study data.
In the complicated world of social science research such a goal is not easily attained. Many confounding variables influence either the theorized cause and/or its effect. Many are not even known to the researcher at the start of the study (i.e., genetic predisposition). Additionally, many confounders are nearly impossible to measure even if one is cognizant of their presence (i.e., secular or cyclical trends). One need only look retrospectively back to the origin of the AID’s epidemic in the U.S. to understand this difficulty.

**The San Francisco Rubber Man Health Study**

During the HIV crisis a group of gay men from the San Francisco AID’s Foundation received startup funds from the federal government to start distributing condoms and protective sexual behavior literature around the “Castro”, a major gay community in the city. The goal was to increase protective sex among the gay community and thus prevent new incidence of HIV infection. (22) Despite the fact that they distributed tens of thousands of condoms and literature advocating safer sex practices, they could not claim success when HIV sero-positivity rates began to drop in subsequent years. The reason for this was that major confounding forces related to the outcome-HIV acquisition, were not managed. For example, the study did not randomize participants, track their sexual behaviors before and after the campaign or block them into different sub-groups of risk. They also had no evidence that the men who received the condoms and pamphlets had actually adopted safer sex practices. Moreover they had no way to account for the real possibility that the men in their campaign had not been exposed to comparable “safe sex” interventions in other parts of San Francisco (i.e., contamination).

Due to the concerns over these and other confounding influences the group was not re-funded by the Centers for Disease Control (CDC) and did not continue the same level of outreach on AID’s prevention in their community.

Weak research design, data collection and analysis (measurement) are the major pitfalls of beginning investigators. (23) When a study is not able to control sources of internal validity (confounders) the results of the study are suspect: did the campaign produce the outcome or was it related to something else not methodologically managed by the research team? This “third factor hypothesis” quagmire confronts all social and behavioral science scholars conducting research and cannot be ignored. Ironically, investigators in the physical sciences like chemistry and physics have less a dilemma here because they do not have to deal with the same “human element” factors. They are also adept at controlling potential non-human confounding such as heat, density, friction, dosage and other physical factors using sophisticated technological processes. Social and behavioral scientists however, lack such a professional luxury: human cognition and predispositions cannot be controlled by a researcher’s arsenal of advanced equipment.

**Interaction Among Variables**

Social science researchers rarely have a one-to-one causal relationship between study variables. While in biomedicine there are numerous examples of a single cause directly producing a single effect, the same is simply not frequent in social research. When the researcher can isolate multiple causes of an outcome, then a major question is “how do the multiple factors combine to produce the outcome”? This question reflects the research concept known as interaction. For example, if one measured both smoking level and lung cancer rates (cause & effect) in a population and also measured this association by age, we might find that the older ages had greater rates of lung cancer: thus there is an interaction between age and smoking in producing lung cancer. If the rates did not differ by age, there would be no interaction.

Researchers do not tend to report interactions as often as may be needed. Possibly they might feel that such data could only serve to further confuse readers. Yet the information portrayed by interactions can be critical to understanding results and need not be too intricate for most consumers. For example, consider a study by Qian looking at liver cancer rates and exposure to hepatitis B and/or aflatoxin. (24) As is shown in Table 2 when people were exposed to only aflatoxin their risk was 3.4 times higher than not; if exposed to only hepatitis it was 7.3 times greater; but if they were exposed to both, the risk increases to greater than 59 times the risk for either alone.
This illustrates the concept of “synergism” in interactions: when causative factors combine to make produce a risk well beyond what would be expected by their added or even multiplied separate effects, the result is extreme positive synergy. This same concept has been reported for asbestos, smoking and cancer. In fact, due to the extreme positive synergy among these causative factors legal suits against the tobacco industry were successful in achieving funds for victims of the tobacco companies in the U.S. (25) Note that when researchers report an “antagonistic” or “negative” interaction among variables, the opposite effect on the outcome has occurred: lesser risk than would be expected.

In social research this same concept applies but with different variables of interest. Instead of smoking and cancer as the focus poverty level and race may be evaluated with regard to educational level attained. What is crucial in understanding interaction among variables in social investigations is that the final effect or result is a function of the combination of variables within their sociological and environmental spheres. Much like Kurt Lewin postulated decades before: human behavior emanates not from a vacuum but from their environment. Quantifying these interactions helps us understand the etiology of social problems and what solutions may be implemented in communities to reduce them.

**Conclusions**

Scientists in all disciplines are all interested in discovering the causality within their respective fields. If a cause and effect dynamic is found by researchers and subsequent replications validate it, then knowledge is enhanced. At the start of the HIV epidemic science was not sure of the precise causality governing this new virus. Yet scholars eventually were able to delineate its etiology and later develop what is now known as standard “anti-retroviral therapy” for those infected. Mortality rates have at least in western countries been drastically reduced due to this new knowledge.

Unfortunately the advances made in biomedicine have not been equaled by social scholars. The extreme difficulty of understanding human-based actions and cognitions makes the practice of social science research much more demanding. As an anonymous source once stated at a major conference, “a virus doesn’t have a mind”. Still researchers continue their work and lay and academic consumers persist in trying to isolate solutions to various social problems. To the extent that social science investigations can configure their research studies with the aim of reducing systematic bias at the design, data collection, implementation and analysis phases, the result will be enhanced knowledge of us as humans within their environment.

In 2011 Michael Specter summarized the debate over research into the use of placebos in health and medicine. (26) Does the mind interact with the body to generate responses to things that are thought to be operating but in reality do not? Throughout the review Specter acknowledged that while numerous studies paint the placebo as a viable treatment option, in the end critics point out that too many of the research studies on placebos lack control over bias, confounding and interaction. One can then see the value of constructing ones research efforts so that only the “cause” for the “effect” is tenable to readers - not the alternative explanations. Like so much in the life of human beings functioning within their complex ecologies: it is easier said than done. Still social science scholars must continue their work to produce usable and meaningful knowledge of what may enhance our lives. Managing bias, confounding forces and clearly portraying interactions in our research will help us achieve this goal.

**References**

Table 1. Bias Typologies

- **Ascertainment bias**: error in how X is classified
- **Design bias**: error in how a study design was configured
- **Information bias**: error in how X was recorded from a source (observer bias)
- **Measurement bias**: error in how X was quantified (analytical bias)
- **Recall bias**: error in how X is remembered and reported
- **Response bias**: error in how volunteers respond relative to non-volunteers
- **Sampling bias**: error in how people or X are selected
- **Withdrawal bias**: error in X for those who leave a study to those who remain

Where: X is the object of interest being measured, analyzed or interpreted.

Table 2. Interaction of Liver Cancer Factors

<table>
<thead>
<tr>
<th></th>
<th>Aflatoxin -</th>
<th>Aflatoxin +</th>
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<tbody>
<tr>
<td>Hep -</td>
<td>1.0</td>
<td>3.4</td>
</tr>
<tr>
<td>Hep +</td>
<td>7.3</td>
<td>59.4</td>
</tr>
</tbody>
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32
Responsive Approaches to Supporting Professional Learning Communities in Pursuit of Master Teacher Certification

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Abstract

The Master Teachers Academies (MTA) program at the University of Texas at El Paso provided a supportive and responsive context within which local teachers pursued the academic and testing requirements for Science, Technology, or Mathematics master teacher certification. Through the MTA, professional learning communities (PLCs) emerged and became a key component in the successful development and targeting of strategies to produce Master Teachers. An important way in which the MTA PLCs proved useful was in inspiring and implementing divergent analytical techniques and responses thereto in order to help participants prepare for the master teacher certification exam. Using divergent analyses of practice exam results as one of several responsive approaches to supporting the pursuits of the PLCs ultimately produced a cohort certification exam pass rate of 87.5%, improving the program wide pass rate by 21.5%, and helping to facilitate 38.9% of total program-sponsored certifications. The present paper adds to existing research asserting that the efficacy and sustainability of PLCs is dependent upon supportive environments; it also indicates that PLCs predicated upon established conditions and functional definitions can elicit powerful outcomes for teacher preparation and education programs.

The Master Teacher Academies at the University of Texas at El Paso

The Master Teacher Academies (MTA) Science, Technology, and Mathematics (STEM) program at the University of Texas at El Paso (UTEP) was established as part of the Mathematics, Science, and Technology Teacher Preparation (MTTSP) program; this initiative by the Texas Higher Education Coordinating Board (THECB) helped fund the development of several related programs throughout the state. The MTA at UTEP was a collaborative initiative between the UTEP Department of Education and local Independent School Districts (ISDs).

Amidst broader goals related to STEM teacher professional development, the immediate outcome objective of the MTTSP initiative was to increase the numbers of Master Teachers and Masters of Education in the fields of mathematics, science, and technology (THECB, 2009). Thus, the primary focus of the MTA was to support local teachers in obtaining Master Teacher credentials; secondary foci included encouraging and supporting participants’ progression towards graduate degrees in STEM education and overall professional development.

Brown, Alford, Rollins, Stillisano, and Waxman (2013) report on the mid-program success with which MTTSP programs implemented and achieved seven secondary goals related to professional development in STEM teacher readiness. Comparatively, the West Texas MTTSP programs encompassed within the MTA were among the most comprehensively-implemented initiatives; although not necessarily finished with their master teacher courses of study, participants from among these MTA programs also reported higher-than-average self-perceptions of content knowledge and average to above average self-perceptions of pedagogical learning (Brown et al., 2013). Brown et al. (2013) found that many participants noted the development of professional learning communities (PLCs) in connection to positive perceptions of the MTTSP programs.
Brown et al. (2013) do not report any results related to master teacher certification outcomes, perhaps because the MTTSP grant programs were in mid-swing at the time these authors conducted their evaluation. The present paper uses more recent data and program experiences to describe and explore the relationship between the MTA strategies, PLCs, and master teacher certification outcomes.

The master teacher credentialing process coincides with the secondary goals of the MTTSP initiatives evaluated by Brown et al. (2013). According to the THECB (2009), MTs are individuals who possess advanced professional content knowledge and faculty-to-faculty mentoring skills. In order to become a MT, Texas requires experienced teachers to complete a certain amount of relevant course and preparatory hours (Texas Administrative Code Title 19, Part 7, Rule §228.35; Texas Education Agency [TEA], 2013) and to pass the Texas Examinations for Master Teachers (TExMaT) for a given STEM discipline and/or grade level range (TEA, 2013). The TExMaT includes a multiple choice and an essay section (TEA, 2013). The multiple choice questions pertain to STEM area and grade level range content knowledge as well as to broad pedagogical content knowledge; the essay section uses a case study to evaluate examinees’ skills and readiness to be a teacher-to-teacher mentor (TEA, 2013).

The MTA focused on master teacher certification in Mathematics (MMT), grades 4-8 and grades 8-12; master teacher certification in Science (MST), grades 4-8 and grades 8-12; and master teacher certification in Technology (MTT). The MTA sought to prepare participants to meet content knowledge, pedagogical, and professional expectations as gauged by the TExMaT for each of these areas. To this end, the MTA provided financial, academic, and professional development support to teachers through coursework and other training deemed to be supportive and relevant to successfully passing the TExMaT. The MTA strategies were informed by the development, evolution, and responsive support of PLCs.

Development and Responses to Professional Learning Communities

The definition of a “Professional Learning Community” (PLC) remains in flux (Jones, Stall, & Yarbrough, 2013), but there is some consensus on certain features that distinguish PLCs. Although definitions and descriptions of PLCs may expound on them, many (e.g. Jones, Stall, & Yarbrough, 2013; Hipp & Huffman, 2010; Dufour, Dufour, Eaker, & Many, 2006; Blankstien, 2012; Cranston, 2009; Jacobs & Yendol-Hoppey, 2010; la Velle, 2013) include the following characteristics, which were first outlined as criteria for PLCs by Hord (1997):

- Supportive and shared leadership
- Collective creativity
- Shared values and vision
- Supportive conditions
- Shared personal practice

The PLCs that evolved within the UTEP MTA, and the responsive MTA strategies thereto, align with these common definitional criteria.

Shared Values, Vision, Leadership, and Personal Practice

Initially, the MTA anticipated close collaboration with multiple local ISDs. However, early into the implementation of the program, external events and transitions within the region negated the active involvement of several ISD administrations from which teacher-participants were recruited for the MTA. In response, so as to accommodate teacher-participants from all target ISDs, the MTA positioned itself as the central point of contact and facilitator of support for all programmatic elements. As a consequence of the MTA’s position of prominence over delineations of participant groups by school or district, teacher-participants utilized the MTA as the platform around which they developed inter-district, inter-school PLCs. These PLCs were predicated upon participation in MTA and by strand, i.e. inter-district, inter-school PLCs formed among participants seeking MTT, MMT, or MST certification. The MMT and MST PLCs included teachers seeking certification for grades 4-8 or for grades 8-12.

Supportive and Shared Leadership and Conditions

The MTA PLCs served as a vehicle by which to solicit and facilitate peer and program support. These features were bidirectional, with participants first identifying themselves as a group and voicing questions and needs collectively. In response to the recognition of these emerging PLCs, the MTA not only
responded to what was voiced by the groups but also solicited the groups in kind for certain communication, feedback, and organizational purposes. Overall, support of the PLCs proved to be fruitful in a number of ways. Collaborating and communicating with PLCs helped and informed the MTA design of professional development and academic support activities; this mode of supportive interaction with PLCs was identified by participants as being especially important in the recruitment and long-term retention and program completion of participant-teachers from all target ISDs, regardless of whether their administrations were actively involved with MTA.

**Collective Creativity**

Many of the most illustrative examples of responsive approaches to supporting the PLCs that emerged within the MTA pertain to directly to test preparation efforts. Through working with the PLCs, the MTA was able to successfully overcome potential obstacles to master teacher certification.

Per its contract and grant parameters with the state of Texas, the MTA was provided with and allowed to administer a practice exam for the TExMaT. Initially, master teacher qualifying coursework was assumed to provide the foundation for passing both the practice exam and the actual TExMaT. However, after the MTA teacher-participants began taking the practice and actual TExMaT exams, it became clear that more targeted preparation was necessary. Participants reported, and their practice exam and TExMaT score reports concurred with them, that additional content area instruction was needed specific to various aspects of the master teacher strand areas, i.e. in mathematics, science, and technology. Participants also expressed and demonstrated a need for targeted preparation in mentoring, a key aspect of the TExMaT assessment and a defining purpose behind master teacher certification.

In response to these needs, the MTA developed and implemented a number of test preparation workshops to support and further foster strand-specific PLCs. The nature and scope of these workshops quickly came to be informed by and designed in response to feedback from the PLCs. Components of these workshops included content-area instruction salient to the various domain areas of the TExMaT, mentoring workshops, specially-designed courses, and additional exam practice and exam feedback sessions. The MTA contracted with individuals who were already master teacher certified to develop and deliver workshop materials, designed based on surveys of teacher-participants’ domain area interests and study needs. Following these workshops, participants provided immediate and post-testing feedback on the usefulness of the materials and instruction. Workshops informed and developed via this process were held throughout the course of the MTA, and thus became more responsive as time progressed.

These materials, workshops, and collaborative and responsive approaches to supporting participants and PLCs became significant factors in MTA participation and success. This became especially clear as the practice exam came to pose a limitation to participant preparation. Only one official practice exam was provided for each certification strand, subdivided for MMT and MST by grade levels 4-8 and 8-12. Official practice exams are comprised of retired TExMaT multiple choice questions and a case study. The multiple choice questions reflect the domain area competencies identified by the Texas State Board for Educator Certification (TSBEC) (2004; 2002a; 2002b) Master Teacher standards for a given content area and/or grade level range. Domain area competencies for Master Teachers of all STEM strands are very extensive (TSBEC, 2004; TSBEC, 2002a; TSBEC, 2002b). The STEM TExMaT also includes an essay section that focuses on mentoring responses to a case study (TEA, 2013). The results from both the practice exam and the TExMaT are phrased in technical language drawn from these official descriptions of domain areas and competencies.

Thus, not long into the MTA program, responses to preparation workshops indicated in direct and indirect ways that repetition of the practice test and the results the accompanying analytical software generated was not adequate enough to produce passing results on the actual TExMaT. Responsive strategies to this issue focused on developing additional practice materials and innovative approaches to using existing materials. A series of strategies developed to counter the constraints posed by a single practice test and the single, official mode of analysis used to articulate practice test and TExMaT results. The culmination of these strategies was dramatic, and is reviewed henceforth as an innovative, successful example of responsive support and collaboration with PLCs.
Inter-PLC Creativity, Collaboration, and Support

Like other MTTSP programs (Brown et al., 2013), fostering professional communities in support of MT-related learning was among the general goals of the MTA; however, due to the shift in administrative and MTA positioning, MTA PLCs developed and evolved in a generally organic manner. Thus, rather than following premeditated plans, program strategies to sustain, support, and respond to the MTA PLCs evolved in tandem. Strand-specific PLCs within the MTA eventually collaborated with one another, as well as with external PLCs. This inter-PLC cooperation fostered creative and allowed for new support opportunities by the MTA leadership.

Concurrent with the evolution of MTA-PLC interactions, at least one other MTTSP program collaborated with its own PLC (located in Nacogdoches, Texas) to develop a supplemented, experientially-informed TExMaT preparation guide (Kent & Splann, 2012). In 2013, the MTA was offered use of this resource. This document was incorporated into test preparation and practice exam sessions for the MTA MST and MMT PLCs. MTT was not excluded but extraneous factors resulted in a lack of active participation from MTT strand teachers for these sessions, so no MTT results from this activity are available for this analysis and discussion.

Introducing the Kent and Splann (2012) guide to the MTA PLCs was important for several reasons. It offered a new way of articulating and clarifying approach to preparing for the TExMaT. As a peer-informed test strategy guide, it held credence with the MTA participants. As a peer-produced artifact, it served to emphasize the importance of PLCs within master teacher certification programs, by demonstrating their potential to provide concrete, supportive advice for achieving the program goals. As such, the guide seemed to resonate with the teacher-participants at UTEP. The new test preparation guide generated renewed interest in preparing for and taking the TExMaT among teacher-participants who previously felt they had exhausted the preparatory and instructional usefulness of the official practice tests and materials.

The MTA implementation of the Kent and Splann (2012) guide immediately preceded the administration of two practice exam sessions, which were offered in anticipation of the June 2013 TExMaT. The results from the first practice exam showed minor improvement in exam performances. Individual-matched essay responses showed some improvement from previous practice exams. Specifically, the guide had emphasized constructing a strong essay, such as through the use of collaborative, active language, as a critical step to successful examination. It was evident that participants had attempted to apply this advice to the practice exam, but not all had done so successfully. Essays often lacked or lagged in usage of mentoring verbiage associated with high essay scores. In addition, domain-specific analyses of the multiple-choice questions reflected continuing need for improvement.

Supportive Leadership through Use of a Divergent Analytical Methodology

Based on these initial experiences and findings, the MTA saw an opportunity to build on the positive responses expressed towards the unique and student-centered nature of Kent and Splann (2012) guide. In order to provide meaningful feedback and study guidance to its own PLCs and individual participants, the MTA decided it was necessary to complement the innovative Kent and Splann (2012) study materials with equally innovative exam performance analyses. The hope was that by using a novel approach to analyzing and phrasing feedback about participants’ practice exam performances, test preparation efforts would be further reinvigorated and bolstered. The innovative performance analyses were predicated upon a conscious effort to diverge in analytical terminology from official TExMaT frames of reference. Divergent analysis involved two steps, both of which looked at patterns of error in participants’ practice tests and sought to explicitly explain these patterns in language that disregarded the official analytical focus on language of the domain area competencies.

Step One: Patterns in Questions

The first step involved reviewing the practice questions participants answered incorrectly. For each individual’s practice exam, a brief, free-form description of the topic of each erroneously-answered question was noted. These notations were then analyzed for patterns, which were summarized into two to three broad sentences based on the free-form descriptions. Patterns became evident in all exams; examples of patterns identified in the first stage of analysis include having several erroneously-answered questions
related to “physics of motion” or “earth and environmental sciences.” These patterns were found among several practice exams. However, in some cases, patterns were more unexpected and did not be comprehensible and useful until the second stage of analysis was conducted.

**Step Two: Patterns in Answers**

The second stage of divergent analysis involved noting and then analyzing patterns in the ways in which participants answered each question incorrectly. Thus, it built upon and helped explicate the patterns of error documented in the first stage of analysis. This second stage of analysis took into consideration the language of the erroneously-answered question, the chosen answer that was incorrect, and the answer that was identified as correct. For each erroneously-answered question, short, free-form notations were made. These were framed in terms of the question topics and pertained to relationships between correct answers and participants’ incorrect answers. As with the first stage of analysis, these notations were then looked at for commonalities, this time between question topic and patterns of error in answers, then summarized these patterns using non-official language. Indeed, patterns in how questions of certain topics were answered incorrectly became evident in each practice exam. For some participants, this second stage clarified the type of errors being made for questions of certain topics; these results were often very unique. For example, one pattern of error that emerged following the second stage of analysis was that “questions with fractions in the denominator” tended to be answered incorrectly; another example was that “questions related to hazmat procedures” were answered incorrectly because of a tendency to choose “clean-up over evacuation.” A third pattern identified through the second stage of analysis pertained specifically to the mentoring aspect of the TExMaT, in terms of both the multiple-choice and essay portions of the test. With the application of the second stage of analysis, it became clear that many participants were failing to differentiate between pedagogical mentoring strategies applicable to teacher-student interactions, and those more efficacious to teacher-teacher interactions.

**Results and Utilization of Divergent Analyses**

The various examples given for the first and second stages of evaluation indicate the powerful new insights into learning and study needs that were indicated by the divergent analyses of practice exams; patterns such as these would not in any way be identified by the standard analytical tools and feedback provided for the practice test or TExMaT. Moreover, the insights gained from a divergent analysis of practice tests provided the means for utilizing the MTA PLCs and PLC support strategies to dramatically improve TExMaT outcomes.

The results from the divergent analyses of each individual practice test were provided to the respective participants, along with feedback on their essays. Participants who took a practice exam following the introduction of the Kent and Splann (2012) guide were provided with a standard (domain area) analysis of their results as well as with feedback on their essays, framed in terms of a focus on language and ideas related to mentoring strategies. Each participant also received the results from the divergent analyses of their practice test as well as information about common themes found among practice exams overall or within the MST or MMT strand exams. The divergent analyses were enthusiastically received and elicited several responses that reinforced the importance of responsively supporting the MTA PLCs.

After receiving their personalized feedback, the participants began making requests as a single PLC, embodying people from both the MST and MMT strands of the program, as well as both grade level ranges 4-8 and 8-12. The MTA responded to and encouraged this unification of the strand-specific PLCs. In immediate response to the divergent analyses and essay critiques was a request by the PLC for instruction and resources about differentiating between pedagogical approaches for mentoring teachers versus students in regards to the multiple choice section of the test. Also, the PLC voiced the need for additional preparation materials, so as to practice using the new information and revised strategies.

The MTA responded to these requests and used them as an opportunity to provide additional support to participants via the PLCs. The MTA suggested that strategies for answering multiple choice questions about mentoring might inform strategies for writing the essay: by attending to language details, test-takers might better answer questions in the domain-area portion of the test and then apply the ideas and verbiage from the questions to their essay response. To assist learners in achieving these overlapping strategies, The MTA provided participants with a list of action verbs used for resume writing.
Sustaining and Fostering PLC Creativity

In tandem with this advice and word list, the MTA collected and distributed to the unified PLC various study materials developed by contractors for specific strands, including an unofficial, additional case study from which to practice the essay portion of the exam. Participants were encouraged and advised as to how they might utilize the materials, including those not from their particular strand, to focus on the language aspect of questions, errors, and essay responses. The opportunity for participants to function as one PLC and share content-specific study materials provided context for the use of these language-based strategies for the essay and multiple choice questions. Participants also reported sharing resources about pedagogy from MTA and non-MTA courses with their peers in the PLC. The MTA also made content area study materials available based on the themes identified in the divergent analyses, and facilitated participants in pursuing the organization of digital study groups wherein they developed their own practice questions and helped one another with studying.

Since the implementation of the divergent analyses and inter-PLC support materials and strategies, there has been one opportunity for MTA participants to take the TExMaT (STEM TExMaT dates are biannual). Prior to this most recent TExMaT opportunity, the MTA made it a requirement that individuals earn passing scores on both the multiple choice and essay portions of the practice exam in order to register for the TExMaT. The combined implementation of this requirement along with unique study strategies and makes for a group of TExMaT-takers who are well suited for consideration and analysis as a “PLC” cohort that can be contrasted with previous MTA TExMaT-takers, who were not availed of such support and requirements.

TExMaT Outcomes

All but one participant for whom divergent analyses were conducted picked up these as well as their standard results; this individual is not included in all analyses of the PLC cohort for several reasons. This individual did not pass the practice exam and normally would not have been allowed to register for the TExMaT prior to doing so; however, this individual registered for the TExMaT just prior to the implementation of the passing practice exam scores stipulation. Because of these contingencies, this outlier is included in the comparative analyses of MTA participants as a whole, but is not included in the analyses of TExMaT results, outcomes, and impacts for the PLC cohort.

PLC Cohort Results

Ten participants took and passed one or more practice exams using the aforementioned tools and techniques; several participants took two practice exams, although the second exam was not always necessary as some of these individuals had passed the first practice test following the implementation of the aforementioned strategies. According to procedure, all ten of these individuals were authorized to take the TExMaT; of these 10 individuals, eight registered for and took the exam, forming the PLC TExMaT cohort.

The TExMaT pass rate for the PLC cohort was 87.5%, the highest rate documented for any MTA TExMaT cohort. Members of the PLC cohort account for 38.9% of all MTA master teacher certifications. Prior to the PLC cohort, the overall TExMaT pass rate for MTA participants was 47.8%; when the PLC cohort is included with past MTA TExMaT-takers, the overall pass rate is increased to 58.1%. This represents a 21.5% increase in the TExMaT pass rate.

Perceived Impact of Divergent Analyses and Responsive Strategies

Post-exam feedback from participants indicated a high degree of perceived correlation between the unique combination of analytical and responsive strategies and positive test results. Participants identified the divergent analyses as a distinctively helpful approach, especially when paired with the Nacogdoches PLC perspectives as presented by Kent and Splann (2012). Participants stated that the strategies outlined by Kent and Splann (2012) were made more applicable by the provision of the verb list and the suggestion that the domain area questions be used for stimulating ideas for additional strategies and terminology. Moreover, participants expressed their perceptions that the of the support strategies amounted from their combination; together, the new test preparation guide, support materials and ideas, and divergent form of practice test performance analysis provided participants with fresh insight that made it possible to study productively, despite the redundant practice examination materials.
Conclusion

The results from the PLC cohort of TexMaT examinees suggest that responsive and supportive strategies within professional development programs, particularly those that center and make use of PLCs, can be an important component in achieving program outcomes and objectives. This finding is not entirely novel; other literature has established and continues to support the importance of PLCs, especially in the field of education (Jacobs & Yendol-Hoppey, 2010; la Velle, 2013; Jones, Stall, & Yarbrough, 2013; Hipp & Huffman, 2010; Dufour, 2004; Dufour, Dufour, Eaker, & Many, 2006; Blankstien, 2012; Cranston, 2009; Hord, 1997). However, the same body of literature also indicates that in practice, PLCs often fail to develop or endure to fruition; frequently, core components necessary for PLCs to flourish and facilitate educator professional development are neglected (Jones, Stall, & Yarbrough, 2013; la Velle, 2013; Dufour, 2004; Hipp & Huffman, 2010; Blankstien, Houston, & Cole, 2007; Dufour, Dufour, Eaker, & Many, 2006). However, the MTA appears to be an exception, as this program responded in tandem to the evolution of its PLCs, providing and enabling Hord’s (1997) fundamental criteria for PLC success. This may be why MTA PLCs assume a notable, rather superfluous role in moving the MTA towards successfully achieving its primary outcome objective.

The long-term goals of the MTA emphasize training and education that prepares teachers to be masters in their subject matter and mentors to their coworkers. These long-term goals based upon a series of precursor endeavors such as coursework and intermediate training activities, with the final intent that they culminate in professional certifications. The impressive uptick in successful certification exam outcomes following the concordant introduction of new materials, strategies, and analyses suggest that responsive support of PLCs can have intrinsic positive effects, fostering collaboration among participants hailing from different schools, districts, and disciplines. These results also indicate that responsive and supportive program strategies that evolve in tandem with PLCs can elicit quantifiable results, while observably expanding and extending the usefulness of program-sponsored trainings and materials. In planning for and implementing future programs with similar overall strategies for facilitating professional development, anticipating and encouraging PLCs for the benefit of the overall program is a path of action that is well supported by the present, as well as existing, literature. However, it is important to note that the MTA outcomes and strategies described here must be interpreted with the perspective that some of the MTA PLCs’ strengths and appeal may be rooted in its naturalistic development and programmatic responsive thereto. Therefore, a highly structured and deliberate approach to fostering the PLCs in similar or other contexts may not elicit the same results in terms of participation or impact. Further research should seek to explicate the most effective ways of responding to and nurturing naturally developing PLCs, and whether there are any advantages or particular strategies to creating conditions in which such PLCs occur. Pursuing these avenues of inquiry could open new pathways to effectively incorporating PLCs into educator professional development.
References
World Class Excellence for Teacher Leadership: The New Hybrid Approach

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“The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires.”
William Arthur Wood (1921-1994)

The United States public education system, as it exists today, lacks relevance to the needs of industry in the 21st century. Hence today's high school, vocational and secondary school graduates enter the global workforce inadequately prepared for the global job marketplace. Given the dynamics of global competition, the need for highly skilled U.S. graduates is becoming more pressing. Developing countries, such as China, India, and Korea, have learned how to produce highly educated workers who offer 21st century skills at lower wages. Those workers, who are now available to global employers via the Internet, compete directly with the U.S. workforce. As the New Commission on the Skills of the American Workforce pointed out, why would global employers pay U.S. workers more than twice as much for the same skills?

This paper provides a framework to integrate “real world” relevance into the classroom for the purpose of preparing U.S. graduates with the skills needed to be competitive in a global workforce. Research has already concluded that America’s current education system is a failure. Alan M. Blankstein, in his book, Failure is Not an Option, substantiates this claim. Numerous business and government organizations have warned the United States’ competitive edge in the global economy is eroding. These reports, along with a series of bills introduced in Congress, call for an extensive effort to reform K-12 education in science, technology, engineering, mathematics (STEM), in order to cultivate the next generation of skilled American scientists, engineers, technicians, and science and mathematics educators (BHEF 2007: Business Roundtable 2005: Nas2007).

Recent PISA student performance data conclusively demonstrates inadequate skill preparation for a competitive global market in math and science. In a recent comparison of academic performance in 57 countries, the top-performing countries were: Finland, Hong Kong, Canada, Taiwan, Estonia, Japan and Korea. How did the U.S. do? Students in the United States performed near the middle of the pack. On average, 16 other industrialized countries scored above the United States in science, and 23 scored above us in math.

The report, 21st Century Skills, Education & Competitiveness, states that, “the United States, in order to be globally competitive, attract industries and create jobs, requires a ‘fresh approach to education’ that recognizes the importance 21st century skills play in the workplace.” Over 75% of executives believe that critical thinking skills will be more important to their organizations in the next three to five years (AMA
CEOs surveyed by the American Management Association indicated that 81% considered innovation the single most important factor to ensure the future success of their business (U.S. Council on Competitiveness).

Neuman, Coultrier and Scurry, in *The Future of Higher Education, Rhetoric and the Risks of the Market*, provides more evidence that issues concerning unprepared students in high school are exacerbated in higher education. They also point out that business leaders are critical, not only about the skills and knowledge of graduates, but also how colleges and universities operate.

Among manufacturers, 88 percent cite a lack of “basic employability skills” and report difficulties in finding qualified candidates. 60 percent say they typically reject half or more applicants as unqualified (National Association of Manufacturers, Center for Workforce Success and Grant Thornton, 1998; National Association of Manufacturers, Andersen, and Center for Workforce Success, 2001). Employers see this as a serious concern because, in the current global marketplace, the only advantage the United States has is in supply of knowledge workers. They see this advantage threatened by a working-skills gap. The skills gap is one area where there is a difference with college/university faculty and business leaders. Whereas faculty are generally pleased with the quality of graduates, only 46 percent of business leaders think graduates know what they need to know (Immerwahr, 1999).

In addition to the United States’ low rankings in international comparative studies of achievement, rapid advances in technology are resulting in the automation of low skill jobs and jobs that involve routine work. Many well-paying middle class jobs fall in this latter category and are becoming increasingly vulnerable. With this in mind, how can the United States ensure that its workers continue to command high wages and maintain their standard of living? We can do so by meeting two criteria: 1) We must match the best academic performance in the world, and 2) we must produce the most creative and innovative workers.

Business and industry have identified the skills required for a competitive 21st century workforce, and these skills are beyond today’s core academics. For the individual, these skills include: (1) works alone or in a small group, (2) confronts and resolves problems, (3) reflects upon issues, (4) makes judgments on next steps, and (5) shows commitment to a job.

While academic leaders have often assumed that business leaders will argue for vocational skills, research indicates otherwise. A number of reports from business organizations complained about communication skills (oral and written), interpersonal skills, reading comprehension, math and science literacy, and scientific inquiry. (U.S. Department of Labor 1999; Mullen, 1997; Oblinger and Verville, 1980). The Business-Higher Education Forum has called for cross-functional skills, including leadership, teamwork, problem solving, analytical thinking, global consciousness, reading and writing (Business-Higher education Forum, 2001). Another study found graduates are seen as lacking creative and practical intelligence (Oblinger and Verville, 1998).

**The New Hybrid Approach**

In order to avoid compromising our youth's future, a major paradigm shift from the delivery model of facts and information to a hybrid model that includes meaningful learning acquired through relevant experience is necessary.

A primary objective of the New Hybrid Approach is to produce great teachers that inculcate real world relevance in their curriculum. Ideally, this requires teachers with a blend of industry and educational experience in their chosen fields. Current methods based initiatives include STEM Education (Science, Technology, Engineering and Mathematics). STEM Academies and Charter Schools are structured to increase student performance by retraining teachers. The authors contend that a paradigm shift must occur to transform our current public education system from a loosely connected, unstructured autonomous role to one closely connected in partnership with industry.

Innovation Advancing Education (IAE) is a consulting group that developed data-driven programs designed to motivate student achievement and teacher leadership. IAE’s New Hybrid Approach infuses real world relevance into curriculum by training students and teachers in the 4 Cs from Partnership for 21st Century Skills™. The 4 Cs consist of Communication, Critical Thinking, Collaboration and Creativity.
Enduring educational reform requires courageous leadership and strategic action to avoid compromising our youth's future. The current paradigm of American public education, in the mass production efficiency script, is no longer recognized as successful. A major paradigm shift in the direction of education is needed, away from a delivery model of facts and information to a meaningful learning model acquired through guided experience. The predominant model of thinking over last hundred years has been mechanistically focused, but today our public education system must integrate industry’s knowledge and expertise and create new methods to develop students.

The “New Hybrid Approach” described in this paper provides cross pollination of theory and practicum, lateral thinking and a hidden curriculum. The term “hybrid” has been used in the past to describe a methodology that combines effective classroom teaching and online delivery. The “hidden curriculum” is the hybrid classroom teacher. Too many educators employ cookbook approaches to education, and opportunities to improvise and invent industry-relevant learning situations are minimized. The teacher who tends to operate in a pedantic, pedagogical manner, inhibits opportunities for creativity.

In 1916 John Dewey wrote, “Education through occupations…combines within itself more of the factors conducive to learning than any other method.” Throughout the twentieth century, national commissions on vocational education repeatedly urged stronger connections to the academic curriculum (Grubb, 1955). The insight of integrating academic and vocational/technical education is self evident, but incorporating it into the daily business of teaching and learning in our nation’s schools has proven extraordinarily difficult. The issue is implementing a system that permits teachers to gain industrial experience relative to their instructional directives. With the New Hybrid Approach the educator utilizes integrated cooperative efforts between education and industry.

A model that illustrates how the New Hybrid Approach can improve the relevance of education to industry is shown in Figures 1 and 2. Three circles represent the spheres of influence of industry, primary/secondary education and higher education. The spheres exist in a state of equilibrium due to each institution exerting conflict on one another. While information flows between them, there is little if any joint action.*

Essential to the success of the “New Hybrid Approach” is a triad consisting of Education, Industry and Government. Strong coupling as shareholders can result in world class educational institutions, teachers, and students. Innovation and entrepreneurialism is foundational, nurtured and championed in the “New Hybrid Approach”.

The “Hybrid Teacher” concept is the “hidden curriculum” in our model, and it requires teachers to work in situ on a periodic basis during their career. We propose developing the “hidden curriculum” through a nationally supported program providing educators with work in their areas of expertise in business or industry. To provide rigor and relevance this national program, it should be directly linked to educator certification.

Implementation of the “New Hybrid Approach” provides “speed to market”, championing world class excellence and teaching leadership. “Speed to market” signifies the pace that integrated, co-created instruction brings students by merging theory, practice and training. Implied is the benefit for teachers and industry experts. Each gains better understanding of the complexities and challenges of educating students, as well as having direct input for the benefit of all. The “New Hybrid Approach” model creates and builds upon awareness, trust, and involvement in creating world class excellence for teacher leadership. For example, science instruction about human anatomy is made relevant utilizing a medical expert, researcher or technician providing insights on how the knowledge is to be applied.

The “Hybrid Teacher” blends industry and education experience. This is a seamless relation between secondary and or college skill development and relevance to industrial concerns. He/she inspires and challenges students to achieve excellence in their fields, and as a facilitator, provides access to information rather than being the source of information. Using the 4 Cs: Communication, Critical Thinking, Collaboration and Creativity, the “Hybrid Teacher” introduces a foundation to solve problems.

Finally, the “New Hybrid Approach” utilizes data-driven methodologies to demonstrate program results, such as administrator and teacher effectiveness which directly influence student comprehension.
Creative Force Triptych Pilot Program: A Collaboration of Minds from Multiple Disciplines

Innovation Advancing Education is conducting a pilot program to test the New Hybrid Approach. The program consists of a hybrid teacher presenting the 4 Cs to a group of students at Tyler Junior College while the students are engaged in a real-world project under the guidance of a professional in their field of study.

We are testing two hypotheses. Hypothesis 1: Applying the 4 Cs to a project can lead to innovation. Hypothesis 2: The hybrid teacher, with the assistance of professionals in a field of study and in conjunction with a real-world project, provides an environment for learning excellence.

The program will collect data from participating students at various points throughout the real-world project using online surveys. The surveys will cover comprehension and utilization of the 4 Cs and how the participating students perceive their learning process as they accomplish the real-world project. In addition, the real-world project outcomes will be evaluated by a group that includes educators and professionals.

Bibliography
The authors note that some joint activities do exist among industry and educational institutions, to wit: Co-op programs, “factory trained”, summer internships, research grants and advisory councils. While these are beneficial, they do not satisfy the need for educational policy that provides synergetic relationships between these entities.
A is for Alcatraz: A Prison with a Playground

Patricia M. Kirtley
Independent Scholar

Introduction
A craggy, twelve-acre, rock formation juts from the water of San Francisco Bay. For years, books, films, and news articles popularized it as an isle of infamy. The introduction to Peter Novick’s book, That Noble Dream: The 'Objectivity Question' and the American Historical Profession (1988), discussed the difficulty of discovering the truth of history. He titled the introduction of the book: “Nailing Jelly to the Wall” (p. 1). This is an apt description for examining the many secrets of Alcatraz Island.

The history of this island is fragmented, elusive, and fascinating. The most unusual fact is that many families actually lived and worked there, and shared the craggy, isolated island with members of the military, prison employees, and notorious criminals.

Researching this rich, historical topic required sifting through a plethora of primary source material including memoirs, first-hand accounts, and interviews. This paper provides a missing piece of social and cultural history about the relatively safe and normal environment of children who lived on Alcatraz Island during the periods when it was a military fort and prison, America’s first maximum-security prison, and Native American occupied land.

Survey of the Literature
Research on the literature of Alcatraz Island as it relates to children produced a surprising number of primary and secondary sources, as well as fiction. For historians, primary sources record direct evidence on the lives of the seldom-mentioned residents of this renowned island. These personal perspectives are exceptional and subjective. Based on a youngster’s distinctive point of view, they are vibrant and amazingly detailed. They form the building blocks of history.

Primary sources - Memoirs of adults who grew up on the island include Jolene Babyak’s oral history, Eyewitness on Alcatraz (1988). She recounts her own experiences as a child and presents evidence to clear her father, Arthur M. Dollison, of any wrongdoing when he served as acting warden during the final ingenious escape on June 12, 1962.

Donald J. Hurley, who produced Alcatraz Island Memories (1989), was seven-years-old when he arrived and eighteen when he left the island to join the U.S. Coast Guard. His father served as a corrections officer on the island from 1942-1953. Hurley’s meticulously detailed book provides both the history and the flavor of what it was like to grow up on this infamous rocky outcrop.

Anna Thuman’s Alcatraz Schoolgirl (2011) recounts her arrival as a seven-year-old in 1934 and specific recollection of her experiences during her ten-year occupation. Her work is a collection of vignettes including a poignant memory of the day that her world changed, December 7, 1941.

Alcatraz Bride (2011) is Ann Burrows Eib’s light-hearted account of her short residency as a teenager on the infamous island. She admits she was not concerned about convicts. Her main interests were: “fashion, friends, and boys” (p.1) When she married less than two years after her arrival, newspapers all over the world featured articles, not only on her nuptials but also, stories about Ann, her new husband, the island, and other Alcatraz families.

Jim Albright was the last guard to leave Alcatraz Island on June 22, 1963. His book, Last Guard Out (2010) is an excellent narrative of his life as a corrections officer and a family man from 1959 until the closure of America’s first federal maximum-security penitentiary.

Secondary sources - The DVD, Children of Alcatraz (2003), directed by Scott Cornfield and Tom Castellano for The Center for Non-Profit Media, won the award for the Best Documentary of 2005 at the
Danville International Children’s Festival. This 55-minute film focuses on interviews with children and guards that lived on the island during the time it was a maximum-security prison. The film concentrates on the residents’ relative innocence of imminent danger and their freedom to explore and enjoy their surroundings.

After visiting the island with her sixth grade class, the author of historical children’s books, Claire Rudolf Murphy, wrote *Children of Alcatraz: Growing Up on the Rock* (2006). Her focus on the early residents of Alcatraz during the military presence is unparalleled. Extensive interviews of former residents inspired her to produce a comprehensive, clear, and simple text.

*We Hold the Rock* (1997), by Dr. Troy R. Johnson, professor emeritus of American Indian Studies at California State University, Long Beach, catalogs the Native American occupation of the island from 1969 to 1971. The National Park Service collected videotapes and interviews of the Native Americans involved in this important part of the history of Alcatraz and produced both this volume and a permanent multi-disciplinary exhibit currently displayed on the island.

Fiction - Several children’s books that use Alcatraz as their setting are worthy of note due to the integrity of the authors and their extensive research. *Someone is Hiding on Alcatraz Island* (1984), a middle grade novel, is set in the 1980’s. Eve Bunting, award-winning author of over 250 fiction and non-fiction books for children and young adults, capitalizes on the fascination of using the abandoned, and possibly haunted, prison site. Trapped in the cellblock, her fourteen-year old main character senses some of the desolation of his surroundings. “Too many men had lived here for too many years. The walls and the floor and the dank air had soaked up their despair and held it for all this time (p. 23).

Three other middle-grade novels, Newbery Award winning *Al Capone Does My Shirts* (2004), *Al Capone Shines My Shoes* (2009) and *Al Capone Does My Homework* (2013) by Gennifer Choldenko, use this unique setting as a metaphor to reflect the struggle of the characters. Choldenko’s main character, Moose Flanagan, describes his arrival on the island: “Today I moved to a twelve -acre rock covered with cement, topped with bird turd, and surrounded with water” (*Shirts*, p. 1). Choldenko lives in the Bay Area and worked as a docent at Alcatraz. She has attended the Alcatraz Alumni Reunion for the last fifteen years, gathering research and conducting interviews of former resident children, guards, and prisoners to add authenticity to her work.

**Early History 1850-1933**

In 1850, Congress declared California the 31st state. The island of Alcatraz became a military reservation as a protection for the port of San Francisco. After the completion of the lighthouse in 1854, the first children to reside on the island were the children and grandchildren of the lighthouse keeper. Murphy notes that the little ones often helped their grandfather prepare the lamp for illumination by filling it with two quarts of sperm whale oil (p. 11).

By 1859 ten to twenty children of military officers lived on the island. They played games, threw balls, and flew kites on the parade ground. As on every U.S. military post to this day, the children stopped their play both morning and evening and stood at attention to honor the raising and lowering of the American flag.

The military first housed federal convicts on the island as an unofficial prison in 1861. Many of these detainees, incarcerated for non-violent transgressions such as desertion or refusal to serve in the military, worked outside the confines of the prison walls. These “pass men” cooked, cleaned, cut hair, gardened and even babysat on occasion. One prisoner, named “Mason,” watched over three-year-old Kenneth Mickelwait everyday as the young child explored the island (p. 18).

In 1907, the construction of a new cell house commenced and Alcatraz became an official military prison: the U.S. Disciplinary Barracks, Pacific Branch. Sixteen-year-old Vivian Ashford arrived on Alcatraz in 1913 when her father transferred from another military facility. In 1920 Vivian married Army officer Lester Hadley in the lighthouse quarters. At her 100th birthday party Vivian recalled that her days on the island were the happiest days of her life (p. 12).

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a sighting of bears in the caves. Never at a loss for ideas, the girls found that the best way to win at Hide and Seek was to hide in the island morgue. Their playmates would ever find them there (p. 20).

The frigid water and uncertain tides of San Francisco Bay discouraged prisoners from attempting to escape. “Girl, 17, swims from Alcatraz”, an article in the San Francisco Chronicle (1933, p. 1) revealed that Anastasia Scott, the seventeen-year-old daughter of an Army officer stationed on the island, proved that the feat was possible. She became the first person to swim the mile and a half from Alcatraz to San Francisco. It took the competitive swimmer forty-three minutes to arrive at the Dolphin Swimming Club pier. She observed, “I had no difficulty at all, except some of the waves from the ferry boats were pretty big” (1933, p. 1).

Each May in the twenty-first century, the Alcatraz Challenge Swim begins at Alcatraz and includes a seven-mile run in Golden Gate Park. The annual March Alcatraz Triathlon of two thousand participants also begins with the mile and a half swim from the island, followed by an eighteen-mile bicycle ride and an eight-mile run in the Golden Gate Recreation Area.

Federal Prison Years 1934-1963

The military prison closed in 1934 but, within a month, the U.S. government designated Alcatraz as its first maximum-security prison. Fifty-three prisoners traveled by train from Atlanta to the California port of Tiburon. Heavy equipment loaded the train cars filled with prisoners onto a barge that soon landed at the Alcatraz dock. On that August day of 1934, the children of corrections officers peered down from their balconies on Building 64 and watched the arrival of the first federal prisoners, including the legendary Al Capone.

The infamous Capone, Alcatraz #85, worked in the laundry, the prison library, and, at one time even made shoes in the industries building near the cellhouse. One young resident remembered that Al Capone made and signed his name on the soles of her school shoes (Cornfield and Castellano). Most of the prisoners hated Capone. In 1934, James “Tex” Lucas, Alcatraz #224, viciously attacked Capone with a pair of scissors in the shower room. Ten-year-old Roy Chandler met Al Capone in the prison clinic when Roy’s guard father took him for an asthma shot. The boy said “Shivers ran down his spine when Capone shook his hand” (Murphy, 2006, p. 26).

Soon other notorious criminals followed “Scarface”, including George “Machine Gun” Kelly, Robert “The Birdman of Alcatraz” Stroud, Floyd Hamilton (the driver for Bonnie and Clyde) and the last surviving son of the Ma Barker gang “Doc” Barker who died in an escape attempt in 1939.

Residential Life - During the federal prison era, approximately sixty families of guards and prison administrators lived on the island including seventy to one hundred children. The families lived a quarter of a mile below the cell house. Residences included a converted Army barracks - Building 64; Buildings A, B, and C; a duplex; and four small cottages. Because hazardous automobile traffic and the threat of burglary were non-existent, the parents felt safer on the island than they did living in San Francisco (Babyak, 1988, p. 4). Residents never locked their doors. Parents’ greatest worry was the children’s fascination with exploring the dangerous cliffs on the island.

The former military parade ground became a baseball field, football field, skating rink, and tennis court. The officer’s club in the small recreation hall had a snack bar, two-lane bowling alley, two pool tables, and a ping-pong table. Phone service was extremely limited with only one or two telephones available for the entire population to share. Phone privacy was not an option. Children living on the island went trick-or-treating at each others homes on Halloween and, at Christmas, sang carols outside the cell block before stopping at the warden’s house for cookies and hot chocolate. Don Hurley (1989) remembered that all of the children would shout out “Merry Christmas” toward the windows of the cell house and within seconds would receive a similar wish in response. “The same event would happen every year, and each year I thought that our happiest night must be one of their saddest” (p. 72).

Babyak stated, “The danger was there. It just wasn’t obvious” (p. 20). She thought that inconvenience was a bigger problem. All new arrivals moved into apartments in the three-story, ugly, filthy, rat and cockroach-infested Building 64 that formerly housed the military. A generator provided direct current electricity that required a converter in order to use any small appliances. In some cases this meant that the washer, dryer, toaster, coffee pot, and waffle iron might all be in the bathroom.
Much to the children’s chagrin, regulations did not allow residents to have dogs or cats on the island. The only dogs allowed on the island belonged to Warden Swope, who had an Irish setter named “Pat”, and the Chief Medical Officer, who kept a black Scotty dog. When Prison Bureau officials came to inspect the island, Warden Swope sent his dog to the mainland to hide him until the inspectors departed (p. 32).

**Recreation** - Occasionally, children got bored and explored restricted areas. Mike Pitzer and a friend climbed down to the beach on the strictly forbidden Golden Gate side of the island. When the boys spotted the guard tower directly overhead they rushed back home. The warden reprimanded them in his office, and informed the boys that the veteran tower guard recognized them and did not open fire. A younger guard might have assumed them to be escaped convicts since children were never present in that area (p. 63).

Youngsters could not play in building hallways, on the dock, beyond the fence, near the prison, or in the water. Some of the children dared to tightrope walk on the balcony railings of Building 64. The drop on one side was two feet but on the other side it was two stories. Guard Jim Albright (2010) recalled that an inmate who worked in the officer’s mess told him, “Your boy crawled on that railing. You better watch him. He could get hurt” (p.189).

Many of the children enjoyed fishing daily. The prison authorities required no license and imposed no limits. Several times each year a sardine run would circle the island and lure huge sea bass to the adjacent water. Children, wives and off-duty guards would rush to the rocks with fishing gear. The children were in charge of baiting the hooks with shrimp. Adults hauled in the large fish and placed the catch in water-filled tubs. Even though the anglers rejected anything under twenty pounds, there was enough to feed every family on the island and the entire population of the cellhouse (Thuman, 2011 p. 58).

**School** – Since there were no schools on the island, children took a twelve-minute boat ride across the bay to attend classes. When the boat whistle blew at 7:10 a.m., children flew out of their apartments, across the parade ground, down the stairway of Building 64, along the balcony, and down the last concrete steps to the dock just in time for the boarding whistle. At 4:00 p.m. the children returned on the prison launch.

Parents of very young students arranged transportation with a San Francisco cab driver to transport their little ones from the pier to school and back each day. The driver kept track of the school schedule. When the prison boat was late, he took the children on “adventures” to watch the Golden Gate Bridge construction, watch passengers board the cruise ships, or visit Playland at the beach. “Round the World Charlie” also led them in rousing choruses of song (p. 16).

The prison launch could carry ninety passengers and made seven to eleven trips to the mainland each day. If the residents missed the last boat, they had to stay overnight in San Francisco. Joyce Ritz, who lived with her parents on the island from 1934–1951, remembered that teenage girls on the island would tell San Francisco boys, who turned out to be dull dates, that the last boat left at 9:30 p.m. Good dates could linger until the last actual departure at midnight (Cornfield and Castellano, 2003).

Former guard, Jim Albright (2010) recalled that when the seas were extremely rough, the warden called the mainland schools and declared a school holiday for the Alcatraz children. One time the trip back to the island took one and a half hours due to an intense fog. When the boat approached the nearly invisible island, the families ran down to bang on pots and pans to indicate their shoreline location to the pilot. The boat circled the island three times before finding the docking area (p. 194).

School classmates on the mainland were curious about life on “The Rock.” The island children often used their situation as a status symbol, making up their own fictional tales about dungeons where prisoners barely survived on bread and water.

**Interaction** - The children had strict rules about staying away from the prisoners, especially the few inmates who worked about the island on garbage duty, clean up, or garden maintenance. However, the prisoners had little to distract them and discovered intimate details about most of the families. One told Joyce Rose’s guard father about her boyfriends after overhearing her discussing the boys with her girlfriends. Another inmate surprised young Don Martin, Jr. by wishing him a happy birthday and pushed
a flower through the fence as a present. If a child tossed a candy bar to a prisoner, he might get a used prison baseball thrown back. Those baseballs were a valuable commodity when bragging in mainland schoolyards (Murphy, 2006, p. 33).

Don Hurley (1989) recalled meeting one prisoner who tended the flower gardens near the warden’s home. On weekends, the inmate picked flowers, put them in cans of water, and brought them down to the security gate near the little playground. The supervising guard let the children take the bouquets home to their mothers. During this weekly exchange Hurley eventually learned that the prisoner was guilty of murder and had spent most of his life in prison (p. 87).

Billy Hart got his first baseball glove from a prisoner. Billy decided to thank him by purchasing gumballs from the machine outside the canteen in Building 64 and tossing them over the fence to the prisoner. Unfortunately the prisoners used homemade slingshots to shoot the gumballs at the officers in the guard towers (p. 35).

Nine-year-old Bill Dolby, who arrived on Alcatraz in 1944, said that the older more experienced children on the island introduced new youngsters to the dock inmates. “There was one they called ‘Mickey Mouse,’ one ‘Popeye,’ and there was a ‘Donald Duck’ too,” He also said “We’d talk to ‘em. Yell at ‘em” (qtd. by Babyak, 1988 p. 16). Often the youngsters wanted to get the inmates to “defuzz” the outside of a tennis ball in the shop so that the boys could use it to play handball.

Incredulity - Most of the children admit one common problem with residing on the island: people would not believe that they actually lived on Alcatraz. Joyce Ritz remembered a police officer, who pulled her over while she was driving in San Francisco. He accused her of using a falsified California Drivers License because there wasn’t anyone living on Alcatraz who was going to have a license to drive (Cornfield and Castellano, 2005)

During wartime in 1941, the military placed anti-aircraft guns on the roof of the cellblock and Building 64. The lighthouse was dark and residents blacked out residences. Young island resident, Herb Faulk, rushed to enlist in the Army. At his first muster, when his drill sergeant asked for his name and hometown, he replied “Faulk, Herbert I., Alcatraz Island, sir!” A loud “Don’t get smart with me, soldier!” preceded the new soldier’s detailed explanation and longer KP duty (Cornfield and Castellano, 2005).

The strict prison system maintained a veil of secrecy regarding Alcatraz, though rare news stories fascinated the public. In 1954, the editors of Collier’s magazine gained clearance for photographer William Woodfield (1954) and Ted Strauss, the chief of Collier’s West Coast office, to visit the island. When they returned to the mainland on the prison boat, they realized that the prison security restrictions stifled any possibility of a useful article. As Strauss disembarked he was surprised to find “about thirty children lined up on the mainland pier. They were carrying lunch kits and books” (p. 8).

Woodfield petitioned the Bureau of Prisons to produce a feature, *Children on Alcatraz*, which appeared in the August 6, 1954 issue. The article included the first candid photographs of island children ordering drinks at the recreation area soda fountain, doing homework on their way to school on the island boat, running across the former military parade ground in the shadow of the prison, and peering through the fence into the area where their fathers worked as prison guards.

The accompanying text by Gitta Parker (1954) described an incident when a toddler asked her mother why the inmates loading laundry needed to be guarded so closely when the children could run freely. The child’s mother quipped, “the bad men didn’t eat their vegetables” (p. 20). The three-year-old quickly walked over to one of the working inmates and asked, “Aren’t you sorry you didn’t eat your carrots?” (p. 20).

Chuck Stucker, who lived on the island from 1940-1943 and 1948-1953, said people never believed that he grew up on the famous island. The Bureau of Prisons strictly controlled information, which left the public with only a Hollywood version of life on Alcatraz. Unfortunately, the movies about the island ignored the resident families and children. Stucker said that was definitely one reason people did not believe the children lived there, “We were never portrayed in the movies” (Cornfield and Castellano 2005).
Anna Thuman (2011) recalled, “Even though the world was in the throes of a horrible depression, we had a warm and comfortable place to live, plenty to eat, good friends to play with, and so we children were completely oblivious to the negative aspects outside our protected world” (p. 12).

Danger - Despite these idyllic comments, the specter of danger remained. George Steere, who was twelve-years-old when he first heard the escape alarm said, “You know what kind of characters you had up there, but when that old sir-een takes off, you didn’t know what was going on” (Babyak 1988, p. 69). The children knew that they had to race home or to the closest residence and lock the doors. They worried about their unarmed fathers who mingled daily with the prisoners.

At times escape attempts left family members marooned in San Francisco since the transfer boat did not function. When the siren sounded at night, most of the children recall their mothers quietly telling them to go back to sleep. Yet the escape alarm immediately reminded every resident of the deadly peril lurking above them behind the prison gates. One tragic escape attempt was undoubtedly the most memorable.

Joyce Ritz said that she and her dad heard an unusual noise while they ate lunch together on May 2, 1946. Her corrections officer father headed down to check with the Dock Tower guard who controlled the key to the prison launch. Joyce could see her dad trying to avoid rifle fire from the cellhouse. She watched him duck bullets until he managed to grab the key that the tower guard lowered to him. Her father detached the boat lines and moved the launch away from the dock to prevent its use as a means of escape.

The breakout continued for the next forty hours and the shooting continued. Ritz thought the tracer bullets were very pretty in the night sky, “like fireworks going off in the middle of nowhere” (Cornfield and Castellano 2005). She said she was not afraid, perhaps because she was older (in her twenties at the time). She also knew that she was a very good swimmer and there were Coast Guard and San Francisco City Police boats circling the island, as well as her father on the launch. She was sure she could make it swimming from the rocks on the island out to one of the boats.

Six-year-old Chuck Stucker was in school in San Francisco during the escape attempt and remembers rushing down to the pier near Fort Mason with his mother. A frightened crowd of Alcatraz residents, who could not return to the island, milled about seeking information. When the first prison boat finally arrived and unloaded several injured officers, Chuck hurried to ask one of the guards about his father. The guard reassured him that his dad was “fine, just fine.” Years later, the guard fully admitted that he was glad his assessment was correct because he had absolutely no idea that Stucker’s unarmed father spent the entire three days and two nights locked in a basement shower room with eighteen inmates. The guard said that he told all of the panicky family members that the officers in the cellhouse were all right (Cornfield and Castellano 2005).

When the unsuccessful escape attempt ended, three prisoners and two guards, William Miller and Harold Stites, were dead. Fifteen-year-old Bob Stites and his brother, ten-year-old Herbert, did not know that their father had perished until the second day of the gun battle. During the Friday afternoon rosary at St. Brigid’s Church in San Francisco, thirteen-year-old Joan Marie Miller and her brother, Billy, learned that their father had died after being beaten and shot by convicts (Murphy 2006 p. 39-40).

Between 1936 and 1962, thirty-six prisoners were involved in fourteen escape attempts. Of those thirty-six men, seven were shot and killed, one drowned in the bay, twenty-three were recaptured and five were unaccounted for.

By March of 1963, the crumbling island prison was too expensive to repair or maintain. The last inmates transferred to other federal penitentiaries. Guard Jim Albright (2010), his wife, Cathy, and his two-year-old son, Kenny moved to the island in November of 1959. Their daughter, Vicki, was born during Jim’s assignment as a corrections officer (p. 194). In the course of evacuating the final prisoners, the Albrights welcomed their third child, Donna. On June 22, 1963, as Jim Albright locked the historic Alcatraz Federal Prison gate for the last time and dropped the key in this pocket, he realized that, though both of his children had birth certificates stating the Island as their place of birth, Donna was the last child born as a resident of Alcatraz Island (p. 196).
In November of 1963 the lighthouse keeper’s family left when an automated system assumed the duties of the human keeper. A former guard, Jack Hart, remained on the island with his family as a caretaker. In 1966, his youngest child, Barbara, chose to be married on the island that was the only home she had ever known. The well-worn playground was empty of children after 100 years of noisy activity.

While San Francisco debated possible uses for the island including a UN Peace Memorial, a bird sanctuary, a gambling casino, a space travel theme park, a wax museum and the site for a second Statue of Liberty, political unrest determined that the island of Alcatraz would have children in residence once again.

Native American Occupation

Indian Termination was the policy of the U.S. government from the 1940s to the 1960s. This policy refused to recognize Native Americans’ tribal heritage and reservation rights. In November of 1969, sixty-eight unarmed Native American adults and children occupied Alcatraz Island to protest broken treaties, neglect, and mistreatment by the U.S. government. Mohawk leader, Richard Oakes read a proclamation to the press claiming Alcatraz Island by right of discovery. “Alcatraz was the true catalyst for the new Indian activism as it became more organized and more ‘pan-Indian’” (Johnson, 1997, p. 1). Individual tribes from every part of America joined together for the first time with a common goal.

Supporters donated food and money. The week following the occupation, local San Francisco restaurant owners provided an un-Thanksgiving feast for over four hundred people on the island. Many tribes came to honor the celebration including Blackfoot, Cherokee, Choctaw, Creek, Shoshone-Bannock, Sioux, Nez Perce, Pomo, and Paiute. To this day indigenous tribes hold a Sunrise Ceremony on the island every year on the Thanksgiving Day holiday. Native Americans from all tribes welcome the public to honor their heritage and join in the festivities.

All island residents cooperated in forming a cohesive functioning community. Teenagers used the guard towers to watch for Coast Guard boats circling the island. The occupiers feared that the government might try to remove them by force. Dagmar Thorpe, granddaughter of Olympian Jim Thorpe set up a nursery for the very small children (Johnson, 1997, p. 28). Young mother Eldie Bratt, a Quechua Aymara La Banda native from Peru cared for the young children on the island as well as her own four youngsters. Present day actor Benjamin Bratt and filmmaker Peter Bratt credit this experience with their mother as the foundation of their political and social consciences.

Over 16,000 Native Americans visited the island during the eighteen-month occupation. Most stayed only a short time; others stayed for months. The native occupiers lived in the cell house and other buildings on the island. Shoshone-Bannock LaNada Boyer, the Berkeley student who was one of the first to occupy the island, moved into the warden’s house because her two-year-old son was afraid to stay in the cell house (Murphy, 2006, p. 49). The press dubbed her son, Deynon Means, the Alcatraz Kid. Older native children, who had attended government boarding schools, knew little of their own culture. During the occupation, these children studied reading, writing, health, social sciences and math in addition to beadwork, woodcarving, sculpture and costume decoration. Evenings around the fire, children practiced their heritage of dancing, drumming, and storytelling.

On January 3, 1970, the thirteen-year-old daughter of occupation leader Richard Oakes fell while playing in a building stairwell and died. The Oakes family left the island immediately and did not return. In May of 1970, fires broke out and damaged several of the main buildings on the island, which depleted housing options. The cause of the fires remains unknown. In order to discourage the occupants, the government removed the water barge that provided fresh water for the native inhabitants. Since there was no source of water on the island, the protestors had to rely on friends to covertly ferry jugs of water to them by boat. Many inhabitants left the island, including a few of the original protestors. Some returned to jobs. Others, who were university students, went back to school. Lanada Boyer and her son remained during the entire occupation.

The protest ended on June 11, 1971, when heavily armed federal marshals, FBI agents and GSA security, backed up by three Coast Guard vessels, removed the remaining fifteen occupiers including six men, four women, and five children. The playground was silent once again.
Immediately after the end of the occupation in 1971, the General Services Administration razed the entire residential complex on the parade ground in order to prevent any other group from inhabiting the island. Fearing further destruction of a historical landmark, residents of the Bay Area requested that the island be included as part of an urban park plan. On October 12, 1972, Alcatraz officially became part of the Golden Gate National Recreation Area and in 1973, the island opened once again as a national park. Partially due to the attention gained by the occupation, in 1975 the U.S. federal government passed the Indian Self Determination and Education Assistance Act that reversed the termination policy of the 1940s.

**Conclusion**

Once again the voices of children reverberate off the walls of Building 64 as they race up the steep incline and around the sharp curve toward the cell house at the top. The original playground equipment is gone now but children can still take advantage of the open spaces to run and play tag. Once a year, in August, the children who lived on Alcatraz reunite on the island with former guards and prisoners to share accounts with each other and the public.

Professor Peter Stearns (1998) of George Mason University pioneered the study of history that examines the everyday experiences of people in the past. He suggests that such a study “involves a sense of beauty and excitement, and ultimately another perspective on life and society” (p.1). It is important to be inclusive and objective. Telling these hidden stories fleshes out history and makes it relevant to our lives.

Don Hurley, who arrived on the island in 1942 as a seven-year-old, spent eleven years growing up on Alcatraz. “All in all, the children on Alcatraz lived a fairly normal life,” Hurley states (p. 84). He remembers that both the actual place they lived and governmental restrictions affected their activities. “Then there was the overriding fact that we were just kids” (p. 84).

Alcatraz. Some called it hell, haunted, a nightmare, eerie, cruel, a last resort or, simply, The Rock. Yet, for over a hundred years, children from newborns to young adults called it home. Their contrasting stories of difficulty and simplicity, of isolation and comradeship, of apprehension and confidence unite them and strengthen their resolve to impart the hidden history of a small island to this generation of children and all generations to come.

**References**


Girl, 17, swims from Alcatraz. (1933, October 16, p. 1). *The San Francisco Chronicle*.


Appendix A
A is for Alcatraz Timeline

1854  Lighthouse completed. First children live on island.
1859  Fort Alcatraz military post. Children of military officers arrive.
1861  Post becomes military prison. Families of military prison guards present.
1934  June, all military leave. Alcatraz becomes maximum security prison.
       Families of prison guards quartered on island.
1969  November 20, Group of 90 Native Americans, including children, occupy island.
1971  June 11, heavily armed GSA personnel, FBI agents, US marshals, three Coast Guard
       vessels and a helicopter remove the remaining fifteen Native Americans (6 men,
       4 women, and 5 children) from the island.
1972  October 12, Alcatraz becomes part of the Golden Gate National Recreation Area.
1973  Alcatraz Island is open to the public.
The Impact of the Great Recession on the Diversification Results of the United States Social Security Program

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Abstract
The OASI trust fund had been projected by the Office of the Chief Actuary of the United States to be exhausted by the year 2043; since the Great Recession, insolvency is expected by 2037. One alternative for salvaging the trust fund is to increase the investment return, and in so doing eliminate its deficit while improving the benefit/contribution ratio. This study reports the impact the recent recessionary period would have had on the performance of the OASI trust fund if the fund had been diversified in its investment options. This study finds that diversification would have had a major impact on the performance of the OASI during the period of the Great Recession.

INTRODUCTION
Safeguarding the Old-Age and Survivors Insurance (OASI) program, i.e. Social Security, from exhaustion has been an on-going discussion for many years, often side-tracked during national elections. Manley et. al. (2005) discussed in the Journal of Financial Service Professionals one of three suggested major adjustments to the OASI program to achieve sustainability; this adjustment is diversification into a broad range of securities with a reserve equal to 150% of each year’s required benefit remaining in U.S. Treasury securities. Their reported findings demonstrate that only a prolonged significant depression may result in an outcome similar to the projected depletion of the OASI trust fund if no action were taken. In 2002, the year for which the data are referenced in the article, the Office of the Chief Actuary of the United States Social Security Administration projected depletion of the Trust Fund by 2043. As of 2010, and little changed from the 2009 report, the Chief Actuary is reporting an expected depletion as of 2037. This loss of six years till exhaustion of the OASI trust fund is no doubt due to our current economic experiences of the 2007-2009 recession, which is being termed the Great Recession. The Great Recession may be said to be the cause for the decline in OASI viability based upon the observation that, in comparison to the year 2037 from the 2010 Report, the 2008 Summary Report of the Social Security and Medicare Boards of Trustees reported 2042 as the year for the exhaustion of the OASI trust fund.

Using the actual market performance during this period to estimate the resulting performance of a diversified Trust Fund will provide insight into the major criticism of the diversification approach, which concerns the actual performance of the trust fund if there is a serious correction (short term) or significant decline (long term) to the economy. Therefore the impact on the performance of the trust fund due to the security markets into which the trust fund would have been placed becomes an important element in the argument concerning how best to resolve the current expected bankruptcy of the OASI trust fund.

Given the current dual projection of surpluses for several years and subsequent collapse of the social security system by 2037, the social debate swirls around if, and then when and how, to take action using the current surpluses to salvage the system. In 1982, the OASI trust fund balance was $20 billion; in 2002, it was $1,072 billion; and by 2007, it was $1,844 billion. This represents a 22% compounded growth over the first 20-year period, an 11.5% growth during the recent 5-year period, and a 20% growth during the full 25-year period. This indication of continued slowing in the growth of the surplus within the fund argues for action to be taken sooner rather than later to secure the future of the OASI trust fund. This decline is most likely very much associated with the impact of the Great Recession. When the Social
Security law was passed in 1935, the law required that surpluses be invested only in government securities; the current debate concerning diversification is whether to change the law to allow for investment in other than U.S. Treasury securities.\footnote{5}

To determine if the expected collapse of the system as forecasted may be prevented, Manley et. al. concentrated on the issue of diversification, not privatization or increasing funding.\footnote{6} The purpose of this study is to gauge the impact on the current position of the OASI if initial funds from the pre-Great Recession period had been invested in the suggested diversified portfolio (150% TFR in US Treasuries, plus the remainder split evenly between large cap common stock and investment grade Corporate Bonds) earning the returns that had actually occurred over the period from 2002 till 2011.\footnote{7}

The findings indicate that the OASI and its surpluses would have been significantly impacted if funds were diversified into securities in addition to Treasuries; and that there is a significant difference between the adjusted forecasted trust fund performance\footnote{8} and the actual performance reflecting the current impact of the great recession, resulting in a difference of $1.2 trillion additional Surplus that would now be able to be invested into future growth to sustain the Program.

I. DIVERSIFICATION OF THE OASI

Diversification is the means by which the trust fund may take advantage of the \textit{Equity Premium}, the historical advantage enjoyed by equity returns over other asset returns. Bodie, Kane and Marcus (2009) report, using data from Datastream, the \textit{Center for Research in Security Prices} and \textit{Lehman Brothers Long Term Treasury Index}, that the U.S. large company geometric stock return for 1926 to 2005 is 10.17\% and for long-term U.S. Treasury bonds is 5.38\%, providing a 4.79\% equity premium. As such, the extra income of roughly 5\% on invested funds provided to the OASI trust fund if partially invested in equities may very well be enough to enable the Social Security system to remain solvent and avoid increases in payroll taxes and/or decreases in retirement benefits, while maintaining the public and social benefit nature of the Trust Fund.\footnote{9} The results herein indicate that security diversification of the Trust Fund will more than likely aid to ensure its viability.

CURRENT COMPARISON

The 2002 long-range projection of the OASI program using the intermediate assumptions by the Office of the Chief Actuary of the Social Security Administration is displayed in Table 1. The trust fund ratio (TFR) is an insightful measure to assess the immediate viability of the fund’s assets; it is the ratio of the assets at the beginning of the year to the estimated expenditures for the year, times 100. For example, the TFR would be 200 if the beginning-of-year assets are $200 and expenditures for the year are $100. According to the projection in 2002, the Office of the Chief Actuary expected that the Trust Fund would grow from $1,072 billion in 2002 to a high of $7,141 billion in 2028, and decline thereafter till exhausted in 2043. Such forecasts assume that there are no changes in tax rates, benefits or other factors during the period forecasted. Numbers in the annual report are discussed in the Summary report of the next year. Within the 2008 Annual Report, the Office of the Chief Actuary projects that the 2008 beginning assets of the Trust Fund of $2,023.6 billion will continue to expand till 2014, at which time the expected expenditures will begin to grow faster than the expected income (see Table 2). Although the gross asset value increases to $4,116 billion by 2017 and the dollar amount earned still exceeds expenditures, the TFR indicates a decline after 2014. These observations/predictions are not significantly different than those of 2002. Although recognizing that the OASI annual costs increased during 2008 while income increased very little, the 2008 projection does not predict key dates that are significantly different than those predicted in 2002. The 2002 (2008) predictions are displayed in Panel A (Panel B) of Exhibit 1.

The predictions from both Panels are very similar, including only a one-year difference predicted as the year for the exhaustion of the fund (2042 in the 2008 Projection as opposed to 2043 in the 2002 Report). As seen in Exhibit 1, there is little or no difference in the forecasted significant dates between the Chief Actuary’s Summary Report from 2002 and the Summary Report for 2008. But the three-year Great Recession has had an impact on the forecasted performance of the trust fund. According to the 2010 annual report provided in June 2010, the following are now the significant dates, and these indicate a decline in the funds and a sooner-rather-than-longer anticipated exhaustion of the OASI trust fund:

- 2012 (not 2014/15) would be the year in which TFR hits a maximum.
• 2018 would be the first year that benefits paid exceed income from taxes.
• 2026 (not 2028) would be the first year that benefits paid exceed income from taxes and interest earnings, requiring use of a portion of the Beginning of Year (BOY) trust funds.
• 2040 (not 2043) would be the first year that benefits paid exceed income from taxes, interest earnings, and BOY trust funds; thus exhausting the trust fund.

In addition, as reported in the New York Times in October of 2010, the update to the June Summary Actuary’s report providing revised numbers for 2009 indicates further deterioration in the forecast for the trust funds with 2037 as the year for exhaustion of the OASI trust fund.

The impact of the Great Recession is seen clearly on the undiversified performance of the Trust. Given the most recent projections, a comparison of the forecasted Trust Fund performance is provided in Table 3. As indicated, the TFR is lower for all years, and the trust fund reaches only $3,472 billion by 2017 versus an earlier expected $4,085 billion. This is a decrease of half-a-trillion dollars. The expected decline in the dollar value of the Beginning of Year assets (BOYA) of the OASI Trust fund, the earlier-than-expected reversal in the direction of the TFR, and the expectation that outlays will soon outpace inflow (interest earnings plus tax receipts/contributions) should raise red flags concerning the near-term danger the social security program faces.

As explained within each Trustees Report, three forecasts are provided; but within this research, we refer only to the Intermediate forecast. “As described in the Overview section of this report, these estimates depend upon a broad set of demographic, economic, and programmatic factors. The estimates presented in this section are prepared under three sets of assumptions to show a wide range of possible outcomes, because assumptions related to these factors are subject to uncertainty. The intermediate set of assumptions, designated as alternative II reflects the Trustees’ best estimate of future experience; the low-cost alternative I is significantly more optimistic and the high-cost alternative III is significantly more pessimistic for the trust funds’ future financial outlook.” (Trustees Report: http://www.ssa.gov/oact/tr/2011/IV_A_SRest.html)

Throughout the three-year Great Recession period, several issues may have had a significant impact on the performance of the OAS funds. The OASDI payroll tax collected each year from employers is currently 6.2% of total payroll with another 6.2% of payroll received from employees. The collection of the employee portion has been suspended for qualified employees from February 3, 2010, to December 31, 2010. But the personal income portion for social security, referred to as a tax holiday program, has also been financed with replacement funds from the federal government general revenue account using funds authorized through the stimulus package. Thus, the tax holiday program did not have itself an adverse effect on the level of funds contributed to the OASI. Instead, since the Great Recession would imply a reduction in earnings, then the 12.4% of qualified national income received may well be expected to be less than otherwise forecasted. Yet, during the 2005 to 2010 period as seen in Table 4, the net contributions, which were below expected receipts for the earlier three years (2005, 2006, 2007), were greater than expected during 2008, 2009, and 2010. Since the greater than forecasted receipts in 2008 and 2009 offset nearly completely the reductions in the earlier three years, the increase in 2010 over the 2002 net contributions forecast led the actual net contributions to be $86.3 billion greater than the forecasted six-year cumulative amount. The net interest earned followed the same pattern. It was suspected that the investment in US Treasuries during this period of historically low short-term interest rates may have led to less than expected net interest earned. Rather, the net interest earned reported in Table 4 is $21.7 billion greater than the forecasted six-year cumulative amount. And in total, the Actual EOY Amount performs similarly, being less than estimated in 2005 to 2008, but greater than expected in 2009 & 2010; yet the net EOY amount is $37.6 billion less than the forecasted six-year cumulative EOY amount. Whereas there was a net negative impact on the forecasted EOY amounts from the Great Recession period, the differential represents only 1.4% of the total EOY amount. As such, the Great Recession has had a minimal impact on the overall performance of the OAS fund.
FORECASTED RESULTS WITH DIVERSIFICATION

Henry Aaron and Robert Reischauer (1998) in their book *Countdown to Reform: The Great Social Security Debate* propose that Social Security be invested gradually and monitored carefully in a broad mix of corporate securities. The authors recommend that a contingency reserve fund (Reserve) should be held in U.S. treasury securities. The annual Reserve should be equal to one and one-half (150%) of that year’s benefits to be paid to recipients; the remaining amount, the Surplus, should be diversified into other investment choices. In addition, all members of the 1994–1996 Advisory Council on Social Security recommended the investment of the trust fund Surplus in equities.

However, there were serious philosophical differences on how to invest the funds among the members of the Council. Six members of the thirteen-person council supported a proposal called the Maintain Benefits (MB) plan that recommends the investment of forty percent of the trust funds in equities with the government managing the funds. Two members proposed a plan to establish Individual Accounts (IA), which would increase the employee’s social security tax by 1.6 percent to be placed into individual accounts that are held by the government as defined contribution individual accounts. Five members supported a plan referred to as the Personal Savings Account (PSA) that would eventually privatize OASI. The PSA plan would provide different benefits for workers under age 25 (in 1998) who would work their full careers under the plan than benefits for workers aged 25 to 54 (in 1998) who would receive their accrued benefits under the current system plus a prorated share of the flat benefit. Aaron and Reischauer suggest that half of the Surplus should be invested gradually in a mix of equities that reflect a broad index of domestic stocks. The balance of the Surplus should be invested in an index of corporate bonds. They argue that the Reserve of 150 percent of a year’s benefits provides a suitable hedge against times when the stock market is performing poorly. As Table 1 indicates, the Trust Fund Ratio (TFR) was projected to exceed 150 percent from 2002 to 2035, therefore providing a Surplus to be invested in securities other than Treasuries; and the TFR still remains well above 150 under current projections for a significant period of time (see Table 3).

Alternatively, Hammond and Warshawsky (1997) suggest the equity investment be in a broadly indexed fund to mirror the makeup of the U.S. equity market in order to minimize political problems that might arise from agencies of the federal government investing in corporate securities. Their recommended investment plan is modeled on the operation of the retirement plans for the Board of Governors of the Federal Reserve System and the Federal Retirement Thrift Investment Board, which are both managed by expert investment boards. They suggest that the Social Security Reserve Board (SSRB) be created with members appointed by the President with the advice and consent of the Senate. To prevent the SSRB or its fund managers from exercising undue influence in corporate governance, Congress should insist on either of two precautions. First, eliminate voting rights on shares held by the SSRB, and/or second, employ a number of fund managers such that total shares voted by a manager are less than a target proportion of the outstanding stock of a company. Furthermore, fund managers would be required by law to vote shares solely in the economic interest of future beneficiaries. Assuming these safeguards are sufficient, the funds may be invested in other securities in addition to Treasuries. The next section evaluates the benefits derived from the diversification achieved by investing the Surplus in corporate securities.

**Gains from Diversification: the past with diversification using actual yields**

This paper investigates the past (2002 to 2010) to compare the actual performance of the OASI Trust Fund to the performance of the Fund if it had been diversified during the Great Recession. These results are reported in Table 6. The time period herein reported begins with 2002 so as to compare both the expected results reported earlier and the actual performance (reported in Panel A of Table 5) with the forecasted results with diversification (reported in Panel B of Table 5). It is assumed that the investment in the diversified portion, the Surplus, would have earned the yields for each year as reported by Federal Reserve in its Statistical Release for U.S. AAA Corporate Bonds and the DJIA Yield for Equity. These reported rates of return for bonds are positive but declining from 2002 to 2010; and the yields reported for the DJIA are negative in 2002, 2003, and 2009, very small for 2005 and 2008, but positive for the other years. The most positive Equity yield of 32.19% (2003) is more than offset by the most negative of
yearly yields, -40.1% (2008); but there is a 9.7% average return over the nine year period 2002 to 2010. The investment in government securities, the Reserve, is assumed to earn the same rate of return of 5.5 percent as reported by the Office of the Chief Actuary. As such, the Annual Interest Earned as reported by the Office of the Chief Actuary is adjusted to reflect only 150% of the available funds earning the U.S. Treasury yield during the period, with the Surplus assumed to be invested 50/50 in the U.S. AAA Bond Market and a diverse selection of U.S. Common Stock. The relevant reported yields for bonds are provided from the Federal Reserve Statistical Report and given in Exhibit 2. The annual yield for Equity is calculated from the level of the Dow Jones Industrial Average as of January 1st of each year. Using the assumptions described above and provided in Exhibit 2, Table 5 displays both the actual performance of the Trust Fund (Panel A) and our results (Panel B) using a Reserve of 150 percent while investing the Surplus in quality corporate securities with 50% in Corporate Bonds and 50% in Corporate Stocks.

As Panel A of Table 5 indicates, the OASI trust fund increased from $1.071 trillion in 2002 (with a TFR of 272) to a level of $2.337 trillion in 2010 (with a TFR of 400). Panel A also indicates that the TFR continued to rise throughout the period except for a one year decline from 2008 to 2009, most likely due to the combined influence of the three years of the Great Recession. Assuming the Surplus during these years had been diversified as described earlier, there would have been an impact over the 2002-2010 period, as indicated in Panel B of Table 6. The resulting forecasted 2010 BOYA would have been $3.013 trillion with a TFR of 513, as opposed to the Actuary’s reported BOYA of $2.337 trillion with a TFR of 400. This is a difference of $676 billion that would otherwise have been earned and available for additional investment. Although the earnings on the Surplus invested in the stock portion varies greatly over the years, there is a stream of positive earnings with two years of negative earnings during the Great Recession. Such a differential should be strongly supported by additional positive investment earnings during the growth period to follow a full recovery in the investment and productive environment of the USA. Thus, diversification would have provided no immediate threat to the health and certainly a significant benefit for the survival of the OASI trust fund.

**Conclusion**

Robert Ball (1995) argues that almost all public and private pension plans invest in stocks and bonds, and social security beneficiaries should share the same advantage as other plan participants. He states: Improving investment return for Social Security would not only help eliminate its projected deficit but would also improve the benefit/contribution ratio for younger workers and future generations. If the problem presented for solution is not solely the elimination of the long-range deficit but also the improvement in the Social Security rate of return for young workers, there is an additional important reason for interest in direct equity investment.

This study provides evidence that the gains from diversifying some portion of the OASI funds into a portfolio of stocks and bonds persists regardless of the impact of the recent Great Recession. The benefits of diversification may improve the overall performance of the trust fund so as to provide assurance of future benefits for recipients and/or could eliminate the current anticipated Deficit, or at least postpone the exhaustion of funds even under the most unfavorable conditions. Furthermore, the findings of this paper demonstrate that the diversification of the OASI trust funds by investing in stocks and corporate bonds may be able to guarantee its financial integrity well into the future whether one uses relatively low market returns as currently reflected due to the Great Recession or if we are able to return to historically higher average performances than some in the field may now expect.

Social Security is an essential part of American society and is the main source of retirement income for most elderly Americans. As Robert Ball states in favor of the public format rather than a system of individual accounts:

We need the basic security that social security uniquely supplies regardless of downsizing, mergers, bankruptcies, the volatility of the job market and the uncertainty of individual investments. Social Security as presently constituted clearly meets the test of what Lincoln described as the legitimate objective of government: to do for a community
of people whatever they need to have done but cannot do so well for themselves in their separate and individual capacities.\textsuperscript{17}

Social Security is the most effective government program in preventing poverty among senior citizens. In 1999, nine percent (9\%) of Social Security beneficiaries were poor. If there were no Social Security, the poverty rate would have been 48 percent as reported in the Annual Statistical Supplement of 1999. This paper argues that there must be serious consideration of diversification to restore the financial integrity of the OASI program, while preserving the Social Security program and its goals of providing economic security and independence for workers and their families.

References


Office of the Chief Actuary, Social Security Administration, June 2002.


TABLE 1
Long Range OASI Projections
Office of the Chief Actuary, Social Security Administration, 2002

<table>
<thead>
<tr>
<th>Year</th>
<th>Beginning-of-Year Assets</th>
<th>TFR</th>
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</thead>
<tbody>
<tr>
<td>2002</td>
<td>$ 1,072 billion</td>
<td>272</td>
</tr>
<tr>
<td>2005</td>
<td>$ 1,568 billion</td>
<td>354</td>
</tr>
<tr>
<td>2010</td>
<td>$ 2,785 billion</td>
<td>475</td>
</tr>
<tr>
<td>2015</td>
<td>$ 4,345 billion</td>
<td>522</td>
</tr>
<tr>
<td>2020</td>
<td>$ 5,885 billion</td>
<td>486</td>
</tr>
<tr>
<td>2025</td>
<td>$ 6,928 billion</td>
<td>407</td>
</tr>
<tr>
<td>2028</td>
<td>$ 7,141 billion</td>
<td>349</td>
</tr>
<tr>
<td>2030</td>
<td>$ 7,040 billion</td>
<td>306</td>
</tr>
<tr>
<td>2035</td>
<td>$ 5,751 billion</td>
<td>193</td>
</tr>
<tr>
<td>2040</td>
<td>$ 2,783 billion</td>
<td>75</td>
</tr>
<tr>
<td>2043</td>
<td>$ 45 billion</td>
<td>1</td>
</tr>
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</table>

TABLE 2
Estimated Operations of the OASI Trust Fund
2008 Summary Report of the Chief Actuary

<table>
<thead>
<tr>
<th>YEAR</th>
<th>INCOME</th>
<th>EXPENDITURE</th>
<th>CHANGE</th>
<th>BOYA</th>
<th>TFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>$ 708</td>
<td>$ 516</td>
<td>$ 192</td>
<td>$ 2,023</td>
<td>392</td>
</tr>
<tr>
<td>2009</td>
<td>$ 755</td>
<td>$ 545</td>
<td>$ 210</td>
<td>$ 2,233</td>
<td>410</td>
</tr>
<tr>
<td>2010</td>
<td>$ 801</td>
<td>$ 578</td>
<td>$ 223</td>
<td>$ 2,456</td>
<td>425</td>
</tr>
<tr>
<td>2011</td>
<td>$ 848</td>
<td>$ 615</td>
<td>$ 233</td>
<td>$ 2,689</td>
<td>437</td>
</tr>
<tr>
<td>2012</td>
<td>$ 897</td>
<td>$ 657</td>
<td>$ 240</td>
<td>$ 2,929</td>
<td>446</td>
</tr>
<tr>
<td>2013</td>
<td>$ 947</td>
<td>$ 704</td>
<td>$ 243</td>
<td>$ 3,172</td>
<td>451</td>
</tr>
<tr>
<td>2014</td>
<td>$ 998</td>
<td>$ 755</td>
<td>$ 242</td>
<td>$ 3,414</td>
<td>452</td>
</tr>
<tr>
<td>2015</td>
<td>$ 1,050</td>
<td>$ 810</td>
<td>$ 239</td>
<td>$ 3,653</td>
<td>451</td>
</tr>
<tr>
<td>2016</td>
<td>$ 1,103</td>
<td>$ 869</td>
<td>$ 235</td>
<td>$ 3,888</td>
<td>447</td>
</tr>
<tr>
<td>2017</td>
<td>$1,159</td>
<td>$ 931</td>
<td>$ 228</td>
<td>$ 4,116</td>
<td>442</td>
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</tbody>
</table>

EXHIBIT 1
Critical Dates Projected by the Office of the Chief Actuary

PANEL A
As of June 5, 2002, the Office of the Chief Actuary, Social Security Administration, provided the following critical dates for the OASI program from the 2001 Report:

- 2015 would be the year in which TFR hits a maximum.
- 2018 would be the first year that benefits paid exceed income from taxes.
- 2028 would be the first year that benefits paid exceed income from taxes and interest earnings, requiring use of a portion of the Beginning of Year (BOY) trust funds.
- 2043 would be the first year that benefits paid exceed income from taxes, interest earnings, and BOY trust funds; thus exhausting the trust fund.

PANEL B
As of April 4, 2009, the Office of the Chief Actuary provided the following critical dates for the OASI program from the 2008 Report:

- 2014 would be the year in which TFR hits a maximum.
- 2018 would be the first year that benefits paid exceed income from taxes.
- 2028 would be the first year that benefits paid exceed income from taxes and interest earnings, requiring use of a portion of the Beginning of Year (BOY) trust funds.
- 2042 would be the first year that benefits paid exceed income from taxes, interest earnings, and BOY trust funds; thus exhausting the trust fund.
TABLE 3
Comparison of Estimated Operations of the OASI Trust Fund Separated by the Great Recession

<table>
<thead>
<tr>
<th>Year</th>
<th>Income</th>
<th>Expenses</th>
<th>BOYA</th>
<th>TFR</th>
<th>Income</th>
<th>Expenses</th>
<th>BOYA</th>
<th>TFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>$ 755</td>
<td>$ 545</td>
<td>$2,215</td>
<td>406</td>
<td>698</td>
<td>564</td>
<td>2,203</td>
<td>391</td>
</tr>
<tr>
<td>2010</td>
<td>$ 801</td>
<td>$ 578</td>
<td>$2,425</td>
<td>420</td>
<td>686</td>
<td>586</td>
<td>2,337</td>
<td>399</td>
</tr>
<tr>
<td>2011</td>
<td>$ 848</td>
<td>$ 615</td>
<td>$2,658</td>
<td>432</td>
<td>742</td>
<td>608</td>
<td>2,437</td>
<td>401</td>
</tr>
<tr>
<td>2012</td>
<td>$ 897</td>
<td>$ 657</td>
<td>$2,898</td>
<td>441</td>
<td>790</td>
<td>638</td>
<td>2,588</td>
<td>406</td>
</tr>
<tr>
<td>2013</td>
<td>$ 947</td>
<td>$ 704</td>
<td>$3,141</td>
<td>446</td>
<td>845</td>
<td>680</td>
<td>2,753</td>
<td>405</td>
</tr>
<tr>
<td>2014</td>
<td>$ 998</td>
<td>$ 755</td>
<td>$3,383</td>
<td>448</td>
<td>902</td>
<td>728</td>
<td>2,927</td>
<td>402</td>
</tr>
<tr>
<td>2015</td>
<td>$ 1,050</td>
<td>$ 810</td>
<td>$3,622</td>
<td>447</td>
<td>959</td>
<td>780</td>
<td>3,106</td>
<td>398</td>
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<tr>
<td>2016</td>
<td>$ 1,103</td>
<td>$ 869</td>
<td>$3,857</td>
<td>444</td>
<td>1,019</td>
<td>835</td>
<td>3,289</td>
<td>394</td>
</tr>
<tr>
<td>2017</td>
<td>$1,159</td>
<td>$ 931</td>
<td>$4,085</td>
<td>439</td>
<td>1,078</td>
<td>897</td>
<td>3,472</td>
<td>387</td>
</tr>
</tbody>
</table>

*Actual numbers italicized*

TABLE 4
Actual Performance during the Great Recession compared to the 2002 estimate

<table>
<thead>
<tr>
<th>Year</th>
<th>Net contributions</th>
<th>Net interest</th>
<th>Amount EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>actual</td>
<td>estimate</td>
<td>diff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actual</td>
<td>estimate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actual</td>
<td>estimate</td>
</tr>
<tr>
<td>2005</td>
<td>506.9</td>
<td>493.4</td>
<td>-13.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>84</td>
<td>81.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,663.00</td>
<td>1,607.30</td>
</tr>
<tr>
<td>2006</td>
<td>534.8</td>
<td>522.8</td>
<td>-12</td>
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<tr>
<td></td>
<td></td>
<td>91.8</td>
<td>86.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,844.30</td>
<td>1,779.00</td>
</tr>
<tr>
<td>2007</td>
<td>560.9</td>
<td>548.9</td>
<td>-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>97</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,023.60</td>
<td>1,967.80</td>
</tr>
<tr>
<td>2008</td>
<td>574.6</td>
<td>575.5</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>105.3</td>
<td>105.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,202.90</td>
<td>2,172.70</td>
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<tr>
<td>2009</td>
<td>570.4</td>
<td>602.8</td>
<td>32.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>107.9</td>
<td>117.5</td>
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<tr>
<td></td>
<td></td>
<td>2,336.80</td>
<td>2,389.70</td>
</tr>
<tr>
<td>2010</td>
<td>544.8</td>
<td>635.3</td>
<td>90.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>108.2</td>
<td>129.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,249.00</td>
<td>2,620.70</td>
</tr>
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EXHIBIT 2
Annual Yields for a portfolio of AAA U.S. Corporate Bonds and a diverse portfolio of U.S. Corporate Common Stock

<table>
<thead>
<tr>
<th>Year</th>
<th>Bond Rate</th>
<th>Equity Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>0.0649</td>
<td>0.24288</td>
</tr>
<tr>
<td>2003</td>
<td>0.0566</td>
<td>0.32188</td>
</tr>
<tr>
<td>2004</td>
<td>0.0563</td>
<td>0.04433</td>
</tr>
<tr>
<td>2005</td>
<td>0.0523</td>
<td>0.08365</td>
</tr>
<tr>
<td>2006</td>
<td>0.0559</td>
<td>0.12356</td>
</tr>
<tr>
<td>2007</td>
<td>0.0556</td>
<td>-0.0415</td>
</tr>
<tr>
<td>2008</td>
<td>0.0563</td>
<td>-0.4009</td>
</tr>
<tr>
<td>2009</td>
<td>0.0531</td>
<td>0.30027</td>
</tr>
<tr>
<td>2010</td>
<td>0.0494</td>
<td>0.19765</td>
</tr>
</tbody>
</table>

Source: The Bond and Equity Rates (yields) are as reported by the Federal Reserve Statistical Release for AAA Bond Annual Yields and DJIA Yields reported at http://www.federalreserve.gov/releases/h15/data.htm; accessed 13 April 2011.
### TABLE 5
Comparison of Actual OASI Performance with a What If Estimate of OASI Performance

Estimates assume a Reserve invested in US Treasuries and the Surplus invested 50% in AAA U.S. Corporate bonds and 50% in a diverse portfolio of U.S. Common Stock

(All dollar amounts in millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Panel A: Actual Performance</th>
<th>Panel B: Predicted Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BOYA $</td>
<td>TFR $</td>
</tr>
<tr>
<td>2002</td>
<td>1,071,540</td>
<td>272</td>
</tr>
<tr>
<td>2003</td>
<td>1,217,497</td>
<td>327</td>
</tr>
<tr>
<td>2004</td>
<td>1,355,330</td>
<td>340</td>
</tr>
<tr>
<td>2005</td>
<td>1,500,622</td>
<td>361</td>
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<td>2006</td>
<td>1,663,037</td>
<td>372</td>
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<tr>
<td>2007</td>
<td>1,844,304</td>
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</tr>
<tr>
<td>2008</td>
<td>2,023,616</td>
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<tr>
<td>2009</td>
<td>2,336,800</td>
<td>402</td>
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<td>2010</td>
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<tr>
<td>2011</td>
<td>2,302,886</td>
<td>407</td>
</tr>
</tbody>
</table>

*IEI is the total net tax contributions and revenue from taxing social security benefits and U.S. Treasury payments to the OASI trust fund in the given year. This does not vary between the Actual Performance and the Predicted Performance, so the column is provided in Panel A only.

**TOF is the Total Outflow for the given year, comprised of total benefit payments, administrative costs and OASI Railroad Pension Payment liabilities. These amounts do not vary between the Actual Performance and the Predicted Performance, so the column is provided in Panel A only.

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1 The Report of the Panel on Privatization of Social Security (1997) of the National Academy of Social Insurance grouped the suggestions for changes to the OASI trust fund program into three concepts: Increased advance funding (increase contributions, lengthen retirement ages), Portfolio diversification (invest beyond US Treasuries), and Individual accounts (defined-contribution system of individual private accounts).


In addition, the discussion will need to determine both the means by which and the supervision of investment in corporate (and perhaps municipal) bonds and stock (including Preferred).

One main criticism of investing OASI trust funds in private security markets is that the government would become a major investor, have too much influence on market values, and be too involved in corporate governance. In addition, there is a philosophical debate as to whether the government or the individual should manage the investment.

Alan Greenspan and former President Clinton support using the OASI surplus to shore up the Social Security reserves. Mr. Greenspan does not believe it is politically feasible to insulate these funds from government direction fearful that these assets would be used in a way that would create a lower rate of return for social security recipients. Greenspan argues that political pressures could lead to inefficient investments not allocating capital to its most productive use. Greenspan, Alan, “Statement before the Committee on the Budget, US Senate, January 28, 1999.” Federal Reserve Bulletin, March 1999: 190-1; Weinstein, Michael M. “Clinton’s plan for Social Security has its backers. But does America want to be a big shareholder?” The New York Times, January 21, 1999: A25; Clinton, William (Former President), “The Text of the President’s State of the Union Address to Congress,” The New York Times, January 22, 1999: A22-23.

The forecast is adjusted for the actual performance measures of the U.S. stock and bond markets during this eight year period of time which includes the recent great recession.

The 2002 Trustees Report assumes an average annual interest rate of 6.0 percent for intermediate government bonds with a 3.0 percent annual increase in the CPI, resulting in a real rate of return of 3.0 percent on government bonds.

“Medicare Stronger, Social Security Worse”, Robert Pear and Jackie Calmes.


At the beginning of 2043, the trust fund balance is projected to be $45 billion. Total income is expected to be $3,096 billion, whereas total expenditures are projected to be $4,203 billion (Office of the Chief Actuary, Social Security Administration, June 2002, pp. 5-6).
Two Separate Ways

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Today, American societies have the attention span of a news cycle, a few minutes or a few days. An ahistorical existential perspective permeates societal attitudes and perceptions. The immediate now is the total reality and the unreflective response indicates that the momentary experience always existed in time. The news media asks questions and creates discussion about the budget deficit in an existential vacuum. There is no substantial discussion of two wars and the financial cost. A ten year tax cut is reality. This attitudinal climate permeated David Gregory’s show on Sunday Feb. 20, 2013, Meet the Press.

The next day at an educational concert, an eighty year old lady clung to her cell phone like a self-absorbed nineteen year old university coed, while the concert pianist stood on stage ready to perform. This lady’s life predated television, yet the cell is the existential now that trumps the concert pianist.

The concentration on immediacy and a 24/7 mind-set are a recent phenomenon, however, Joseph Campbell (1990) described the transitions of society from church steepled towns to parliamentary cities with the final transformation to huge towering structures of economic power (Cousineau and Brown, 1990). These mythic themes run through the literature of society and reflect the changing landscape. Campbell’s literary insights provided a historical perspective for the cultural absorption with economics and the dominance of economic decisions.

During the past 15 years, Puthoff-Murray (2003 & 2010) and Murray (2003 & 2010) have examined the impact of economics on the United States. These investigations uncovered multiple variables that contributed to the present state of the economic divide. Puthoff-Murray (2003) showed the influences of race and prejudice on inequality. She also demonstrated that misperceptions and false attributions contributed to the state of inequality. She determined that this divide represented an 80/20 split with the top 20 percent receiving the economic benefits. These conclusions were supported by Johnson’s (2011) treatment of liberation theology and the global economy. Both researchers concluded that “the winner takes all” attitude contradicted the principles of social justice and the ideals of the Judeo-Christian message.

Murray (2003) explored the global economy and education. These variables added to the condition of inequality, because society had become a knowledge based society where information, data and money flowed freely and instantaneously. The findings also supported the data for an 80/20 divide that had devastating effects for Afro-Americans.

Building upon previous research, Puthoff-Murray (2010) showed that inequality had a spiral down result. She used the models of Maslow (1970) and Hansell (1990) to demonstrate the “Wal-martification” of the United States population. She elaborated by quoting Paul Krugman (2006). Krugman wrote, “that today upward mobility has had a mythic ring, and that the Gilded Age of 1920 and the period between 2001-2005 has shared the largest SES gap between the top ten percent and the bottom ninety percent.”

Complementing previous investigations, Murray (2010) focused on global inequality and found that education and Fuller’s (1981) concept of the “know how” society disproportionally and exponentially contributed to inequality. The 90/10 economic divide applied not only to the United States but also to China, India, Russia, and Taiwan. This research discussed the over-class elite and the freedoms for this group because of education, wealth and contacts. The environment produced for the individual a position of STAR POWER – “Winner take all.” This article introduced the need for social justice and concluded
that greed, inequality opportunity and unregulated capitalism were unacceptable and had the potential for societal self-destruction. More research indicated comprehensive portrait of the inequalities.

Freeland (2012) examined the effects of multiple variables. Post-secondary education had significantly increased from 1973 to 2005 and these experiences intensified dramatically the economic differences. Seventy percent of the new super-elite, who are highly educated, have accumulated their wealth in the past 10 years and these superstars represented a new group called the “working rich.”

Freeland (2012) in describing Plutocrats pointed out that global inequalities were not a function of only western civilizations but included the BRIC countries of Brazil, Russia, India and China. This transformation was identified by a 99 percent to 1 percent economic inequality. When her work summarized average family incomes for the United States population, the top 0.01 percent made $23,846,950 and those in the top 0.1 percent to 0.01 percent average dropped to $2,802,020, while those in the top 1 percent made an average of $1,019,089. The top 10 percent on average made $246,934 with 90 percent of families generating an average of $29,840. These data reflected 2010 findings. These data are reported in Table I.

Freeland (2012) continued a description of global wealth as defined by Credit Suisse in 2011. High net worth families had an investable income of between $1 million and $50 million, while ultrahigh net worth had investable income above $50 million.

In The Christian Science Monitor Weekly, Cook (2013) reported an analysis of millionaires by Graeme Wood of the National Review. He classified three types of millionaires. The first group possessed assets of a million dollars in homes, savings and pensions. This category contained 5.26 million households. The second group annually made a million dollars and included fewer than half million households. The final group of millionaires had 200,000 households and accumulated $20 million or more in assets. These classifications made a slight modification on Freeland’s (2012) identification of income and wealth.

The Freeland (2012) findings both modified and updated the research of Puthoff-Murray (2003 & 2010) and Murray (2003 & 2010). Freeland (2012) supported the previous research concerning the importance of education, globalization and information technology. Her data expanded the meaning of income and the definition of wealth, while she showed that the economic divide was a 99 to 1 split.

The final reflections concerning the Plutocrats raised two interesting questions. Will the present day Plutocrats become similar to the city state of Venice and isolate to the point of self-destruction? The second question introduces the philosophy of Marx. Will the capitalists so isolate wealth and create such inequality that growth is cut off and the system is unsustainable (Freeland, 2012).

Based upon previous explorations of social justice, Puthoff-Murray (2003 & 2010) and Murray (2003 & 2010) would prefer that the questions examine the potential for change with a guidepost reflecting a moral compass. Is it not unjust and immoral to have these economic discrepancies? The people, who help problem solve, and the people, who help produce, do they have the right to share in the rewards? In 2006 at the Peking restaurant in Beijing, China, leaders made a statement to a Kent State University delegation: “The China you will see is not the whole of China.” This statement was followed by the question, “how do we raise up the people making a dollar a day?”

This state of inequality has resulted from multiple variables. However, one hypothesis suggested that this problem was created or at least exacerbated by personality traits which permeate the United States. Goleman (1997), reviewed the literature pertaining to Emotional Intelligence. The key aspects were interpersonal intelligence and intrapersonal intelligence. These qualities demanded an ability to understand, appreciate and communicate effectively with other people and generate a climate of positive regard. In addition, it was expected that the individual knew one’s self and how the person’s behaviors impacted other people. Underlining these intelligences was the developmental experience of a growing sense of empathy for others. Through an increase in empathy, the individual became more effective in examining one’s personal identity and this process contributed to positive interactions with others.

Beyond these intelligences, Goleman (2006), expanded into the area of Social Intelligence. He discussed the pervasive influences of unhealthy narcissists, Machiavellian types and psychopaths. Unhealthy narcissism permeated a society like the United States that placed an emphasis on unrealistic
self-inflation and exaggerated individual success and rewards. The sense of community was lost. The Machs, as Goleman (2006) calls them, possessed no empathy and painted the world with a brush devoid of emotions but strongly colored with rational and probabilistic concepts. The final triadic influence, the psychopath, had no conscience development and displayed a lack of fear combined with a total disregard for others. These themes were also explored by Murray (2000), when he examined schizoid narcissistic behaviors and their detrimental impact on identity and community.

These patterns were reflected by the economist, Charles Wheelan (2010), when he reduced economic inequality down to a single variable, human capital. He identified the composite as: intelligence, charisma, creativity, work experience and entrepreneurial vigor. When Wheelan (2010) portrayed life experiences and outcomes as a result purely of self-achievement and accomplishments, he presented an economic analysis that reflected Goleman’s (2006) psychological triad.

It certainly is possible to argue that applying Goleman’s work to the totality of society is a bit of a stretch. However, reflections on the 2008-2009 financial crisis and the exotic creations of derivatives and other three and four letter symbols, CDOs, CLOs ABCP, CPDOs and SIVs, produced a picture about groups of psychopathic, narcissistic, Machiavellian bankers and hedge fund managers (Phillips, 2009, Smith 2012 and Stiglitz, 2012).

In a simplified narrative, this researcher will attempt to accurately describe the transactions and interactions prior to the financial crisis. The banks and hedge funds sold paper but not individual loans, because they sliced and diced various loans to create these new securities. Some of the securities held totally good loans, others were mixed and some were disproportionally bad. By the way, it was impossible to determine what was good or bad. The banks, who paid the rating agencies, got AAA ratings on these creations. With the help of AIG, these securities were insured. However, AIG lacked the resources to cover all the insured securities. Is there anything to worry about in that these securities are secured with a triple A rating? The only person or organization, who had a risk, was the buyer but the buyer was shown documentation to support triple A ratings.

During this process, bankers, brokers and hedge fund managers received excessive profits, since the sole risk was taken by the buyers. With the success of these instruments, predatory lending took money from the poor and these loans were sliced and diced into new securities. Some hedge funds realized the folly of these exotic packages and bet against them. These fund managers received enormous pay offs. In the midst of this extended experiment, Goldman Sachs sold securities out the front door, while other Goldman analysts generated bids against these securities. The final brush on this picture came from bankers before a judge in a court of law, when they said, “why should investors trust us” (Phillips, 2009, Smith, 2012 and Stiglitz 2012). This brief synopsis truly supported Goleman’s (2006) depiction of the self-centered and egotistical United States society.

These patterns of unregulated swaps were graphically and visually displayed in Bloomberg Business Week of January 28 - February 3, 2013. This visual had four major hubs with over 70 satellites. The perimeter had shooting stars, however, the line arrows indicated that these stars partially came back to the four hubs or other smaller firmaments. The graphic had line sending data to smaller and larger entities and back again to other stars. When the procedure of slicing and dicing securities was entered into this formulation, the interconnected pathways became an impenetrable maze. This visual initially looked like fireworks but a closer analysis revealed a quagmire of unpredictable projectiles.

An important theoretical question remained unanswered: is there some type of public policy that creates or facilitates this economic divide? More specific aspects of the question asked, is this a de facto climate or a de jure environment? This involved question penetrated the core of public policy in that it demanded an analysis of converging variables and formal or informal government policy.

During the past 30 years, Phillips (1990, 1993, 2002 and 2009) tracked the economics of the United States and described a constantly growing inequality. He also compared this de facto climate with an earlier period from 1945 to 1978. All income groups increased their cash flow during the late 1940s 1950s, 1960s and 1970s. In contrast, the 1980’s, 1990s and into the 21 century saw a decreased or stagnant income for most quintiles. The significant exception was the top 20 percent with the top 1 percent receiving excessive incomes. These findings showed that the present de facto state of inequality
was not a permanent characteristic of the United States but a growing phenomenon over the last 30 years with an exponential impact in the last 10 years.

Phillips (1993, 2002 and 2009) presented evidence that Federal legislation had shifted the tax burden away from the wealthiest members of the United States and passed this responsibility on to lower wage earners. He documented that the bottom sixty percent had fewer after tax dollars than in 1977. This de jure government policy was identified by Stiglitz (2012) and he argued that this policy radically redistributed the wealth of the United States. Stiglitz (2012) traced this public policy back to the Reagan administration and showed that this philosophical vision for the United States was expanded by Bush II. With non-progressive tax laws, there is no mystery about the increased wealth of the one percent.

Further examinations performed by Stiglitz (2012) demonstrated that federal legislation was written to benefit significantly the 1 percent. An exploration of the capital gains tax showed that these assets were taxed at a lower level and provided important economic benefits to corporate executives, hedge fund managers and stock investors. These rewards came disproportionally to the very top end of the upper 10 percent. Reflect, who gets most of the stock options?

An investigation of bankruptcy laws added data to the argument about de jure Federal Policy. These laws were formulated to protect the lender. Therefore, the borrower was left with the burden and liability (Stiglitz, 2012 and Smith, 2012). These examples are the tip of the iceberg that reduced financial demands for the wealthy and transferred the responsibility to the middle class.

The final informal example of public policy influence was Alan Greenspan. He represented the real and concrete leadership of the free market society and his philosophy and actions personified this vision of economics (Greenspan, 2007). This perception of economics became gospel through frequent and prolonged dialogues with Ayn Rand through which Alan incorporated the values of reason, individualism and enlightened self-interest along with laissez-faire capitalism (Greenspan 2007). These values were implemented during the years 1967 to 2006. Alan advised the Nixon Campaign on economic directions became the Chairman of the President’s Council of Economic Advisors and finally Chairman of the Federal Reserve, (Greenspan 2007).

This paper examined how status, wealth and education contributed to various facets surrounding quality of life, opportunities, lack of choices and income inequality. This paper showed the role played by public policy and legislative decisions. The remainder of the paper explored the impact of the 99 percent to 1 percent divide. It also zeroed in on many issues encompassing environmental and socialization differences along with the positive and negative outcomes and consequences. These variables contributed to Occupy Wall Street cries of injustices, and economic inequalities which lead to unfairness, decline and poverty (Pizzigati, 2011). In the 21 century, what is the picture for most United States citizens?

The voices generated by Occupy Wall Street: “we are the 99 percent”, echoed by Bill Moyers, Alexander Cockburn, and Jeff Madrick, in the November 21, 2011 and April 9, 2012 issues of The Nation, plus the presidential candidate Mitt Romney’s video referencing the devalued bottom 47 percent of Americans and the mantra of do not raise taxes on the top affluent 10 percent has created an atmosphere for American’s remaining 99 percent of citizens’ that produced pain, frustration, resentment, unfairness, foul play and loss.

There were many similarities and differences between the 99 percent and the 1 percent. The top 0.01 percent super-rich elite, the 0.1 percent elite wealthy individuals and the wealthy 1 percent, all have wealth, higher educational levels and influential contacts (Freeland, 2012). The 99 percent had multiple layers. The 9 percent were wealthy and the next 10 percent had affluence. Florida (2012) commented that the initial major condition for a person’s successful life style was parental income and educational level. In other words, newborns need to choose the right parental units. The right families were those highly educated parental units, who had wealth within the top fifteen percent, or better yet in the 0.01 percent or 1 percent.

The bottom eighty percent included the shrinking middle class, the working poor and the situational and generational poverty; bottom 40 percent, who lived at poverty and extreme poverty levels and had the lowest educational levels (Freeland, 2012 and Poppick, 2011). Therefore, as the income disparity increased, the standard of living and purchasing power decreased.
The increasing economic disparity between the “privileged and disadvantaged, and the winners and losers,” left the 99 percent with stinging experiences of inequality, unfairness, injustice and poverty. Pulitzer Prize winner, Henrick Smith (2012) stated that “America is now the most unequal society among industrialized countries in the West.”

The concepts of equalities vs. inequalities and wealth and poverty require definitions. The American Heritage College dictionary, third edition, defines inequality “as being unequal, lacking equality as opportunity and social or economic disparity.” The American Heritage College dictionary third edition, 1993 defines poverty “as the state of being poor, lack of the basic material goods.”

Level one and two of Maslow’s Hierarchy of Needs (1970) corresponded with Johnson (2007) who described poverty as “the lack of food and drinkable water, the lack of housing, education, and health care, exploitative wages or lack of employment opportunities.”

According to the United States Census Bureau during 2011, 46.5 million or fifteen percent of U.S. adults and 16 million children fell into the poverty level in the United States. Stiglitz (2012) and Scherer (2011) indicated that “almost a quarter of all children live in poverty.” This was the biggest increase in poverty since 1969 (Moore 2012). One out of seven American citizens depended on the United States government safety net programs just to meet their basic needs and still more American adults and children experienced food insecurity and slept hungry at least once a month (Stiglitz 2012). The United States Governments’ Health and Human Service Guideline for 2012 highlighted wealth disparities, poverty and economic inequality. These data are reported in Table II.

Americans dependence upon government assistance today was mainly due to low-wages, unemployment, under-employment, increased medical cost, medical emergencies, health care insurance, the cost of higher education, the demand for new and technical skill levels, and the explosion of technology and globalization (Freeland, 2012).

The Federal Poverty Measures, listed in Table III, were created by the United States Department of Human Health and Services to determine eligibility for those low income citizens and families. These individuals and families qualified for government safety net programs like, HEAP -Home Energy Assistance Program, WIC - Woman, Children and Infants, National School Breakfast/Lunch Program, Early Start, Head Start, CHIP-Children’s Health Insurance Program, TANF--Temporary Aid for Needy Families and SNAP - the Food Stamp Program. Millions more of Americans depend upon other government and public assistance programs e.g., unemployment benefits, FEMA, student loans, prescription assistance, Medicare, Medicaid, homeless shelters, soup kitchens, food pantries, and other charities.

Barbara Ehrenreich (2012) emphasized that Ronald Reagan’s ‘culture of poverty’ described the poor as “undeserving,” living lazy dissolute lives, possessing bad attitudes, some of whom who were prone to addiction, crime and promiscuity. The Reagan era ideology denied that poverty was caused by low wages and/or the lack of jobs. Reagan’s propaganda insisted that the government was doing too much for the “poor and that poverty was hurting America (Walsh, 2012). It was during the Reagan era that the slow erosion began. Household savings dwindled, debt accumulated, deregulation prevailed and private sections and unions were squeezed out (Walsh 2012). The result was that the American home went from the sole breadwinner to a two income family. Therefore, the wives went to work (Walsh, 2012, Smith, 2012 and Stiglitz, 2012).

Since 1970, the United States corporations, financial sector and business community changed the rules of the game. Their greed, selfishness, narcissism and psychopathic behaviors have continued to shrink employees’ wages, cut or reduce employees’ benefits and pensions, fight unions, deregulate government, downsize and outsource much of the labor in order to increase profits for their corporations, companies, stockholders and executives. An examination of the economic and wage disparity, wealth gap, disclosed that the rich are getting richer and the poor are getting poorer and many of the middle class are sliding and spiraling down into the poverty level (Stiglitz 2012 and Smith 2012).

It was also important to note that since 1968 the federal minimum wage of $7.25 has decline in value. A look at State and local lower hourly wages and the ridiculous exorbitant salaries of the 1 percent painted a realistic picture of the economic landscape that has transpired in America. This exploration
showed where individuals and families fell with regard to categorizations of poverty, working poor, lower middle-class, upper middle-class, the 1 percent wealthy, the 0.1 percent super wealthy and the 0.01 percent superrich elite (Popick, 2011).

Data disclosed that the $7.25 minimum wage fell well below the HHS Poverty Guidelines for a single parent with one child, a family of three or a family of four. A person working full time, 40 hours a week, yielded a gross income of $290.00 weekly, $1,160.00 monthly and $15,080 per year. See Table IV for the Federal Minimum Wage breakdown. Many corporations, companies and businesses have stopped offering their employees a 40 hour work week. They hired “Perma-temps,” part timers or temporary workers and ‘lower tier’ workers in manufacturing, who receive lower wages without benefits (Uchitelle 2013).

President Obama’s 2013 State of the Union address recommended that the federal minimum wage be raised to $9.00 per hour, however, according to the Bureau of Labor Statistics, the typical retail salesperson earned an hourly wage of $11.00 or approximately $21,000 per year which falls below the HHS Poverty Guideline for a family of four. It was also shocking to learn that low wage employees from many U.S. corporations’ and companies’ qualified for government safety net programs (America, February 28, 2013).

The United States Census revealed that there are 46.2 million individuals or 15 percent of the United States population working at or below the federal minimum wage poverty level. The jobs included the chains, retail clerks, fast food workers, the dishwashers, customers assistance representatives, home health care aids, nannies, factory workers, farm laborers and nursery workers. The United States Census Bureau also reported that 80 percent of minimum-wage workers, are twenty years and older and that 60 percent of them are female. Note that women only made up 48 percent of America’s workforce. A disproportional amount of United States employees were forced to rely on federal safety-net programs, because they earn $23,050 or lower per year, which is the federal poverty line for a family of four (The Week, 2012 and America, February 28, 2013). These findings are reported in Table II.

Walmart, the largest private employer in the United States, employed 1.3 million associates and ranked number two on the Fortune 500 in terms of revenue and number 20 in profits. Walmart trail blazed for other profitable corporations in the United States, such as McDonalds, Pizza Hut, Target, Best Buy, Yum Brands and Home Depot, who hired their new employees at or near the state or federal minimum wage, while only offering a 32, 34 or 36 hour work week without health insurance or holiday, vacation or sick time which produced more profits for their CEO, executives and stock holders.

For example in 2011, Walmart’s net profit was $16 billion, most of the profit went to the Walton family, who holds 48 percent of the Walmart stock. Frank (2008) focused on the Walton family, heirs of Sam Walton, with a wealth factor somewhere around $90 billion. They occupied the upper most top of the polarization pinnacle. It was declared “this one family enjoys wealth equal to all of the assets of the entire bottom 40 percent of the U.S. population or 120 million people” (Smith 2012).

They are the richest family in America and Walmart policy is considered the trendsetter (Clarke, 2013), while many of Walmart’s and other chain’s lower wage employees qualified for government safety net programs. “The idea that we have a lot of people at the top who get more than they earn and a lot of people at the bottom who earn more than they get” a quote from Duncan Fexley in an December 26, 2011 issue of The Nation’s, article by Pizzigati.

This face of the working poor continued, while America’s CEOs and top executives were paid on average $9.4 million a year and their stockholders received approximately $175 billion in dividends since 2006 (The Week, 2013).

When calculating the buying power and survival mode generated by lower wages, Puthoff-Murray and Murray were able to grasp the effects and struggles endured by the working poor in America. It was not difficult to comprehend why many folks are working two or three jobs. For most of these families, the American Dream no longer existed. It was replaced by struggle and survival (Smith, 2012, Steglitz, 2012). Sawhill of the Brookings Institution stated that “the view that America is the land of opportunity doesn’t entirely square with the facts” (Smith 2012).

Stiglitz (2012) stated “the poor are becoming poorer and more numerous and the middle class is being hollowed out.” Belonging to the middle-class was for most Americans the essence of obtaining the
America Dream. The goals of possessing property, home ownership, residing in safe neighborhoods, sending children to better schools, better access to hospitals and health care providers, shopping malls and recreational opportunities created the rationale and incentives for the work ethic (Stiglitz, 2012 and Smith, 2012). Today,” the America Dream is but a myth”, wrote Stiglitz (2012), Survival is the goal!

Today, millions of middle class households and families have tumbled and slid downward because of the lack of opportunities, underemployment, unemployment, stagnant and declining wages, technology, globalization, educational cost and the lack of resources. The middle class standards of living have fallen sharply (Smith, 2012). The United States has suffered more inequality and less income mobility than practically every country in Europe, Canada, Australia and Brazil (Commonweal, 2012.)

There were many different views about the definition of America’s middle-class. However, the United States Census Bureau offered no formal definition. It reported changes in the income distribution and raised the questions concerning middle-class extinction. Reinhard (2012) also posted that there were no strict definitions of the term middle class. Many media sources have come up with their criteria about the middle class. Many have broken the middle class into two sections; lower middle class and upper middle class. USA TODAY used a broader definition of $25,000 for lower-middle class and a $99,999 figure to denote upper middle class incomes.

Poppick’s (2011) article, entitled “What Percent Are You?” used quintiles and income amounts to demonstrate the economic divide. She stated “that the top fifth of earners make more than half of the country’s total income.”

Thompson & Hickey (2005) broke down five quintiles into ‘Typical Characteristics.” The upper class or top 1 percent were described and composed of top level executives, celebrities, and heirs. They had incomes of $500,000 and higher with Ivy League educational degrees and experiences. Today, hedge fund managers, CEOs and bank executives dominated the 1 percent or upper class. Upper middle class was the next level and included 15 percent of the population. This group had obtained higher educational degrees and professional education with household incomes varying between the high five figure ranges to above $100,000. The lower middle class had incomes between $35,000 and $75,000. These semi-professionals and craftsmen with some college experience had work autonomy. The working class included 32 percent of the population and consisted of pink clerical and blue collar workers earnings incomes between $30,000 and $16,000. This last group made up about 14 percent to 20 percent of population and was titled the lowest class. This group possessed some high school education and worked in poorly paid positions or relied on government transfers (Thompson and Hickey, 2005).

Robert Frank’s (2008) book entitled Richistan, laid out a description of the 1 percent. The Lower Richistan were 7.5 million families, who are worth $1 million to $10 million and consist of doctors, lawyers and other professionals. The second level, Middle Richistan comprised 2 million families, each worth $10 million to $100 million and comprised of mostly entrepreneurs and small-business owners. Upper Richistan was the next level and included thousands of families of hedge fund managers, bankers, corporate CEOs and some sport super-stars with a net worth of over $100 million. Billionaireville was the final category and embraced the famous Forbes 400 richest Americans plus a few others whose net worth of 1 billion made the price of admission.

The U.S. Census Bureau used quintiles to divide United States incomes five groups. Therefore, the middle 20 percent was truly the middle class and these households making between approximately $39,000 and $63,000 per year qualified. (PBS News Hour EXTRA Only “What is the American Middle Class” posted September 24, 2012). It was important to pinpoint that the 2012 median income of $50,040 dropped by 1.5 percent. In the peak of 1999, the median income was higher, $54,932 and in 2007, it fell to $54,489, still higher than today (Cauchon and Overberg 2012). United States today placed the medium income at around $50,000.

As a result, numerous Americans have spiraled downward from upper middle class into the lower middle class and lower. However, those individuals socialized by middle class standards, understand middle class norms, comprehend the hidden middle class rules, work ethic and expectations. Even though they spiral downward from middle class into Situational Poverty, they are capable of navigating the middle class institutions, accessing resources and are better prepared for survival. (Payne, DeVol &
Situational poverty was defined by a lack of resources due to a particular catastrophic situation or event, e.g., natural disasters, loss of wages, high medical costs, serious illness, unemployment, educational cost, divorce, death, foreclosure and bankruptcy, layoffs, outsourcing and major housing repair. Situational Poverty people were reluctant to accept charity due to their pride (Payne, DeVol & Smith, 2009, Stiglitz 2012 and Smith 2012).

The truly disadvantaged, the bottom the 20 percent, were described by Payne, DeVoe and Smith, (2009) as Generational Poverty, individuals and households, who lived at the very bottom rung of the economic ladder, and as “having been in poverty for at least two generations, (Payne, DeVol & Smith 2009). However, the Generational Poverty patterns began to surface much sooner than two generations if the family lived with others who are from Generational Poverty. Individuals in Generational Poverty were extremely poor and were unaware of the hidden rules of the middle class (LeBlanc, 2003). Their days were devoted to securing Maslow’s Hierarchy of Needs, hunting for food, shelter, clothing while fighting for survival. Generational Poverty possessed its own culture, belief systems, behaviors and hidden rules. Often, people, who lived in Generational Poverty, believed that society owes them a living. Goal setting was foreign to people in Generational Poverty. Time was in the present. There was always background noise, T.V., music and chatter. Entertainment filled the void. When one constantly was in survival mode, entertainment brought relief. Relationships were paramount to survival and they relied on others for survival. The language used by Generational Poverty was always in casual register. There were no thoughts of careers or mobility. A job was about making money in order to survive. Most cognitive thoughts were concrete. Their life style was hard, extremely stressful and depressing and filled with frustration, boredom and fatalistic thinking. Their choices were limited as were their opportunities. The inequalities and injustices that they experienced, were overwhelming. They were truly the disadvantaged (Payne, DeVol, & Smith, 2009 and LeBlanc, 2003).

The research of LeBlanc, (2003), Payne, DeVol, & Smith (2009), and Smith, (2012) presented the composite portrait of Generational Poverty. Persons living in Generational Poverty were unable to purchase a home, therefore, they are forced to rent or they experienced homelessness. If they were somehow able to locate housing with help through the government’s HUD, metropolitan housing or section XX, they were considered extremely lucky. Other families and individuals lived in substandard housing in overcrowded conditions. Moving was a regular phenomenon. They usually lived within inner-cities or poor rural areas that had violent crime ridden neighborhoods with drugs, disease, sanitation problems, pollution, infiltration of insects and rats and a lack of police and fire protection. Grocery shopping and health care facilities were at a minimum. Often products were sold at inflated prices. Transportation was another huge problem. Very few Generational Poverty individuals owned automobiles, because ownership required money and upkeep, not to mention license plates and auto insurance. Taxies did not venture into the inner-city or poor rural neighborhoods. Public transportation was costly and required long periods of time for travel.

The children of Generational Poverty attended the worst schools. The buildings were rundown with outdated equipment. Classes were held in crowded and obsolete class rooms. The teachers were underpaid and over worked. The schools had the least amount of resources. The children born into Generational Poverty were deprived, disadvantaged, received inadequate education and consequently many dropped out. Teicher-Khadaroo (2013) writing for The Christian Science Monitor Weekly cited that about 600,000 United States students are dropping out of high school on a yearly basis, which today resulted in economic and educational suicide and a life of unemployment and poverty. The Measure of American of the Social Science Research Council reported that the cost to the American taxpayers was $5.8 million. Teicher-Khadaroo (2013) also reported that the 16 to 24 year olds, who dropped out of school, required government programs e.g., CHIP, Children Health Insurance Program and SNAP the food stamp program, plus the lost tax revenues and cost American taxpayers more than $93.7 billion.

People living in Generational Poverty experienced an overabundance of physical and emotional problems, e.g., depression, anxiety and other stressful related conditions. Many, especially the children, were laden with asthma, ailments from lead paint, developmental disabilities and undiagnosed learning disabilities. Most are eligible for temporary government programs such as TANF, SNAP and children...
under 19, qualify for CHIP. Most persons remained in Generational Poverty, because they saw no choice.
The middle class hidden rules of the middle class remained hidden to them. Generational Poverty lacked the resources and opportunities to advance therefore, they lived struggling in turmoil (LeBlanc, 2003). Stiglitz (2012) commented on the Horatio Alger motif, ‘pull yourself from your boot straps’ and wrote that it was a myth. He agreed that a few intelligent individuals had pulled themselves up and climbed upward, most are not able to. Table V compares hourly earnings of $8.50 for a 34 hour work week or perma-temp and the 40 hour work week.

On other hand, those caught in Situational Poverty were able to spiral upward into the middle class, because they had the knowledge of resources, they know the middle class rules, expectations, and they had choices (LeBlanc 2003, Payne, DeVol, & Smith 2009 and Smith 2012).

There were large chasms between the bottom Americans and the top percent. The bottoms’ chances of moving upward were very slim, only 58 percent of the bottoms children made it out, however, they only were able to move up into the next quintile. Their parents will remain at the bottom quintile, while those hovering at the top had little chance of descending downward (Stiglitz, 2012). Research findings from the Economic Policy Institute and the Economic Mobility Project, was brought to light by journalist Jonathan Chait (Stiglitz, 2012). Chait declared that today the major forces that impact a person’s success was her or his initial conditions, namely the parental units’ educational levels and incomes. In other words, parents, with graduate degrees from prestigious universities and with earnings and wealth that places them within the top quintile, are the best qualifiers for successful children. Examples of thought and cultural distinctions between poverty, idle class and the wealth are located in Table VI.

This environment of economic inequality reflects a condition of social and psychological depression. This experience is not some theoretical hypothesis in a laboratory experiment but it is the lives of real living human beings. People are hurting and they live in conditions of real suffering. The insights from liberal economics, suggests that free markets and the natural laws of economics will create balance and restore equilibrium to society. Time will heal all problems. John Maynard Keyes’s historical response to this position indicates that before markets balance themselves, we could all be dead (Wapshott, 2012).

Keyes shows a deep empathy for the unemployed and optimism that government can levitate some of the burden of hardship. This concern comes from a sense of justice and the immediacy to solve social problems (Wapshott, 2012). A contemporary vision concentrates on individual hardship and pain. Stiglitz (2012) states simply that the present economic divide is unfair. In the viewpoint of Puthoff-Murray and Murray, the word unfair means not just, injustice. According to the American Heritage College dictionary, justice and fairness are interchangeable. Thus a question surfaces concerning moral accountability? Bergant (2013) defines moral accountability as “taking credit or blame for one’s actions, accepting the consequences that come from those actions and understanding that such actions impact others.”

Would raising moral accountability correct the imbalance of injustice and unfairness?

REFERENCES
Cauchon, Dennis and Overberg, Paul. (September 13, 2012). “Earnings ebb, but well- off thrive. Median incomes see a 1.5 % drop.” USA TODAY. p. 1B.


Reinhard, Colleen (September 24, 2012). "What Income Constitutes the Middle Class? “ *PBS News Hour* Extra online. eHow.com


The Week. (October 4, 2013) Food Stamps: Why the GOP wants cuts.


U.S. Census Bureau. [www.census.gov/hhes/www/income](http://www.census.gov/hhes/www/income)


### TABLE 1

<table>
<thead>
<tr>
<th>AVERAGE ANNUAL INCOME BREAK DOWN</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Super Elite Wealthy</td>
<td>0.01 percent made</td>
</tr>
<tr>
<td>Top</td>
<td>.01 percent made</td>
</tr>
<tr>
<td>Top</td>
<td>1 percent made</td>
</tr>
<tr>
<td>Top</td>
<td>10 percent made</td>
</tr>
<tr>
<td>Bottom</td>
<td>90 percent made</td>
</tr>
</tbody>
</table>
### TABLE II
**HEALTH HUMAN SERVICES PROVETY GUIDELINES 2012**

<table>
<thead>
<tr>
<th>Group</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>One person</td>
<td>$11,170</td>
</tr>
<tr>
<td>Single Parent - one child</td>
<td>$15,130</td>
</tr>
<tr>
<td>Family of three</td>
<td>$19,090</td>
</tr>
<tr>
<td>Family of four</td>
<td>$23,050</td>
</tr>
<tr>
<td>Family of five</td>
<td>$27,010</td>
</tr>
<tr>
<td>Family of six</td>
<td>$30,970</td>
</tr>
<tr>
<td>Family of seven</td>
<td>$34,930</td>
</tr>
<tr>
<td>Family of eight</td>
<td>$38,890</td>
</tr>
</tbody>
</table>

Families/households with more than 8 persons, add $3,960 for each additional person


### TABLE III
**FEDERAL POVERTY MEASURES**

<table>
<thead>
<tr>
<th>Group</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>One family member</td>
<td>$10,830</td>
</tr>
<tr>
<td>Two family members</td>
<td>$14,570</td>
</tr>
<tr>
<td>Three family members</td>
<td>$18,310</td>
</tr>
<tr>
<td>Four family members</td>
<td>$22,050</td>
</tr>
<tr>
<td>Five family members</td>
<td>$25,790</td>
</tr>
<tr>
<td>Six family members</td>
<td>$29,530</td>
</tr>
<tr>
<td>Seven family members</td>
<td>$33,270</td>
</tr>
<tr>
<td>Eight family members</td>
<td>$37,010</td>
</tr>
</tbody>
</table>

U.S. Department of Health and Human Services maintains a chart of federal poverty measure that is used by the Low-Income Home Energy Assistance Program - HEAP, National School Lunch Program, Head Start, Children’s Health Insurance Program - CHIPS and the Food Stamp Program - SNAP

### TABLE IV
**HOURLY WAGES BASED ON 40 Hr. WORK WEEK**

<table>
<thead>
<tr>
<th>Hourly</th>
<th>$7.25</th>
<th>$9.00</th>
<th>$10.00</th>
<th>$11.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td>$290.00</td>
<td>$360.00</td>
<td>$400.00</td>
<td>$440.00</td>
</tr>
<tr>
<td>Monthly</td>
<td>$1,160.00</td>
<td>$1,440.00</td>
<td>$1,600.00</td>
<td>$1,760.00</td>
</tr>
<tr>
<td>Yearly</td>
<td>$13,920.00</td>
<td>$17,280.00</td>
<td>$19,200.00</td>
<td>$21,210.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hourly</th>
<th>$12.00</th>
<th>$15.00</th>
<th>$18.00</th>
<th>$20.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td>$480.00</td>
<td>$600.00</td>
<td>$720.00</td>
<td>$800.00</td>
</tr>
<tr>
<td>Monthly</td>
<td>$1,920.00</td>
<td>$2,400.00</td>
<td>$2,880.00</td>
<td>$3,200.00</td>
</tr>
<tr>
<td>Yearly</td>
<td>$23,040.00</td>
<td>$28,800.00</td>
<td>$34,560.00</td>
<td>$38,400.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hourly</th>
<th>$25.00</th>
<th>$30.00</th>
<th>$40.00</th>
<th>$50.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td>$1,000.00</td>
<td>$1,200.00</td>
<td>$1,600.00</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Monthly</td>
<td>$4,000.00</td>
<td>$4,800.00</td>
<td>$6,400.00</td>
<td>$8,000.00</td>
</tr>
<tr>
<td>Yearly</td>
<td>$48,000.00</td>
<td>$57,600.00</td>
<td>$76,800.00</td>
<td>$96,000.00</td>
</tr>
</tbody>
</table>

- A lower-wage job is one paying less $13.43 an hour - which is 150 percent of the poverty level for a family of four. Source: Plain Dealer. Business. September 9, 2012.
TABLE V

Monthly Budget for Hourly Wage Earnings of $8.50 before taxes for Single Mom two Children

HHS 2012 Poverty Guidelines Family of Three = $19,090

<table>
<thead>
<tr>
<th></th>
<th>Hourly 34hrs</th>
<th>Hourly 40 hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td>$289.00</td>
<td>$340.00</td>
</tr>
<tr>
<td>Monthly</td>
<td>$1,156.00</td>
<td>$1,360.00</td>
</tr>
<tr>
<td>Yearly</td>
<td>$13,872.00</td>
<td>$16,320.00</td>
</tr>
</tbody>
</table>

- $1,156.00 Monthly Gross Take Home $1,360.00
- 800.00 Rent
- 800.00 Rent
- 200.00 Utilities
- 300.00 Child Care
- 144.00
- 60.00
- 204.00 Transportation, gas
- 70.00 Phone/Cable

Does not include the following:
Food, Diapers/Formula, Clothes Coats, Shoes, Boots, Toys, Paper Products, & Hygiene Products, Shampoo, Cleaning Supplies, Soap, Laundermat ($1.50 per load washer and dryer) Furniture, Bedding. Cookware, Dishes, Medications,

* National Average for SNAP - Supplementary Nurture Assistance Program benefit per day $4.45

TABLE VI

Payne, DeVol, Smith (2009), distinctions between poverty, middle class and the wealth

<table>
<thead>
<tr>
<th></th>
<th>Poverty</th>
<th>Middle Class</th>
<th>Wealthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money</td>
<td>money must be spent and used</td>
<td>money is to be managed</td>
<td>money is to be invested, conserved.</td>
</tr>
<tr>
<td>Food</td>
<td>asks “Did you have enough?”</td>
<td>asks “How did it taste?”</td>
<td>asks “How was it presented?”</td>
</tr>
<tr>
<td>Possessions</td>
<td>People</td>
<td>Things</td>
<td>One of a king objects, legacies pedigrees</td>
</tr>
<tr>
<td>Education</td>
<td>Valued and revered as abstracts but not as reality</td>
<td>Crucial for mobility and success and money</td>
<td>Necessary for making and maintaining connections</td>
</tr>
</tbody>
</table>
Team-Based Learning and Peer Evaluations:
A Comparison of the Use of Learning Contracts

Deana M. Raffo
Jennifer L. Dooley
Middle Tennessee State University

Karen Greenockle
University of Tennessee Martin

While not easy to manage for faculty and not always popular with students, there are numerous benefits to students working in teams. In this paper, we examine the influence of team member contracts on peer evaluations in classes across three disciplines: leadership, nutrition, and mathematics. Prior to this study, it had been our perception as faculty that students working on group projects rated their peers with leniency, even those peers who were unproductive and/or difficult to work with. As a result, we developed student instructions (see Appendix A), or expectations, for working in groups. For our study group, we also crafted a “Group Member Contract” (see Appendix B) that further outlined these expectations where the students signed that they agreed to these conditions and to evaluate themselves and their teammates fairly. We hypothesized that by signing a contract, students would hold themselves and their peers more accountable to our expectations, as well as be less likely to be too lenient in their scoring of themselves and their peers.

When properly structured, group projects can foster skills such as delegation, time management, conflict resolution, interpersonal communication, accountability, and teamwork. Students can also learn the value of differing perspectives, finding their voice, peers to emulate, pooling knowledge and workload, and giving and receiving feedback on performance (e. g. Boud, 2001; Carnegie Mellon Eberly Center, n.d; Davis, 2009; Michaelsen & Sweet, 2008, Siciliano, 2001; Vik, 2001). The advantages for faculty are similarly enjoyed. Faculty can assign more complex problems to groups, group projects can allow more time for faculty-student interaction, and grading time can be reduced (Carnegie Mellon Eberly Center, n.d).

On the other hand, group projects have disadvantages. “Social loafing,” a common pitfall where an individual freeloads on the contributions of the group, is a big concern (Greenacre & Freeman, 2011). Students have often had negative experiences with group projects where peers do not fully participate, they have difficulty finding common meeting times, they perceive the grading to be unfair since all group members are graded the same, or conflict abounds. These hurdles can be difficult for faculty to overcome which is why it is important to structure group projects to empower group success. While it is not within the scope of this paper to review the best practices for structuring groups, we refer the reader to Barbara Gross Davis’ (2009) chapter, “Learning in Groups,” in her book Tools for Teaching as an excellent resource.

When it comes to best practices for assessing group work, Davis (2009) emphasizes that individual student performance should be assessed and that students should have an opportunity to evaluate their teammates. In other words, individual students in the group should not be given the same grade in order to account for variances in performance. Many instructors shy away from group projects because of their notion that all group members should receive the same grade, yet they have feelings of unfairness in this system, knowing that all members do not contribute equally and it can be challenging to assign grades individually (Logginton, 2008; Wilkins & Lawhead, 2001). Giving individual group members some
level of variability to account for these differences helps to balance out these perceptions of unfairness in addition to numerous benefits.

Student involvement in the assessment process can take the form of peer assessment and/or self-assessment (Falchikov & Goldfinch, 2000). There are two types of peer assessment: product assessment evaluates the work or finished product and process assessment evaluates the contribution and/or performance of the students in the group (Logginton, 2008). Advantages of peer assessment include individual contributions recognized and positive impact on personal responsibility. On the other hand, pitfalls include subjectivity, group collusion, and tendency in leniency in rating peers (Falchikov & Goldfinch, 2000).

To contend with the pitfalls associated with group work, whether it is social loafing or peer leniency in assessment, written contracts are one way to explicitly state expectations. In fact, in outline best practices for group and teaching, Davis (2009) encourages written contracts to foster student learning and success. Learning contracts are a teaching method that uses a formal agreement to facilitate learning. It is a strategy that focuses on helping learners to develop a process and activities for learning (Chyung, 2007). We use this term in our paper since it fits these criteria, although it is often more applicable to self-directed learning environment.

**Method**

*Courses and project descriptions.* The authors surveyed students in their classes in which a team project was required. No learning contract was used in the Fall 2011 semester as a control group. The learning contract was implemented in the Spring 2012 semester for the experimental group. A brief description of the courses and projects follows.

The leadership course is an upper-division course that surveys prominent leadership theories, approaches, and research. The group project required research and a 20-25 minute presentation to the class on a leadership topic such as women and leadership, bad leadership, leadership and culture, and emotional intelligence and leadership.

The nutrition course is an upper-division course that examines the role of nutrition for the physically active individual as it relates to health-related fitness and athletic performance. In groups of four to five students, students presented on a topic related to nutrition such as supplements, child health, obesity, and cultural differences.

The mathematics course is a freshman-level, prescribed college algebra course enrolling students whose ACT or other scores indicated that they needed extra review and assistance. This course is required for these students. The project involved group members collecting data from peers to compare shoe size to height. They were required to use basic statistics such as mean, median and most importantly, linear regression to compare these measurements. Groups were required to make a brief presentation to the class discussing their methods and findings.

*Participants.* The participants included undergraduate students at two public universities in the southeast. Students in the study were asked to complete a survey (see Appendix C) after the completion of the project. The students in Fall 2011 were not given a learning contract while the students in Spring 2012 were given a learning contract. For Fall 2011, N= 98. For Spring 2012, N = 86. The courses in the study were the same for both semesters as were the instructors of the courses.

*Student instructions/expectations for team members.* Prior to the class projects, the authors came to an agreed upon set of instructions and expectations for team members to be read to all classes, including the control and experimental groups. These instructions included a confidentiality statement, grading criteria, and expectations that included items such as be prepared, complete all tasks, attend all meetings, provide assistance, etc. (see Appendix B for Student Instructions).

*Evaluation criteria.* Again, prior to the class projects, the authors jointly crafted the evaluation criteria for the peer and self-assessment portion of the grade. Students assessed their peers and themselves both on product and on process on three items: 1) preparation in developing presentation, 2) collaboration in developing presentation, and 3) overall level of contribution (see Appendix C). Students used a 4-point Likert scale to rate each of these items: 0 = No Contribution; 1 = Poor, 2 = Satisfactory, and 3 = Good. Students rated each of their teammates and themselves. Space was also provided for comments for
students to justify their scores. The authors agreed that 25% of the total project score was a fair weight to provide individual accountability to the project as a whole product.

**Learning contract.** Prior to beginning their projects, students in the experimental group signed a learning contract (see Appendix A) agreeing to the expectations that were outlined. These expectations were identical to the instructions that were read to the control group with the exception that statements were included to agree to evaluate myself and my teammates objectively and fairly and that failure to adhere to expectations will result in a deduction of points. As stated earlier, our hope was that the use of a contract would hold students more accountable to both the process of effort and participation in the project as well as evaluation of peers and oneself fairly.

**Team-based learning survey.** The experimental group participants evaluated eight items including instructor’s expectations, teammate evaluation instructions, evaluation scale, perception of grading oneself and teammates fairly, perception of the learning contract as an influence in self and teammate participation, and weight of teammate and self-evaluation in proportion to final project grade (see Appendix D for survey). Students rated each of the items on a Likert scale: strongly disagree, disagree, undecided, agree, and strongly agree.

**Results**

Students in the classes completed surveys to determine their perceptions of how they evaluated their teammates in the group projects. First, the extent to which students agreed or disagreed with the survey items was assessed. For each of eight items, the following values were used for statistical analysis: 
- **Strongly Disagree** = -2;
- **Disagree** = -1;
- **Undecided** = 0;
- **Agree** = 1;
- **Strongly Agree** = 2.

The Mann Whitney test for non-parametric data was calculated to determine for which items there was a statistical difference between perceptions of students with and without the use of learning contracts.

For each of the eight survey items, the researchers hypothesized the following:
- **H0:** No significant difference between the control and experimental groups.
- **H1:** Significant difference between the control and experimental groups.

The Mann-Whitney test for non-parametric data which analyzes median scores was calculated to compare the survey results of those students who were not asked to sign a learning contract (Fall 2011) with those who did sign a learning contract (Spring 2012). All statistical calculations were completed using Minitab 16. The Mann Whitney test assumes independent random samples. This test was found to be appropriate because the two distributions had non-normal distributions and were roughly the same shape.

Table 1 shows summary statistics for students’ assessments on each of eight items on the survey. In particular and of special interest to the researchers, student most highly agreed that they did evaluate their teammates fairly and that they did evaluate themselves fairly, in the absence of a learning contract and when a learning contract was employed.

The Mann Whitney U test (see Table 2) showed a significant difference in the perceptions of the two groups of students (those not using a learning contract and those using a contract) on Items 3 and 4 only at p < .05. Item 3: “The scale (0-3) was adequate to describe my teammates’ contributions.” The test showed significance at .0057, which is below our alpha level of .05. Hence we reject H0 for this item. Item 4: “I evaluated ALL of my teammates fairly.” The test showed significance at .0292, which is also below our alpha level of .05. Hence we reject H0 for this item. For items 1,2,5,6,7, and 8, p > .05. Hence for those items, we fail to reject H0.

This indicates that students were more likely to believe that a 0-3 scale was sufficient for adequately and fairly evaluating their teammates when a learning contract was not used. Furthermore, students believed they evaluated their teammates more fairly when a learning contract was used.

As shown in Table 3, we can see from the means computed, that most students perceive themselves as being fair when evaluating their teammates and also when evaluating themselves whether or not a learning contract was used.

**Conclusions**

The purpose of this study was to examine the influence learning contracts may have in holding students accountable to instructor expectations when working in teams. Prior to this study, our perception
was that when working on group projects, students often rated their teammates with leniency, even those deserving of a low score. We hypothesized that by signing a contract, students would be more likely to score themselves and their teammates fairly and with undeserved leniency for those who did not contribute as much or who were difficult to work with.

Two of the eight items revealed significant differences between the control group and the experimental group. One difference was found in the item that asked students to if the scale (0-3) on which to rate their peers was adequate. On this item, the experimental group scored this item lower than the control group. We are unsure why the learning contract would influence a student’s perception of this scale and this may merit further study.

Of more interest is the significance difference found on the item that asked students if they evaluated their teammates fairly. When the learning contract was used, students indeed indicated that they evaluated their teammates more fairly when a learning contract was used. In other words, the learning contract appeared to have held students more accountable to instructors’ expectations in evaluating teammates as we had hypothesized.

Overall, results indicated that students believed they were fair when evaluating their teammates and themselves. They perceived the scale they were instructed to use in evaluating their teammates was adequate and that counting peer evaluations as 25% of the project grades was a fair weight. While this is one study with a small population, the results are encouraging for the use of learning contracts for team-based learning projects and further research is clearly warranted.

References
http://www.cmu.edu/teaching/design/teach/design/instructionalstrategies/groupprojects/index.html
Teaching Professor; 25(6), 6.
Vik, G. N. (2001). Doing more to teach teamwork than telling students to sink or swim. Business Communication Quarterly, 64(4), 112-119.
Table 1

*Median Scores: Without Contract, With Contract*

<table>
<thead>
<tr>
<th>Item</th>
<th>$\eta_1$</th>
<th>$\eta_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Instructors expectations of teammates was adequate</td>
<td>1.0000</td>
<td>1.000</td>
</tr>
<tr>
<td>2. Instructions for evaluation of teammates was adequate</td>
<td>1.0000</td>
<td>1.000</td>
</tr>
<tr>
<td>3. Evaluation scale (0-3) was adequate</td>
<td>0.0000</td>
<td>1.000</td>
</tr>
<tr>
<td>4. Evaluated teammates fairly</td>
<td>2.0000</td>
<td>2.000</td>
</tr>
<tr>
<td>5. Evaluated self fairly</td>
<td>2.0000</td>
<td>2.000</td>
</tr>
<tr>
<td>6. Use of peer evaluations influenced my level of participation</td>
<td>1.0000</td>
<td>1.000</td>
</tr>
<tr>
<td>7. Use of peer evaluations influenced group members’ level of participation</td>
<td>0.0000</td>
<td>1.000</td>
</tr>
<tr>
<td>8. 25% weight for peer evaluations reasonable</td>
<td>1.0000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 2

*Mann Whitney Test*

<table>
<thead>
<tr>
<th>Item</th>
<th>$W$</th>
<th>$P$(adjusted for ties)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Instructors expectations of teammates was adequate</td>
<td>8194.0</td>
<td>0.0644</td>
</tr>
<tr>
<td>2. Instructions for evaluation of teammates was adequate</td>
<td>8554.0</td>
<td>0.4674</td>
</tr>
<tr>
<td>3. Evaluation scale (0-3) was adequate</td>
<td>7846.5</td>
<td>0.0057*</td>
</tr>
<tr>
<td>4. Evaluated teammates fairly</td>
<td>8120.0</td>
<td>0.0292*</td>
</tr>
<tr>
<td>5. Evaluated self fairly</td>
<td>8399.5</td>
<td>0.2072</td>
</tr>
<tr>
<td>6. Use of peer evaluations influenced my level of participation</td>
<td>8496.0</td>
<td>0.4020</td>
</tr>
<tr>
<td>7. Use of peer evaluations influenced group members’ level of participation</td>
<td>8471.0</td>
<td>0.3643</td>
</tr>
<tr>
<td>8. 25% weight for peer evaluations reasonable</td>
<td>8911.5</td>
<td>0.6935</td>
</tr>
</tbody>
</table>

For each item 1 – 8,

$H_0$: $\eta_1 = \eta_2$ (where $\eta$ is the population median)

$H_1$: $\eta_1 \neq \eta_2$
Table 3
Mean Scores: Combined, Without Contract, With Contract

<table>
<thead>
<tr>
<th>Item</th>
<th>Combined M (N = 182)</th>
<th>Without Contract M (N = 96)</th>
<th>With Contract M (N = 86)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, Instructors expectations of teammates was adequate</td>
<td>1.30</td>
<td>1.18</td>
<td>1.43</td>
</tr>
<tr>
<td>2. Instructions for evaluation of teammates was adequate</td>
<td>1.32</td>
<td>1.28</td>
<td>1.37</td>
</tr>
<tr>
<td>3. Evaluation scale (0-3) was adequate</td>
<td>0.43</td>
<td>1.20</td>
<td>0.69</td>
</tr>
<tr>
<td>4. Evaluated teammates fairly</td>
<td>1.52</td>
<td>1.40</td>
<td>1.66</td>
</tr>
<tr>
<td>5. Evaluated self fairly</td>
<td>1.52</td>
<td>1.47</td>
<td>1.58</td>
</tr>
<tr>
<td>6. Use of peer evaluations influenced my level of participation</td>
<td>0.53</td>
<td>0.46</td>
<td>0.62</td>
</tr>
<tr>
<td>7. Use of peer evaluations influenced group members’ level of participation</td>
<td>0.47</td>
<td>0.41</td>
<td>0.55</td>
</tr>
<tr>
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Appendix A
Student Instructions

Each team member will also be evaluated by teammates according to the following criteria. Grading will remain confidential and will take place at the conclusion of each presentation. If any member misses a meeting, does not prepare valuable information to contribute, does not work well with others, appears unprepared during the presentation, etc. it should be reflected in this portion of the grade. Be prepared to evaluate each teammate both quantitatively and qualitatively according to the criteria below.
- Preparation in developing the presentation
- Collaboration in developing the presentation
- Overall level contribution in determining group’s success that is evident in the presentation itself.

Expectations for Team Members:
- Be prepared for all team meetings
- Complete all tasks assigned to you
- Attend all meetings and arrive on time
- Actively and productively participate in all group sessions
- Help promote one another’s learning
- Provide assistance, support, and encouragement to team members
Appendix B
Group Project/Presentation
Group Member Contract

I understand that I will be evaluated by my teammates according to the criteria below. Grading will remain confidential and will take place at the conclusion of each presentation. If I miss a meeting, do not prepare valuable information to contribute, do not work well with others, appear unprepared during the presentation, etc., I understand that it will be reflected in this portion (25%) of my grade.

I understand that I will evaluate myself and my teammates both quantitatively and qualitatively according to the following:
- Preparation in developing the presentation
- Collaboration in developing the presentation
- Overall level contribution in determining group’s success that is evident in the presentation itself.

I understand and agree to the following expectations for myself and my teammates:
- I will be prepared for all team meetings
- I will complete all tasks assigned to me
- I will attend all meetings and arrive on time
- I will actively and productively participate in all group sessions
- I will help promote my teammates’ learning
- I will provide assistance, support, and encouragement to my team members

I agree to evaluate myself and my teammates objectively and fairly according to the criteria above.

I understand that failure to adhere to these expectations will result in a deduction of points from my teammates on the peer evaluation portion of my grade.

Student Signature    Date

-----------------------------------------    -------------------
### Appendix C

**Team Member Performance Evaluation**

Each team member’s contribution to the total team effort is crucial to project success. Please be as direct, honest, and balanced in your feedback as possible in responding to the following. Evaluate yourself and your teammates according to the following criteria. All information is kept confidential and not shared with teammates.

You must provide a description of your teammates work that justifies his/her score in the “Description” box.

**Scoring:**
- 0 = No contribution
- 1 = Poor
- 2 = Satisfactory
- 3 = Good

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### Appendix D

**Team-Based Learning Survey**

1) The instructor’s expectations on being an effective teammate (preparation, collaboration, etc.) were adequately communicated.  
   Please explain.
   - Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

2) The instructions on how to evaluate my teammates (defined criteria, scale to use, etc.) were adequately communicated.  
   Please explain.
   - Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

3) The scale (0-3) was adequate to describe my teammates’ contributions.  
   If you disagree or strongly disagree, what scale would have been more useful (e.g. 1-10; 0-5, 1-3, etc.).  
   Please explain.
   - Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

4) I evaluated ALL of my teammates fairly.  
   Please explain.
   - Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

5) I evaluated myself fairly.  
   Please explain.
   - Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

6) The use of peer evaluations influenced my level of participation and/or contribution to the group.  
   Please explain.
   - Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

7) I feel that the use of peer evaluations influenced my team members’ level of participation and/or contribution.  
   Please explain.
   - Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree

8) The 25% weight for peer evaluations for my project grade is reasonable to hold students accountable.  
   Please explain.
   - Strongly Disagree  Disagree  Undecided  Agree  Strongly Agree
Rural Community College Students’ Perceptions of Difficulty Towards Taking Social Sciences Classes Online Versus Lecture: A Case Study

Jeffrey T. Schulz  
Central Community College

Allen Francis Ketcham  
Texas A&M University

Abstract
This qualitative research examines rural community college students’ perceptions of difficulty taking social science classes online versus taking them as a lecture course. There is no prior literature on this topic. This case study takes place in a Midwestern city in the state of Nebraska. This research examines how 161 rural community college students responded to a series of 13 demographic questions and an open-ended question related to perceived difficulty of taking a social science course online versus lecture. This study is a culmination of three years of data collection which occurred from the fall semester of 2010 through the spring semester of 2013, in which students had the option to answer questions related to perceived difficulty of social science classes online. This is the second and final part of an ongoing three year study. The online social science courses used in this research included the following courses: Introduction to Sociology, Social Problems, and Gerontology. The purpose of this study is to discover whether or not rural community college students perceive online social science courses more difficult than taking them as a lecture course.

Introduction
Kithc-Cakmak, Karatas, and Ocak (2009) confirm what the authors of this research have discovered, which is most attitudinal research toward online learning has focused on instructors’ attitudes in the online environment, but have neglected to assess what community college students who take online courses think about them. Also, there has been minimal research conducted on rural community college students’ attitudes toward taking classes online, specifically, there has been virtually no research conducted on rural community college students’ perceptions of levels of difficulty taking social science courses online versus taking them as a lecture course.

This case study seeks to address this research question and will be the focal point of this paper. It is our hope, that after we complete this case study, we can conduct a future study on many more rural community colleges within our state, and possibly around the United States. The institution being used in this study is a Midwestern community college in a rural Midwestern state, about 86 miles away from the geographic center of the United States to assess students’ perceptions of level of difficulty for taking social science classes online.

According to the 2010 Current Population Survey released in July 2012, exactly 76.9% of people living in the state of Nebraska have home access to the Internet (U.S. Census Bureau, Current Population Survey, Table 3A, July 2012). This is one percentage point higher than the overall United States average of 75.9% (U.S. Census Bureau, Current Population Survey, Table 3A, and July 2012). Further, 83.9% of Nebraska’s citizens live in a household with a computer compared to 81.4% of other Americans (U.S. Census Bureau, Current Population Survey, Table 3B, and July 2012).

During the 2011-2012 academic year, this college served a total of 24,336 students (13,092 were full-time credit seeking students); 84% or 20,381 of those students were in the primary 25 county area the college serves in rural Nebraska (Enrollment Report, Central Community College, 2011-2012). The three
most popular majors on campus as of the 2011 and 2012 academic year were Business Administration, Nursing, and Business Technology (Enrollment Report, Central Community College, 2011-2012). This college has three primary campuses and several smaller satellite campus sites in the 25 county regions it serves.

The average age for a full-time student at this community college is 23 and for part-time students it’s 27 (Enrollment Report, Central Community College, 2011-2012). The racial breakdown for credit students is the following: For Whites (82.8%); Blacks (1.3%); Native American (0.04%); Asian and Pacific Islander (1.08%); Hispanic/Latino (10.80%); Hawaiian/Islander (0.016%); and for students reporting to be of two or more races (0.086%) (Enrollment Report, Central Community College, 2011-2012). The gender breakdown for credit students is the following: Males comprise 44.18% and females comprise 55.82% of the population (Enrollment Report, Central Community College, 2011-2012). This study includes 161 community college respondents who took online social science classes between the fall of 2010 and spring 2013. A review of the literature follows.

Review of Literature

In a recent article from Time Magazine published on October 29, 2012, it states that the number of community college students has increased from 2.3 million students in 1970 to 7.8 million students in 2011 (pg. 36). The TIME/Carnegie Corporation conducted a survey of 1,000 U.S. adults and college leaders asking a series of questions about several looming crises in postsecondary education in the United States. Two of those questions were pertinent to our study and really sets up the framework for the research question we are trying to address in this case study.

In regard to higher education being offered online, one of the questions asked from that article included: “Much of the teaching on college campuses can be replaced by online classes?” Only 22% of College Leaders responded “yes” to this question, while 68% of the general population responded “yes” to this question (The TIME/Carnegie Corporation 2012). Another question was also asked: “Students will not learn as much in online courses as they will in traditional classes?” Around 52% of the general population responded with a response of either “Strongly Agree” or “Somewhat Agree” while 45% of college leaders responded with “Strongly Agree” or “Somewhat Agree” to this question (The TIME/Carnegie Corporation 2012).

Yet another interesting statistic from TIME (October 29, 2012) comparing community colleges to four year colleges in terms of graduation rates, the article reports that 58% of Four-Year College Students graduate on time (within six years) and 30% of Two-Year College Students graduate on time (within three years). The idea of anytime/anyplace online courses may seem to be an excellent choice for community college students since they juggle work, college courses, and family responsibilities. However, online courses nationwide have been beset by unusually high attrition rates. (Hyllegard, Deng, and Hunter 2008).

According to Rovai, Ponton, and Baker (2008), “Individual access to and skills in the use of technology are moderated by factors such as socioeconomic status, gender, ethnicity and culture” (p. 29). Khan (2012) also posits that “College is all about opening up opportunity, but the reality is that the ultra-smart, ultra-hardworking kid from a poor family, who worked full-time while getting good grades at a regional school or community college, will almost always be passed over when compared to someone graduating from a more well-known and selective school” (p. 230). He also continues that these students go to community colleges because these schools have more open admissions and tend to be more affordable.

Additionally, Messineo and DeOllos (2005) discovered that while college students in their study reported having considerable experience with the Internet, e-mail, word processing, and online course support applications, many of the students didn’t feel comfortable or confident when it came to more advanced and perhaps more marketable techniques such as data processing and analysis. They further state “The lack of comfort and confidence could translate into students being less willing to take risks with technology and possibly succumbing to a self-fulfilling prophecy of inability” (p. 53). In a similar study conducted by Keim and von Destinon (2008), they also found that online students’ greatest concerns included a perceived fear of lack of technical expertise to complete a web course. They also
found that online students complained about too much reading and too many assignments, specifically
discussion threads.  

Recent studies by Dobbs, Waid, and del Carmen (2009) and Seok, Kinsell, Da Costa, and Tung (2010)
indicate overwhelmingly that most four year college and community college students have a positive
perception of web classes they have taken. In fact, Dobbs et al. (2009) found that 77% of students taking
an online college class rated their experiences as either “good” or “excellent.”

Some of the other positive findings from recent studies in the literature as reported by online
community college students include: They learned more, more convenient, more collaboration, more
reflective, better able to apply knowledge gained from an online course, more rigorous than lecture
classes, more student to student interaction than in a lecture class, they were more likely to read for the
online course than in a lecture course, spent more time on an online class than a lecture class, higher
quality learning, assignments promote learning, flexible, and time-saving.

On the other hand, the two most common negative comments reported in the studies included
problems with technology and a lack of belonging or feeling isolated in the online course.

Why Rural Community College Students Don’t Complete

Community colleges strive to be learning-centered institutions, which differ from four year colleges
and universities (Lendy 2009). Many recent studies (Smith and Ayers 2006; Garcia 2010; TIME/Carnegie
Corporation 2012) suggest that the low completion rates for community college students, no matter their
class, gender, race, ethnicity or any other social characteristic may be attributed to their
open door policy with no academic entrance requirements. Recent studies suggest (Cox 2005; Smith and
Ayers 2006; and Bambara et al. 2009) that a lack of access to technology in rural areas may be a
contributing factor as well.

Around the country, dropout rates at community colleges are exceeding 20% (Aragon and Johnson
students respond to online learning is scant and often inconclusive” (p. 19). Farnsworth and Bevis (2006)
also discuss the seven factors correlated with community college students not graduating. They include:
1. Not enrolling in postsecondary education within the same year as graduating from high school; 2.
Attending school part-time; 3. Being financially independent of parents; 4. Working full time; 5. Having
dependents other than a spouse; 6. Being a single parent; and 7. Not having received a standard high
school diploma. Mahoney (2009) also found that students’ life circumstances and institutional factors
were also reasons for community college students not completing their degree.

Another study conducted by Aragon and Johnson (2008) confirm a couple of the findings of the
Farnsworth and Bevis (2006) study, but also discovered a few other reasons why rural community college
students may not complete their degree. The reasons included: 1. Work schedules; 2. Bad
time/inconvenient time in their life; 3. Personal problems; 4. Health-related problems (family or
personal); 5. Move or transfer; 6. Conflict with job; and 7. Family responsibilities.

Another factor that must be mentioned is that in some rural areas of the United States there are various
cultures, including different racial and ethnic groups that are not part of the dominant Western culture.
Additionally, these students are not only trying to learn the subject material in a college class, but in a
college class that is offered online. Instructors and professors must be sensitive to a variety of teaching
pedagogies, learning styles, needs, and world views of these culturally diverse students (Smith and Ayers
2006). For example, many Hispanic/Latino learners prefer activities that are in groups, reflective, and
they prefer activities that are concrete instead of abstract. Additionally, they prefer information
processing, elaborative processing, and judgment over perception (Smith and Ayers 2006 and Garcia
2010).

What Purposes do Rural Community College Serve?

Rural communities have their own unique educational needs. Austin (2005) points out that rural
community colleges may be the only place where a global perspective can be learned, where
multiculturalism can be taught, specialized programs for nontraditional commuter students can be
achieved, and where disabled students have a chance at a solid education. Further, Austin (2005) notes
that many rural women have unique needs as a diverse group of learners. Many rural women have
careers, family, and community obligations and often do not allow adult women to enroll in conventional programs. Online courses can provide women, especially those living in rural areas, with access, flexibility, and convenience as a result of their obligations. Another benefit of online courses in poor, rural areas with limited transportation options is that high school students can take these courses and sometimes even have them transfer to the four year college or university (Bambara, Harbour, Davies, and Athey 2009).

Method
This is an exploratory case study examining rural community college students’ perceptions of difficulty taking social science classes online versus the traditional lecture. Data for this research were collected from students in the fall of 2010 through the spring of 2013, which also included summer semesters as well. Students were administered a 23-item survey instrument and were asked to answer 13 demographic questions and then ten open-ended questions. This instrument was only administered to online social science students at the 100 and 200 level.

The instrument asked the students questions such as highest level of education they had completed, area of study, gender, age, race, mother and father’s level of education, mother and father’s occupation, political affiliation, and income. The ten open-ended questions included questions related to attitudes toward taking classes online in general at our community colleges, perceptions of level of difficulty of taking a social science class online versus a lecture, and questions related to if the student ever planned on taking online classes again at our community college or at a four-year college.

Findings
The focus of this case study is to examine rural community college students’ attitudes toward taking online social science classes. The underlying question for this study is: Do you believe taking social science courses online is easier or harder than taking them as a lecture class? There were 161 participants over the course of three academic calendar years who were willing participants. We broke down the student respondents’ answers into eight different categories, which included: easier (73), harder (46), combination of easy and hard (12), depends on instructor teaching the course (7), same amount of workload (10), no response (5), never taken a lecture course (6), and never taken an online course (2).

See “Results of the Study Graph” Belo
This section will summarize the most common responses provided by the student respondents for the two most popular responses, “easier” and “harder.” We will also account for the other six categories as well. The way students responded will be typed out exactly as they responded to the questions. There may appear to be some grammatical errors. Below is how the students responded by category.

Category 1: Easier to take classes online
Our research definition for “Easier to take classes online” means it is easier in terms of flexibility, convenience, and etc. Not easier content. The majority of the students (73 out of 161) in our case study answered online classes were easier than lecture courses. However, the reasons for this response may interest the reader. It is not because the content of the course was perceived as being easier. In fact, there was only one student respondent out of the 73 who suggested the course content was actually easier than in a lecture course. The other 72 students mentioned other reasons the online social science courses were easier, none of which had to do with content. Since this response yielded nearly 45% of the answers, and there was a lot of repetitiveness in answers, we will summarize some of the unique findings from our study that were not found in other studies.

A. Easier because of convenience and flexibility
This section summarizes some of the similar findings from our study compared to other studies found in the literature on student perceptions of level of difficulty of online courses versus lecture classes. Some of the similarities included: Convenience of not having to drive long distances, students can work at their own pace, it works with family obligations, it works with child obligations, it works with work obligations, students felt they could work ahead, if they got sick they could still work at their own pace and not feel bad about missing a class, the instructor made the course interesting with various assignments, study guides, and textbook selection.
B. Easier because of fuel cost and farming

Second, some of the more unique aspects our students reported in the study revolved around agriculture and farming schedules of many traditional and non-traditional students, driving distance was an issue because many students live several miles away from our campus, and the cost of fuel to travel to campus.

C. Easier because they are a single-parent household

Third, many single parents reported they were “easier” because they could do their work while their children were sleeping, playing, in school, or with their other biological parent for a certain amount of time. They also mentioned not having to drive themselves to school or “rush to class” so that they can be on time. Several student respondents who reported being single parents and third shift workers claimed they could get a lot of their coursework done on the job when they weren’t busy.

D. Easier due to instructor-paced

Finally, it should be noted our college offers both instructor-paced online social science courses and student-paced online social science courses. Many of the students preferred the instructor-paced online courses, reporting there was more structure in those courses, i.e., mandatory due dates and the instructor set the tone for the class. In student-paced online courses, where students worked at their own pace, there was less satisfaction reported by the students.

Some of the responses for online classes being easier included, Student 1 reported: “I really like instructor-paced, online courses and found myself trying to work ahead.” Student 2 claimed: “It gave me a sense of accomplishment. In a lecture class you do not have that ability.” Student 3 suggested: “I think taking social science courses online is by far easier than taking them in a lecture class. First off, I find that I enjoy CCC classes more than I enjoy my school classes because I am able to pick the class I want to take. I am not able to do that with all my school classes. Also, in a lecture class, you are supposed to take notes while the professor is speaking, and I find it hard from experience to be able to copy all of the important things he/she says down. My favorite aspect of this online course was that even though it was instructor-based, I felt like I could do things on my own time. I was never worried about not getting my homework done or my tests completed on time because I knew I had enough time.”

Student 4 reported: “I have taken both a lecture and an online class for my social science classes. I enjoyed taking psychology in class because the assignments were group based. I like the web based class because I can also still do something in the summer without going to school every day. Taking an online web class that has due dates teaches me responsibility and discipline. I like being able to do the test and homework at any given hour.” Student 5 reported: “Easier because I’m not tied to a regular M,W, F or T, Th class schedule. I have a 13 year old and a 56 year old (husband) who take up much of my time, and a father in his 80s who occasionally needs my attention so this flexibility is very helpful to me. But, it may be harder because I have to be very self-disciplined to do the homework regularly and on time. I also have to read much more thoroughly since I do not have the luxury of remembering the material from lecture/class discussions.” Student 6 responded: “Yes, you can work at your own pace, still have contact information to ask teacher or other students. There are less time restraints, which makes them less stressful for me. Do not have to miss class for other engagements or for feeling ill. Can look up information that you do not understand without falling behind in class.”

Student 7 reported: “I believe taking an online class can be easier than being in a classroom depending on the class and how good you are at setting goals and being able to work on your own and be able to keep up with the class. Also, taking the class online helps a person that has to work full-time to support themselves and their families who would otherwise not be able to take the class because they would have to be in the actual classroom at a specific time. Online classes also allow a person to work at a pace that works for them and not at the pace of the class as a whole. This is helpful because one person may need to work on a topic longer than another person to fully understand the concept or a student can work ahead of their classmates because they are faster learner. This is good because it can help prevent a better student from becoming bored and being held back from moving on to accommodate the other students who learn at a slower pace.”

Student 8 responded: “I like lecture classes best but I would prefer a structured online class as a second option. As long as it is structured I think online is easier because you can work from home as long as you have Internet and computer.” Student 9 reported: “I think they are easier for me anyway because I study more and learn the material better.” Student 10 reported: “I believe taking social science courses online was easier for me because I read the chapters, did the worksheets that went with them and did not have to sit for a lecture and listen to it. I also thought it was easier because in lectures some students say it takes longer to understand something so the instructor has to explain it in more detail and that holds the class up and those who do understand have to listen to the instructor explain it to that person.”

It is important to note that these are only a few of the comments students had on whether online classes were easier than lecture classes. One thing the researchers wish to point out when it comes to classes being easier online, is that it had nothing to do with the content of the course. Only one student reported saying online classes are easier because of content versus taking a lecture class. It appeared the student respondents either felt the content they were learning was the same in degree of difficulty as a lecture class or misinterpreted the question. As mentioned above, only (1) one student stated that the content of the class was easier than by lecture.

**Category 2: Harder to take classes online**

Our research definition for “Harder to take classes online” focused on the problematic aspects of taking a social science class online as compared to a lecture class. The students answering that online courses were more difficult represented 28.5% of the responses (46 out of 161), or the second largest category of responses. Many of the responses provided by our rural community college students were similar to those findings in the literature. Students’ primary complaint within this category had to do with technological problems. Another problem that is widely reported in the literature by students taking online classes, but wasn’t found in this study, is that some online classes can be difficult to navigate.

**A. Harder because of technological problems**

Some of our students reported the following difficulties: Student 1: “It can be difficult when going through the material to pick out what are the most important points and where my focus should be.” Student 2 responded: “I think taking social science classes may be just a little harder to take online, because you don’t have the instructor right there if you have any questions; you have to e-mail the instructor your question. Otherwise, I think they’re about the same.” Student 3 reported: “I think taking any class online has a degree of difficulty to them that the classroom doesn’t have.”

**B. Harder because there is no instructor “face-time”**

One high school student, Student 4 reported: “As I am still in high school, I cannot answer according to a college lecture class. However, I do find high school lecture classes easier than an online class. Simply for the fact that problems and questions can easily be cleared up with an actual teacher in front of you. And, I just seem to learn better in a lecture class.” Student 5 responded: “First, you do not have the teacher directing the class, even if it is an instructor-paced class; the instructor is missing and that is the problem. You register for a class with a knowledge base that is limited, and you are expected to learn theories and concepts on your ability to comprehend, for some that may be difficult.” Student 6 responded: “I think online classes are harder, because you are not getting additional information/help from an esteemed professor in a specific area, in which they have studied extensively. Online requires you to e-mail your professor to talk to them and the professor might not always check their e-mail.” Student 7 responded: “I believe they are harder online because I don’t get the professor’s insight about the subject.”

**C. Harder because of the problem of self-motivation & time management**

Other things students reported that made online courses more difficult was not having group projects, less “face time” with the professors, having to be self-motivated to complete a course, scheduling issues around work schedules frustrated some students who preferred a lecture but couldn’t find a course that fulfilled that need. Teaching oneself the course material proved difficult to some as well. Some of the nursing students complained that they preferred lecture but online worked better for them because when they were working ‘in-between’ patients, they
could study for the course. Reading load and assignment load (too many) were reported. For example, Student 8 reported: “It is harder to an extent. Lecture and online courses in comparison, to me, is easier. With online courses, you need to find the time, motivation, and be familiar with how Moodle works in order for your learning to be successful. With lecture courses you need motivation as well, but because you have a set time and date set aside to go to class, it is less hard to forget to do something. It is almost as if you have a friendly reminder every class day to get your assignments done. Also, lecture courses give you the responsibility of having to show up for class. Online courses however can be very beneficial as well. For me time was a problem. Due to my difficult nursing schedule I had to take sociology online, which became the most helpful with getting things done when I had time to do them!! It may be harder, but in the end is better than lecture.”

There were several other comments for this section, however this student, Student 9 reported: “Taking an online class I would say is harder than taking it as a lecture. With lecture classes you are provided with an all-around schedule and you have to go to class where the material is presented to you. With online classes you have to make your own time to read the material and understand it, on top of meeting deadlines for exams and homework. The biggest challenge in my opinion is finding the time to do it all.”

D. Harder because there is more work and the work is rigorous

Some of the students believed there was much more assigned work in their online social science courses than other online courses they were taking. For example, Student 10 reported: “I think that taking online courses is harder because you have to make time for the classes. I also believe that there are more assignments for online classes, rather than lecture classes. Many lecture classes do assignments together, and do not receive homework as a result. Whereas all online courses are done independently and the student taking the course has to keep on schedule and do all the assignments by him/herself.”

Another response from Student 11 mentions: “I think this was slightly harder for me because I benefit from talking things out and then doing things. There were few assignments from the book which is what I am used to. A lot of assignments dealt with applying what we learned from the book into a writing assignment which was sometimes hard.” Student 12 responded: “I believe that taking online classes are harder because you have to make time for the classes. I also believe that there are more assignments in online courses, rather than lecture classes.” Student 13 reported: “As an undergrad I think they are harder because you are asked to think outside of a box that I haven’t yet experienced; you are not in the traditional classroom and the here and now of the conversations; there is a delay of answers to questions. Or, you have moved on to a different topic.”

Category 3: Combination of both easy and hard

Our research definition for “Combination of easy and hard” meant that student respondents found some content of the online social science class easier and some content of the online social science class more difficult. A handful of the student respondents answered this way. Below are some of their responses.

A. Combination because of class attendance and online interaction

Student 1: “There are arguments for both sides of this question. Attending class is the hardest part about a lecture course. In that case, I believe lecture courses are easier because it’s not as hard to keep up with the assignments. This is my first online class and I must say I wasn’t very good at checking what I needed to do on a weekly basis.” Student 2 responded: “I think that the courses are as equally as hard in a way, because you still have to have the time to sit down and read through the material and study. You also have to do the work. But, also, in a way, it is easier because I have a deadline but not having to go to class also makes it easier, because I can do it any time of the day.” Student 3 reported: “Harder in the sense that you do not have someone to tell you all the answers each time you go to class. Easier in that you have a little bit more choice in when you do assignments and when you do the reading for the courses.” Student 4: “I cannot say that it would be any easier or harder, sometimes I think that it is harder to take on your own and not with an in-class instructor, but with my schedule, it makes it easier for me to do on my own time.” Other responses were included below.
B. Combination because of deadlines in both online and lecture courses

Student 5: “Personally, I feel that they are both as equally challenging. The advantage of taking online classes is that yes you have deadlines but you get to go at your own pace a little more. You don’t have to worry about giving the wrong answer aloud where the whole class can hear you—so you save a lot of embarrassment. Also, with online classes, it’s a lot easier to find time to do them, you don’t have the challenge of rushing to class, attendance, or other things.” Student 6 reported: “In some reasons they’re easier. For example, you do homework when you want to rather than when the instructor assigns it. On the other hand, the student is a little more on their own compared to a lecture class which can make it harder.”

C. Combination - tradeoff between family & work time and lack of self-expression

A more in-depth response from Student 7 included: “There are times that I feel that taking social science courses online has its negatives as well as its positives, making the course both easier and harder. With this course being offered online I was able to spend time with my kids, do farm work and continue my education, but it was a challenge because it was not a lecture and easily forgotten or put off for other things. I had to read a lot more because I was not in a lecture class and not interacting with other students, yet our instructor was amazing with organization and returning e-mails with questions quickly. I believe the instructor makes the difference on what one can learn and achieve with an online class for social science. At the beginning it was more difficult due to the new web central and what we had to learn, as well as my site would not work, putting me behind and then running into my other schedule outside of school, but the tech support helped me and the instructor stayed in contact, and I was able to get what I needed finished. I learn faster and understand more with a lecture class, but I learn to be more dedicated and less of a procrastinator with online classes.”

Another in-depth comment by Student 8 included: “I feel they are easier in the sense that you can do online classes anywhere, at any time. But that’s about it. I really missed the person-to-person actual talking contact. Sometimes it’s a lot harder to get what you’re thinking across without sounding rude or presumptuous in other peoples’ answers. You don’t get to have a ‘voice’, and people take things the wrong way when they can’t hear you speaking or see your facial expression. I also am a grammar/punctuation/spelling freak and not so much in this class, but my other online classes, it was hard to try to post and discuss with people when I had no idea what they were trying to say because they couldn’t spell or use correct punctuation. I found that really frustrating. I feel like online classes are easier because for the most part, you can go at your own pace, but the lack of actually talking to people is difficult.”

D. Combination - teaching styles, learning styles, and reading loads

Other related comments included Student 9: “I feel that taking a social science course online is a little of both depending on the individuals’ learning style. I work very good on my own therefore it is easier for me to concentrate and not get distracted as I would with a lecture class.” Student 10 responded: “I think it has pros and cons. The pros would be that you go at your own pace, so if you have a busy or chaotic schedule you can do the work when you have time. The cons would be that sometimes with an online class it can be easy to procrastinate and forget about assignments or due dates. I think taking online classes require a lot of responsibility. Social science courses seem to require a lot of reading, so I think this class was a bit harder for me than a lecture class would be because everything I learn I have to read, where in a lecture the teacher talks about the readings and expands on them.” Student 11 responded: “In a way it’s easier because I am able to do the class in my own time even if it’s at 3 o’clock in the morning. I work full-time evenings and have two young children so the only time I have to study is when they are sleeping. Although it seems harder because sometimes I don’t know exactly what material to go over, or a different way to understand the material.”

Category 4: Depends on instructor teaching the course

Some of the responses from our study under this category were not found in the literature on students’ perceptions of difficulty taking online courses versus taking them as lecture. Here are some of the quotes from students:
Student 1 reports: “I have taken many online classes and lecture courses. Depends on the professor and the class to determine which way is harder. Since we don’t meet up in class once or twice a week, the professor can’t tell how much we’ve learned or if we are even doing the assignments, so they tend to give more assignments.”

Student 2 reports: “I think it depends on how much work they give you or if the class is self-paced. I think lecture would be better because you have a chance to ask questions.”

Student 3 responded: “I think it depends on the person. I’m more of a hands on, in class kind of person and was a bit worried about taking this class online but so far, not so bad. I learn better when taught by someone else instead of reading a book on my own. The review sheets help out a lot.”

Student 4 responded: “I think it depends on the class you are taking. Some are easier and some more difficult.”

Student 5 responded: “I feel that it is all an individual preference actually. Some students will do better in a lecture environment, and some will do better in a web-based or individualized training session. For myself personally, I think the web-based is the way to go as I am able to devote the time that I want to learning via the Internet along with my course materials.”

Student 6 reported: “Some classes. Depends. Each one is different. I find it usually easier because some of the time I don’t follow lecture. I can usually understand it when I read the book and do the notes. Sometimes lecture is a waste of time when it’s just reading from the notes and you can do that yourself at home. You can check your grade. Questions are usually answered faster because the instructor checks the mail more frequently.”

Student 7 states: “I think it depends on the class you are taking. I prefer lecture classes but have no problems taking online classes.”

The literature alludes to instructors being well organized, having a course which is easy to navigate, and managing their courses well by giving feedback to students in a quick manner. However, these data suggest a certain “human element” that some online instructors have and perhaps others don’t have.

Category 5: Same amount of workload in both online and lecture classes

Student 1 reported: “As far as workload, I think they are the same. Taking the class online is easier in terms of being allowed to have a job without taking certain times off for a class. I am allowed to work and do my homework online at night. The flexibility of online classes is better and easier than an actual lecture class.”

Student 2 responded: “Most are pretty much the same I think. I have had one class that was harder but it was in a different area of study.”

Student 3 posited: “Both, I have taken my classes on campus, so I must assume it would be about the same and honestly I believe the classes are easier on campus, because you get the group interaction and you can talk to the teacher for help or whatever you need, whenever you need it.”

Student 4 claimed: “I feel they are equal, although sometimes lecture would be nice to explain things a little clearer.”

Student 5 responded: “I do not believe either class to be easier or harder. I viewed it as if I take it off campus and online, I can spend more time with my family and take the exams at my own pace when the children are in bed. That way, I didn’t miss out on anything.”

Student 6 responded: “I believe it is easier for me just because I don’t have the money to spend on daycare. If I could choose between an online class or a lecture class, I don’t really think either one would be harder or easier than the other.”

Student 7 responded: “It is a draw because when you are in class you can get taught more. When you take it online you have to teach yourself everything. I’m sure they both have their advantages and disadvantages. Taking it online lets me focus on a particular chapter or assignment alone and really focus. But if I were in the actual classroom I would be able to discuss my feelings about the chapter assignment aloud to my fellow students.”

Student 8 responded: “This is my first social science class I have taken this year, but from the previous semester, I think that both web and lecture classes even out for me and I never got behind so I didn’t have problems taking web classes.”

And finally, another student, Student 9 reported: “This could go both ways. I do prefer lecture classes, but with a family and a current job the online classes are by far easier for me to complete. Without the classroom I believe that there could be communication problems due to the lack of personal contact.”

According to the rural community college students at this institution, a few believe that the workload is the same for online class as it is for a lecture class.

Category 6: No Response to the question

Five of the respondents out of 161 did not answer the question.
Category 7: Never Taken a Lecture Class

There were six students who said they had never had a college lecture class, therefore they could not appropriately answer the question. However, four of the six students who answered this way offered hypothetical answers, and their data is below.

*Student 1* reported: “I have never taken a college level lecture class, but I think that this class would be easier, because I can work at my own speed and get things done on my own time and when I have time instead of having to have a class I have to go to.” *Student 2* responded: “I have never taken a college lecture class, but I am taking high school classes, and I personally like to have a teacher up in front speaking to you. I feel I have more of a personal relationship with the teacher/professor so you aren’t quite as timid towards them.” *Student 3* responded: “I haven’t taken a social science course as a lecture course before so I cannot compare the two. In my opinion, it would probably be easier to take the course as a lecture class.” *Student 4* responded: “I haven’t taken them in a lecture class so I can’t say. But judging from high school classes I would prefer a class rather than online. I think you can get more out of a classroom rather than online.” And, finally, another student, *Student 5* responded: “Never took them as a lecture class but I enjoyed taking them online.”

Both the studies in the literature and our study suggests those who have never taken a college class as a lecture or online before, tend to be more timid when it comes to registering for online courses. Another item that needs to be pointed out is that these students didn’t perceive the online course(s) to be too easy. Also, many of the students still preferred a lecture course over online classes.

Category 8: Never Taken an Online Course

There were only two students who responded this way to this question. *Student 1* responded: “I have never taken an online course before until this class, so I can’t compare it to a lecture class. I’m sure it is harder taking it online because I do not get the interaction with other students or the instructor like I would in a lecture class.” And, *Student 2* responded: “This is my first semester and I have only taken online classes, no lecture classes. So far, for me taking them online seems to be working for me and they don’t seem to be very stressful. When you take classes online you always have your materials with you, you never have to worry about if you may have forgot something.”

These were obviously students who were in their first semester of taking classes, specifically classes online, so their experiences will be different than others who have taken classes online for more than a semester.

Limitations of our study

There were numerous limitations to our case study. First, we only focused on one community college in the rural Midwest. Our study could have been strengthened by examining other community colleges not only in the state of Nebraska, but other community colleges in the Midwest, or provided a sampling of other rural community colleges from different regions of the United States.

Second, there was also gender bias in the study. Women predominantly were the ones willing to participate in the study. Future studies conducted by the researchers will have to make more aggressive attempts to get more male students taking online courses in the social sciences to participate in the study.

Third, racial bias is present in the study as well. A disproportionate number of the respondents were Whites, with only a few Hispanics, African Americans, Asian and Pacific Islanders, and Native Americans represented.

Another limitation was the number of respondents in our case study. Only 161 participants were willing to complete the survey over a three year time period. Lastly, another item that would’ve further strengthened our study would be more of a variety of social science courses being incorporated into the study. It must be noted that permission was not granted by this college to examine more than three social science courses to be used for this study.

Conclusion

As mentioned earlier in the paper, the literature is scant on rural community college students’ perceptions of whether or not online classes are more difficult to take versus taking them as a lecture course. This case study went beyond that aspect of the literature, into an area that has not yet been
explored. This study asks rural community college students whether or not social science courses are more difficult to take online versus being taken as a lecture course.

We wanted to find the answer to this question for several reasons. First, after conducting an exhaustive review of the literature, the researchers could not identify any prior existing research pertaining to this topic. Second, social science courses tend to be abstract in many ways when it comes to studying individual and group behavior. Third, when studying human behavior, even in a lecture course where there is an instructor present, oftentimes students have a difficult time learning new concepts and applying learned theories to explain social behavior. Finally, the researchers of this paper were aware of this and wanted to discover if students had a more difficult time studying human behavioral courses in an online course versus taking them as a lecture.

What we concluded in our case study was that our community college students have their own unique needs, wants, fears of taking an online class, and perspectives in the online social science courses. Our rural students’ needs at our community college may be different from the needs of students attending a community college in a suburban or urban area. This study divided up the responses of 161 rural community college students’ feelings to a question related to perceptions of difficulty in taking online social science classes. While very similar to what other studies in the literature have discovered, our study found our students had other concerns they were dealing with such as still being in high school, being new to an online class, and single-parent families, especially single mothers who had issues such as daycare, custody, visitation with the other biological parent, work, and perhaps even multiple part-time jobs to worry about.

Yet there were a couple of other unique concerns our rural community college students, both traditional and nontraditional dealt with on a regular basis. First, was work related to farming and agricultural schedules. For example, several of the students in the study who worked in the field of agriculture explained that they had to wait and take their online classes in the summer because they had more time to work on them. Some students also felt as though they could get through the course better on their own.

Another barrier our community college students have experienced is a lack of access to high speed Internet and higher amounts of broadband in the rural areas of central Nebraska. As of April 2013, as this paper is being submitted for publication, one of Nebraska’s Senators, Debra Fischer, along with Minnesota Senator Al Franken successfully passed the Fischer-Franken Amendment on March 23rd, 2013. This amendment, proposed to Congress, will allow more Nebraskans living in rural areas of the state to have access to more broadband service and high speed Internet. It will do the same for all people living in the rural areas of the United States as well (March 23, 2013).

In conclusion, this study is the second and final part of an ongoing study of rural community college students in the state of Nebraska. The purpose of the two studies has been to shed light on the unique issues rural community college students in our state are facing. Each community college around the United States has its own set of unique needs. Smith and Ayers (2006) state: “Community colleges, specifically instructors and administrators, should reflect critically upon educational practices that accommodate the diverse needs of learners from various backgrounds” (p. 405). However, Hyllegard, Deng, and Hunter (2008) warn: “While community colleges have embraced online education as a way to enhance the educational options for their current students and to attract new ones, they need to be especially mindful of the potential for academically at-risk students to gravitate to online courses in the hope that they will persevere in a different learning environment” (p. 433). This statement couldn’t be more true since only 30% of community college students are graduating within a three year period (TIME, October 29, 2012).
References


Results of Study

- Easier 45%
- Harder 29%
- Both easier & harder 8%
- No online course 1%
- No lecture course 4%
- Same amount work 6%
- Depends on teacher 4%
- N/a 3%
- 0%
California Teacher Credential Programs at the Crossroads

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California faces a teacher shortage. The state's anticipated retirements over the next ten years, teacher attrition through layoffs, and a break in the supply line from teacher preparation universities are major factors contributing to a projected shortage of teachers in the state. After a lull in the past five years, student enrollments in California are predicted to grow, creating a mismatch between supply and demand for teachers. Ironically, most of the public’s attention in recent years has been drawn not to a potential shortage of teachers, but rather to threats of school funding cuts and layoffs of ten thousand K-12 teachers in California due to the state's budget crisis. With all the attention centered on the golden state’s budget crisis, the issue of a future teacher shortage and the need for a talented, homegrown California labor-pool has been easy to overlook.

Some would say that a projected shortage of teachers is largely imagined. Certainly, this was the case the last time teacher shortages were predicted. In the previous two decades, school districts were able to address increased enrollment and predictions of teacher shortages by tapping into an increased supply of new teachers from universities. While there were genuine shortages of teachers in some places, they tended to exist in certain rural and urban situations. And of course, the supply of good math, science and special education teachers has been limited quite some time. The new demographic trends and comparisons of what will be needed to address the challenges presented in fully employing the new California labor-force places California at a unique crossroad—failure to plug the children of immigrants into the skilled labor force will mean a surplus of unskilled workers that the state can ill afford. Rather than pose this as a conflict between the younger, ethnically diverse, and largely California-native population against the older white, non-California-native generation of Californians, a well-trained transformation of teacher training programs, properly focused, could lead California’s information based technological infrastructure to grow its own talent pool, and lessen its dependence on the importation of talent—as in the past. In fact, the failure to seize this golden opportunity will create divisions between a growing pool of unskilled labor that will be unsustainable.

Steady Teacher Attrition

The Center for the Future of Teaching and Learning (CFTL) collaborated with the California State University and University of California to prepare a report, California's Teaching Force 2010: Key Issues and Trends (CFTL, 2010). The report highlights these facts that point to a looming teacher shortage:

- Currently, one-third of the K-12 teacher workforce is over fifty years of age, translating into about a third of teachers on track for retirement over the next decade.
- The number of new teachers hired has dropped 50 percent since 2007.
- The number of enrollees in teacher preparation colleges dropped from 75,000 in 2001-2002 to only 45,000 in 2007-2008.
- The number of teaching credentials issued has declined just over 40 percent since 2003-2004.

In addition, the report notes that whereas student K-12 enrollment had decreased in recent years, it is projected to grow by more than 200,000 by 2025. Also, there has been a steady attrition of teachers in the state.

Many teachers have left the profession after being laid off during the fiscal crisis—26,000 as of April 2010. Roughly 40 percent of teachers provided with statutorily required layoff notices in the spring of 2010 in California did not get their jobs back by the first day of the new school year. Others have left the
profession because of dissatisfaction with teaching in general, reduced compensation due to salary reductions or furlough days, or a decrease in monetary support for supplies and textbooks.

**Attrition Rates Reflect a National Trend**

In the past new teachers from the supply pipeline of other states have always been sufficient to replace retiring teachers in California. School districts could also draw from a reserve pool of teachers to plug gaps. This reserve pool traditionally has consisted of teachers who have left the profession, to raise families in some cases, or who obtained teaching credentials but did not seek positions right away. It is estimated that roughly 50 percent of newly qualified teachers do not enter the profession upon graduation. This reserve pool has been depleted, not augmented, by layoffs as teachers and prospective students give up on the profession as a result of the harrowing nature of layoffs and a sense of abandonment by the education establishment.

The morale of California's teachers is at an all-time low, being fueled by increased demands for improved achievement for all students, along with reduced resources and instability caused by the fiscal crisis that grips the state of California. It is no wonder that teaching has become a less attractive profession for new college graduates.

The retirement rate has remained steady at about 2 percent of teachers since the 1960s. California has been able to manage a 10 percent attrition rate (consisting of 8 percent leavers and 2 percent retirees) by relying on a steady supply provided by universities and the reserve labor pool of former teachers. But the rate of attrition is starting to trend higher, as the new hires are typically in districts with already higher than average turnover rates. Perhaps the warning from California that the supply line of new teachers is disrupted merits further investigation. It might not be as easy as it has been in the past to churn out new teachers from the universities, as higher education too has been hit by the financial downturn. It is also important to note that the National Center for Educational Statistics (NCES) predicts record student enrollment every year, starting in 2015 until at least 2025 for the US as a whole. So, the traditional pipeline from the rest of the US to California may be drying up.

It would seem that school districts should at least position themselves for a potential shortage once the economy starts to improve. It is time to rebuild relationships with universities in order to attract student teachers and interns. It would be wise to harness the full power of the Internet, perhaps including social networks, to reach out to the newest generation of potential teachers. Most importantly, it is prudent to retain the teachers you have by providing support and mentorship during these challenging times. This will have a positive impact on student learning and will shave costs in staff development overall as schools keep well-trained and highly qualified teachers in the classroom.

The cornerstone of the golden state has been a well-educated citizenry, on the technological forefront, capable of making rational and informed decisions about its future direction. To accomplish this goal, providing a high-quality teacher for every classroom and effective educational leadership in our public school systems is imperative. Around the world, there is growing recognition that expert teachers and leaders are the most significant drivers of improved student learning. Nations possessing the highest student achievement make substantial investments in teacher quality. A McKinsey study of 25 of the world’s school systems, including 10 of the top performers, found that investments in teachers and teaching are central to improving student outcomes. That study finds that the top school systems emphasize three interrelated components:

1. Getting the right people to become teachers
2. Developing them into effective instructors
3. Ensuring that the system is able to deliver the best possible instruction for every child (Barber, M., & Mourshed, M., 2007).

Nations that currently lead the world in international rankings of student achievement, such as Finland, South Korea and Singapore, attribute their success to substantial investments in teacher preparation. In these top-ranked nations, critical initiatives have taken the form of:

1. Universal high-quality teacher education, completely at government expense including a living stipend. In nations like Finland, this preparation includes at least one year of practice teaching in a model school connected to a university.
2. Mentoring for all beginners in their first years of teaching from expert teachers, coupled with a reduced teaching load and shared planning time.

3. Ongoing professional learning embedded in 15 to 25 hours a week of planning and collaboration time at school, plus an additional two to four weeks of professional learning time to attend institutes and seminars, visit other schools and classrooms, conduct action research and lesson studies and participate in school retreats.

4. Teacher leadership opportunities for expert teachers to be engaged in leading curriculum development, professional development and mentoring/coaching, and for some to be recruited and trained as principals or other school administrators in high-quality programs, also at state expense.

5. Equitable, competitive salaries, accompanied by additional stipends offered at hard-to-staff schools, which are comparable to other professions, such as engineering and computer science (Darling-Hammond, 2010).

By comparison, United States federal and California state investments in teacher quality are paltry – having declined substantially since the 1970s – and they are highly unequal. What follows, by contrast, is a summary of the general circumstances (for each of the 5 strategic inputs impacting teacher quality listed above) in California:

1. There are a wide variety of public and private teacher training institutions, with the majority of students enrolled in teacher training being funneled through private, “for-profit” training institutions. As a result teacher education programs in California are uneven in duration and vary widely in quality. While some educators receive excellent preparation, others receive much less in terms of both quality and quantity of coursework and clinical training before they teach or step into classrooms. Most teachers receive little financial support to prepare for an occupation that will pay them a below-market wage, and the state invests little in preparation institutions. Hence, the quality of preparation depends in part on what candidates can afford to spend and what universities are willing and able to invest. Leadership education is even more uneven in quality. In California, principals may skip preparation altogether by taking a paper-and-pencil test for a license – the only state in the nation to allow this. The least prepared teachers and school principals are typically assigned to the highest need students and schools.

2. Mentoring for beginning teachers is decreasing. California once led the nation in the design and funding of beginning teacher induction through the Beginning Teacher Support and Assessment (BTSA) program. Its early successes demonstrated that attrition can be reduced and competence increased for novices who receive skillful mentoring in their first years in the classroom. However, these funds are no longer protected for this mission. As a result, fewer and fewer teachers receive the benefits of high-quality mentoring in California. Novice school teachers rarely receive mentoring in California, unlike states that have developed policies to provide it.

3. Professional development time and opportunities are sorely underfunded. The 10 days per year that California once funded for professional development time have long since disappeared, and most state programs supporting professional learning for teachers and administrators have taken deep cuts over the last decade; many have disappeared altogether. California teachers, like those nationally, have little time for professional collaboration or learning – usually only about three to five hours per week of individual planning time, much less than that available to teachers in other countries for joint planning allowing them to share practices and learn from each other. School teachers typically have even fewer opportunities for ongoing professional learning.

4. Evaluation is frequently spotty and rarely designed to give teachers or administrators the feedback and support that would help them improve or provide a fair and focused way to make personnel decisions. Leadership pathways are, in most districts, poorly defined and poorly supported. There are relatively few opportunities for expert teachers to share practices with their peers or to take on leadership roles. Most teachers are still isolated from each other, teaching in egg-crate classrooms and performing the same functions after 30 years as they did when they first entered. A teaching profession has not yet evolved that regularly supports the spread of expertise.
or enhanced compensation. Pathways to the school administration and other career options for expert teachers with leadership potential are not well-established at the state or district level. Additionally, pathways from school staff and teacher’s aid positions into the teaching profession have disappeared as budget cuts have eliminated positions for teacher aides, let alone support for a career ladder.

5. Salaries are highly inequitable, with those in the wealthiest districts paid considerably more and supported with better working conditions. This leads to a highly variable teaching force, with the poorest children, with the greatest learning needs typically receiving the least-experienced and least-prepared teachers. In California, at least three separate lawsuits have pointed to the problems associated with the large-scale assignment of inexperienced and underprepared teachers to minority and low-income students.

While California has some very well-prepared and supported teachers and principals, especially in the wealthiest districts, many others are underprepared and under-supported, especially in schools serving low-income students, and California’s high proportion of English Language Learners (ELLs). Indeed, expert teachers are the most unequally distributed school resource.

Furthermore, the knowledge teachers need to reach all students in today’s schools has increased considerably. Teachers not only need deep and flexible knowledge of the content areas they teach, they also need to know how children learn at different stages so they can build a productive curriculum that will build on students’ prior knowledge and experiences; how to adapt instruction for the needs of English language learners (ELLs) and students with special needs; how to assess learning continuously so they can diagnose students’ needs and respond with effective teaching strategies; and how to work collectively with parents and colleagues to build strong school programs (California Department of Education, 2012).

California has a vibrant, diverse student population that represents families who have had roots in the Golden State for centuries and others who have more recently arrived from virtually every nation on the globe. With high rates of immigration, California has the highest proportion of English language learners (ELLs) in the country. It is the success or failure to reach the ELLs that contributes to a claim that California teacher education is at a critical crossroad—a choice needs to be made for the future progress of the golden state that cannot be ignored.

Approximately 24 percent of California’s students are ELLs who are not yet proficient in English, and an additional 12 percent are former English learners (known as Reclassified/Re-Designated Fluent English Proficient or RFEP) who need educational supports to improve their English proficiency as they progress through school (Oakes, 2003). As a rough gage, this means that, on average, about 40 percent of California’s education gap can be attributed to the failure to meet the needs of the ELL student population and how teachers are trained to address the wider issue of the economic integration of the first and second generation children of immigrants in California.

California is the number one destination of foreign immigrants to the United States. Many immigrant families come from poor countries with few educational or economic resources. Most students in California schools (53 percent) come from low-income families. Schools with concentrations of minority and low-income students are among the most under-resourced in the state, with fewer dollars, curriculum resources and well-qualified teachers than others, although the needs they confront are greater (Oakes, 2003).

**California at a Demographic Crossroad**

First-generation immigrants account for 25 percent of California youth. An additional 25 percent of California youth (age 13 to 24) are the second-generation children of immigrants. Adding these generations means that half of all California youth are foreign-born, or are California natives with at least one foreign-born parent. The size of the Mexican-American youth segment of the state’s population is now so large as to constitute either a stumbling block, or a vital building block for the foundation of a brighter future for California. The goal of dealing with immigrant children is commensurate with the goal of building a better future for all Californians. This paper shows that the children of immigrants are a key resource as they become more settled (through the second and third generation). Indeed, the ethnic
and age composition of California has changed dramatically. For example, California has transitioned from 82 percent White in 1960 to 40 percent White in 2010. The Hispanic or Latino ethnic group share in 2010 was 38 percent and will likely become the largest ethnic group in California by the next decennial census in 2020. (U.S. Census, 2010)

Over half of California’s immigrants are from Mexico and Latin American. In connecting the aging and retirement of California’s Baby Boomers to the educational attainment of the children of these Mexican immigrants, this paper aims to demonstrate why high-quality education of these immigrants is necessitated as a direct result of new demographic shifts taking place over the next two decades. Some pundits portray immigration as out of control and accelerating. They take a negative view and assert that immigrants are not assimilating and that they are not needed, or wanted. Like previous waves of immigrants to California, the newcomers and their children face discrimination, along with social and legal barriers to a better future. This paper will support a more positive view and side with a growing group of U.S. citizens who support immigrants’ rights and support a renewed commitment to the educational success of the children of immigrants as part of the changing demographic composition of California and the rest of the United States.

California’s immigrant population has increased rapidly in recent decades. Between 1970 and 2010, the number of California residents born abroad increased more than fivefold, from 1.8 million to almost 10 million. Many of these foreign-born residents, also known as immigrants, have become naturalized U.S. citizens (46%). California has a higher proportion of immigrants than any other state. The percent of the state’s population that is foreign-born has steadily grown over the past few decades, and is currently at its highest level over the past century. (U.S. Census, 2010)

California has a much higher share of immigrants in its population than the United States as a whole (27% vs. 13%), and a higher population share than any other state (New York, with 21%, has the second-highest share). While many states are receiving rapidly increasing shares of Mexican immigrants, California remains the number one destination for immigrants entering the United States. California is home to one in four of the nation’s immigrants, compared to only one in ten of the nation’s U.S.-born population. Nearly half of all Californians today are first- or second-generation immigrants. As that share of the California population continues to grow, it is increasingly important to understand the significance of intergenerational progress for immigrant groups.

The vast majority of California’s immigrants (90%) are from Latin America (55%) or Asia (35%). California has sizeable populations of immigrants from dozens of countries. The leading countries of origin are Mexico (4.3 million), the Philippines (783,000), and China (681,000). California Counties with the highest percentages of foreign born immigrants are Santa Clara (36%), Los Angeles (36%), and San Francisco (34%). Most immigrants in California are working-age adults. Three of every four immigrants in California are between the ages of 25 and 64 (working-age), compared to less than half (45%) of U.S.-born residents in the state. Immigrants are 40 percent of the state’s population between the ages of 25 and 44.

Between 2000 and 2010, international migration accounted for 1.8 million new residents in California, compared to 2.9 million due to natural increase (more births than deaths). So, the children of immigrants are concentrated in the younger cohorts. This coincides with the entry of the baby boomers (U.S. natives born between 1946 and 1964) into the old-age dependency group. It is this older group that will increasingly see its economic welfare tied to the productiveness and creativity of the first and second generation children of foreign-born immigrants in California. In fact, Latinos already are the largest plurality of children (ages 13 to 24) in California at 41 percent, as compared to Whites at 37 percent, Asians at 11 percent and African Americans at 7 percent. Statewide, 80% of children, ages 5-17, in immigrant families speak a language other than English at home; nearly three-fourths are fluent in two languages. Across the state, Spanish, Vietnamese and Mandarin-Chinese are the most common non-English languages spoken at home. Latinos are the largest racial and ethnic group among youth and more than half have a foreign-born parent. (U.S. Census: American Community Survey, 2009)

The challenge in California involves constructing the teacher pipeline that will be responsive to the ethnic transition consisting of two distinct trends. The first trend is the growth in the proportion of the
working-age population consisting (to a large extent) of the children of Mexican immigrants. The second trend is the aging of the California Baby Boomers, whose exit from working-age to the old-age dependency will cause accelerated financial strains on private pension funds, Medicare and Social Security entitlement spending. This older, mostly White cohort will increasingly see its economic welfare tied to the productiveness and creativity of the first and second generation children of foreign-born, mostly Latino immigrants in California.

California should recognize the need to promote a renewed commitment to educational success of this fourth wave of Mexican-American immigrants. Because a large number of these immigrant parents have limited education, lack of improvement in educational attainment from one generation to the next would have serious implications for the state economically as well as socially. Unlike a good portion of Asian children of immigrants, 30 percent of California’s children of immigrants of Mexican ancestry are growing up in families where neither parent has completed high school, and as many as 95 percent of these children never achieve a bachelor’s degree. Among these children at risk of low educational achievement, Mexican Americans make up a large share (68%). Many Mexican-American youth experience academic struggle and leave schools without acquiring the skills necessary to compete in the U.S. knowledge intensive society. This group has the highest high school drop-out rate, the lowest college attendance rates, and may live at or below the poverty level caused by labor exploitation in the lowest echelons of the service sector economy of large central cities.

In California the share of Whites with a bachelor’s degree is 37 percent, Blacks with a bachelor’s degree is 18 percent, and among Asians the figure is 45 percent. In stark comparison, this percentage for Latinos shows only 8 percent with a bachelor’s degree. A practical overall strategy would be to increase generational investment in education to provide replacement workers from homegrown Mexican-American children of immigrants. This would accommodate needed expansion in the middle class. Only if California acknowledges the problem and provides the policies and educational resources necessary will California’s immigrants and their children help to fill these jobs and support the rising number of seniors economically. Improving educational achievement for Mexican-American children is tied to the fact that 1.4 million children in California live with adults who don’t speak English. Children of non-English-speaking parents do worse in school and are more likely to drop out. One-quarter of California’s students have yet to master English. While learning a new language, English Learners (ELs) have less time and ability in school to devote to learning other academic subjects or befriending English-speaking classmates. As a result, ELL students are at risk for poorer academic performance and isolation from their peers. English Language Learners from Mexican-American households are less likely to meet California’s Academic Achievement Standards. Mexican American children of immigrants are more likely to grow up in linguistically-isolated households and they are less likely to speak English well themselves, which translates to more time spent mastering English skills in school, limiting their capacity to learn other subjects. Statewide, only 42% of second- through 11th-graders meet state proficiency targets in English Language Arts. English Learners fare even worse than their peers.

By contrast, Students who meet the state’s academic proficiency standards on the California Standards Test have achieved basic educational goals, and are more likely to graduate, and are better prepared to participate fully in school and to make informed choices about their futures. Rather than visualizing the benefits that various immigrant groups could bring to their schools, much of the general public's impression of immigrants is negative — that they are a burden on California’s public schools. To the contrary, dual language children of Mexican immigrants, who have been redesignated as fluent in English, perform better than students whose primary language is English. (Garcia, 2010, p. 6)

Intergenerational progress has not stalled, but rather, some second- and third-generation immigrants have made substantial educational progress when compared with their parents. However, the low educational attainment of Mexican Americans remains as an overall concern. The challenge of dealing with low educational progress underscores the need for a renewed commitment to restore public investment in education, specifically targeting California’s Mexican- American youth. The immigrant education issue does not receive much attention. Other problems seem to be more important. However, neglecting California’s knowledge- intensive industries is not a wise strategy. Innovation in a variety of
technical areas has been a by-product of a well-designed education system and a solid higher education system.

In this section of the paper it should become evident that California holds a real advantage over other parts of the U.S. in knowledge-intensive industries such as computer software design, and industrial research and development (R&D) outlays. The Bureau of Labor Statistics predicts that 40 percent of California jobs will require at least a college degree in 2025. Industrial Research and Development (R&D) in California totaled $50.6 billion, which represents almost 25 percent of the national total. This amount is twice its population share. No other state receives more R&D funding. No other state receives more foreign direct investment. Attending to the educational pipeline problem for the fourth wave as it settles in California is vital to sustaining the “knowledge-based” economy that has been the key to California’s economic success. The UC Technology Transfer Program is first among U.S. universities, both in terms of the number of patents granted and in the number of successfully commercialized inventions — more than 1,000 inventions a year. The state has 40 federal laboratories – more than any other state. Three out of the ten NASA centers are located in California – again, more than any other state. In respected global rankings of universities, the University of California (UC) system supplies at least 10% of the top 50 institutions worldwide. In Academic Rankings, seven of the UC’s 10 campuses rank in the top 50. In Britain's Times Higher Education World University Rankings, the UC system has five campuses in the top 50. This is an extraordinary achievement for a publicly financed system of higher education. Furthermore, the graduates who are educated in the California system of higher education go on to push the frontiers of technology, amassing a percentage of research and development (R&D) expenditures which is twice as large as California’s share of the total U.S. population. (Baldwin, 2011)

Public schools (K-12), Community Colleges (where the greatest share of Mexican-American students attend), the California State University and University of California have all seen huge budget cuts, and face the prospect of crippling cut backs. This short sighted lack of vision is eroding a world-class education system that has taken half a century of care and investment to bring to magnificence. The reason for the lack of urgency about addressing the demographic transition is in large part, due to several myths about Mexican-American immigrants and their second and third generation offspring. It is important to expose five myths about immigration, as noted by Meyers (2007). For this reason there exist no cohesive set of Common Core Standards and assessment tools for English Language Learners in California schools. Progress toward prioritizing teacher training for all ELL students in accordance with the new Common Core requirements would be more likely if the public were to critically examine the following five misconceptions concerning the Mexican immigrants:

1. Immigration is accelerating and out of control.
2. Immigrants are all newcomers.
3. Immigrants groups are unchanging over time, and Mexican-Americans, in particular, are segregated and poor.
4. Immigrants are foreigners and so are their children.
5. Immigrants are a burden and not needed; and the corollary, that we do not need teachers who are trained to deal with the ELL student population in the many segregated, low-income areas of California where they comprise at least 50 percent of the elementary school enrollments. Again, these immigrants and their children are becoming an unwanted, excess burden.

Although California is still the leading U.S. destination of foreign immigrants, its dominance has declined. The number of immigrants has begun to level off in California and it has been slowing in most other states as well. Immigration had been accelerating up until about 2000, feeding the alarmists view that the U.S. has a porous border with ever greater numbers of “illegal” Mexican immigrants coming every year. Yet, between 2008 and 2010, California received 17% of the immigrants arriving in the United States. In contrast, between 1985 and 1990 California received 31% of the nation’s immigrants. Immigrant job prospects are better in other parts of the U.S. because the recession has hit California especially hard and immigrants know that housing costs are lower in other states.
As immigration slows and levels out, along with the tendency of Mexican-Americans to stay planted in California, the percentage of native Californians increases for all age groups. The new trend has already hit as California has more outmigration, than it has in-migration—an acute switch from the past when California was an economic magnet both inside and outside the US. This is important because it means that California will be relying less on importing talent. This rise of a homegrown, native population implies that California will be more self-reliant, educating its own children to produce an educated workforce than was true in past decades. (Meyers, 2007)

In other parts of the U.S. where Mexican immigrants are relatively new, immigrants can accurately be characterized as newcomers and they are less assimilated. However, in locales where immigrants are longer settled, such as California, they have achieved much greater socioeconomic advancement. Meyers (2007, p. 15) finds that in “California the share of Latino immigrants who are homeowners rises from 16.4 percent of those who have been in the United States for less than 10 years to 64.6 percent of those who have been here for 30 years or more. Similarly, English proficiency more than doubles from 33.4 percent of those who have been in the country for less than 10 years to 73.5 percent of those who have been here for 30 years or more.”

Failure to examine how much immigrants typically advance over time leads to the false conclusion that they are trapped in poverty and impose an economic burden on society. Moreover, U.S. society is itself changing, and the aging of the Baby Boom generation will create growing demands for younger workers. The ratio of seniors (age 65 and older) to working-age adults (25 to 64) will soar by 67 percent between 2010 and 2030. The rapid rise in the senior ratio will precipitate not only fiscal crises in the Social Security and Medicare systems, but workforce losses due to mass retirements that will drive labor-force growth perilously low. Immigrants and their children will help to fill these jobs and support the rising number of seniors economically. At the same time, immigrant homebuyers are also crucial in buying homes from the increasing number of older Americans. Immigrants will clearly be important in leading us out of the current housing downturn.

For many states immigration is a new occurrence. Most immigrants are newcomers and are therefore less educated. In California, by contrast, immigrants are longer settled. Many Mexican-American immigrants and their families have achieved much greater socioeconomic advancement. In California, immigrants are entrepreneurial and are more likely to create their own jobs (or be self-employed) than native born workers. For the working age population (age 25 to 64) Latino and Asian immigrants together have a self-employment rate of 12%, which is one and a half times the rate for non-immigrant Latinos and Asians. Immigrants stand out as some of California’s most notable entrepreneurs—technology giants Google, Sun Microsystems, eBay and Yahoo! are all companies founded or co-founded by immigrants (Meyers, 2007). Immigrants comprise more than one-third of California’s labor force (34%). They figure prominently in the agriculture, manufacturing, and repair and personal service industries. In terms of occupations, immigrants make up the majority of those involved in farming, fishing, and forestry (82%), grounds cleaning and maintenance (63%), and production jobs (54%).

Within this context, expectations for learning are rising. Like most states in the nation, California has adopted the Common Core State Standards (CCSS) and is participating in the development of new science standards (Next Generation Science Standards) and an ambitious new assessment system, SMARTER Balanced Assessment Consortium (SBAC). The Common Core standards emphasize higher-level skills and abilities not emphasized in the previous generation of California standards, including more emphasis on writing, research and the use of evidence, careful reading of complex texts, complex problem-solving, reasoning, data management and communication. The CCSS are also interdisciplinary, stressing the use of language and mathematics skills in content disciplines, such as science, history/social studies and the arts. These changes in standards and assessment will require major changes in curriculum and instruction for ELLs, and so far there has been no commensurate effort (aside from proposals on the margin) to take up the challenge of preparing ELLs by modifying and professionalizing teacher training programs to meet the future needs of California’s increasingly information-based economy.
The critical need for appropriate investments in teacher training and credentialing should be evident. Those who have worked to improve schools have found that every aspect of school reform – the creation of more challenging curriculum, the use of more thoughtful assessments, the creation of new model schools and programs – depends on highly-skilled educators who are well supported in healthy school organizations. In the final analysis, there are no policies that can improve schools if the people in them are not armed with the knowledge and skills they need. It is a tremendously difficult time to entertain the notion of becoming a teacher in California. In the midst of drastic budget cuts to K-12 education, schools have endured increased class sizes, educator layoffs, a reduction in instructional days and a loss of much needed professional development funding. All of these challenges have a direct impact on students’ education and learning as they affect the recruitment, retention and effectiveness of the educators who seek to serve them.

Along with budget cuts, the size of the K-12 teaching force in California has sharply declined since 2007-2008, while the number of students is now on the increase and projected to grow steadily over the next decade. As mentioned earlier, there are fewer teachers in the teacher credentialing pipeline, and fewer resources, still, for professional development and training attuned to the critical needs of the ELL population. As Harvard researcher Richard Elmore (2003) argues, “…with little or no investment in needed capacity, low-performing schools get worse relative to high-performing schools. …You can’t improve a school’s performance or the performance of any teacher or student in it, without increasing the investment in teachers’ knowledge, pedagogical skills and understanding of students. This work can be influenced by an external accountability system, but it cannot be done by that system.” (Elmore, p.12) Thus, the current political emphasis on accountability is misplaced—in short, it is the wrong educational priority. Prominent educational researcher Michael Fullan also makes a compelling case that accountability, by itself, is the wrong driver to lead reform. “Higher, clearer standards, combined with correlated assessments (like the Common Core) are essential along the way, but they are not going to drive the system forward. Whole system success requires the commitment that comes from intrinsic motivation and improved technical competencies of groups of educators working together purposefully and relentlessly.” Fullan asserts, “No system in the world has ever achieved whole system reform by leading with accountability,” (Fullan, p. 2). On the other hand, an emphasis on increasing the resources for appropriate training programs and professional development along the lines detailed in this paper can put the golden state at the forefront of educational reform needed to prepare students to plug into the increasingly professional, technical and information driven economy of the 21st century.
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Hate and extremism is once again at the forefront of our society. The Southern Poverty Law Center (SPLC) counted 1,018 hate groups in 2011. This connotes a growth in these groups, especially the antigovernment “Patriot” movement. This movement views the federal government as their primary enemy. The movement is fueled by bank and auto bailouts, declining economy and widespread unemployment.

In 2011, two Patriot groups had created major terrorist plans aimed at police and others—a plot to kill Alaskan state troopers and a judge (Alaska Peacemakers Militia) and a plot by members of a Georgia militia who were planning to assassinate public officials, bomb federal buildings and do mass murder in four U.S. cities by throwing ricin dust from the windows of cars.

Adding to the hate groups’ rapid increase is the issue of non-white immigration. Among these hate groups are the: anti-gay groups, Christian Identity groups, Ku Klux Klan groups, Neo-Confederate groups, Neo-Nazi groups, Racist Skinhead groups, White Nationalist groups, Sovereign Citizens groups and “Nativist Extremist” groups.

The latter groups (Nativist Extremists) are those who go further than lobbying and other political activities to restrict immigration. They harass and confront individuals they suspect are undocumented immigrants.

“We the People hereby declare…our sovereign rights as Citizens under the Declaration of Independence, the American law, the Constitution of the United States of America, and shall accept no other law before thee…We the People hereby declare our sovereign rights to govern ourselves as a community of leaders, of men and women equal under a higher law…our sovereign rights to privacy from the invasion of government or bureaucracies, the rights of association, of assembling, of speaking freely, the rights enjoyed by all free men and women of culture, whether aristocratic or of humble means, the rights of We the People forever guaranteed under Law…”-Exert from the Global Sovereign’s Handbook

The movement under study is the Sovereign Citizens. Sovereign Citizens represent a fairly new phenomenon for the Department of Homeland Security, all law enforcement agencies and, certainly, the citizens of the U.S. Considered to be in the category of violent extremism (Department of Homeland Security, 2012), these individuals and groups somewhat defy adequate definition. What has been offered is first the concept of radicalism:

…the process through which an individual changes from a non-violent belief system to a belief system that includes the willingness to actively advocate, facilitate or use violence as a method to effect societal or political change (Personal communication. 2012).

This paper further defines the Sovereign Citizens Movement based on their illegal actions and the threats they pose, especially to law enforcement and other public institutions. As foreclosures have multiplied, few neighborhoods may be safe from the entry of these individuals—without legal rights. This movement endangers the future of many communities, especially large metropolitan areas.
This is considered the most serious adult group in this Patriot movement and the largest threat to law
enforcement in the U.S. currently. This movement is growing fast. Most Sovereigns are not violent, but
when pressured, some will react with rage, frustration and, in extreme cases, deadly violence.

This is what occurred on May 20, 2010 in West Memphis, Arkansas. Two police officers, assigned to
a drug interdiction team, stopped a white minivan with unusual Ohio license plates.

Jerry Kane, 45, got out of the minivan and stood in front of the police SUV, arguing. Kane’s 16 year
old son remained in the vehicle. The father pushed one officer into a ditch at which time, the son jumped
from the van, firing an AK47 and killed that officer. The second officer began firing his gun, but the son
gained advantage and shot this officer several times in the back of the head. The boy then returned to the
first officer and fired repeatedly.

Both Kanes left the scene but were found later and were killed as they attempted to initiate a
“shootout” with other law enforcement officers. Undoubtedly, there are those Sovereigns who are
prepared to defend their beliefs “to the death”.

There are hundreds of thousands of far-right extremists, especially tax protestors alone who number
500,000. Not all of these individuals are Sovereign Citizens. No one knows how many Sovereign Citizens
are in the U.S. This is due to the fact that there is no central leadership and very few cohesive groups that
they can join. Instead, there is an array of local leaders who have their own ideology and behavioral
techniques.

The Southern Poverty Law Center (SPLC) has estimated 100,000 hard-core Sovereigns. According to
this center, another 200,000 Sovereigns are testing techniques for resisting everything from speeding
tickets to drug charges.

While many Sovereigns own guns, their weapon of choice is paper. They submit dozens of court
filings containing hundreds of pages of pseudo-legal nonsense.

Originally, the movement mostly attracted white supremacists and anti-Semites. The latter was based
in their belief that Jews were playing a role in manipulating financial institutions and controlling the
government.

In more recent time, most new recruits are people who have found themselves in a desperate situation
and are searching for a quick fix. Unfortunately, some of the members of the Tea Party have become
attracted to the Sovereign movement, largely because of the anti-government beliefs of the Sovereigns.
The Sovereigns believe that they—not judges, juries, law enforcement or elected officials—get to decide
which laws to obey and which to ignore and who don’t think that they should have to pay taxes (Macnab,
2011)

Another recent phenomenon is that many self-identified Sovereigns are African-American and they are
apparently unaware of the racist origins of their ideology.

Sovereigns have devised a process that they utilized to hold law enforcement agencies at bay. The
process relies heavily on the idea of “redemption”. This is the act of splitting the “strawman” (the
corporate or government shell) from the “flesh and blood” man. Once separated from the “corporate
shell”, the newly freed man is outside the jurisdiction of most laws. The “redemption” scam is a bizarre
 technique that supposedly allows participants to tap into huge amounts of cash that the government is
thought to keep in the Sovereigns’ names.

Sovereigns demand that government officials produce an oath of office or bond before they will
communicate—this is most often utilized with traffic stops. They also use fraudulent forms of
identification, such as license plates and driver’s licenses that are titled International Driver’s License or
a Right to Road Travel. These documents claim that a person has the right to travel without government
regulation.

There are a number of Sovereign Citizens’ indicators. These include:
Strange license plates
Unusual comments about the Federal Reserve and other government agencies
Bizarre use of language: Example: Where are you going? Sovereign’s answer: I am a free man, traveling
upon the land.
Antigovernment bumper stickers
Unsolicited anti-Semitic comments
Anti-Federal Reserve or banking comments
Odd punctuation of names
Absence of a zip code
Arrogant or belligerent attitude (Sovereigns believe that they have secret knowledge about a complex government conspiracy that most Americans, including law enforcement officials, are too stupid to comprehend.

The Sovereign Threat in Georgia

Several Sovereign Citizens groups are present in Georgia, most are in the metro Atlanta area. Interestingly, however, recently a resident of a small southeastern community (population: 2300) informed one of the authors that there were two Sovereign Citizens in his community. This is certainly an indication that the movement is growing.

Since early 2010, several Sovereigns have filed Quit Claim Deeds and Affidavits of Adverse Possession with county clerk’s offices in order to occupy homes. They target foreclosed and/or abandoned homes that they do not legally own—therefore, they are “squatters”.

There are three prominent groups in Georgia:

1. Moorish Nation, a.k.a. Mfur Nation—the largest groups include: Nuwaubian Nation of the Moors, Yamassee, Washitaw, Moorish Science Temple, Azizan Moorish Nation and International Society of Indigenous Sovereigns (ISIS). Some members of the Nation also claim affiliation with the Nation of Islam, Black Hebrew Israelites and the New Black Panther Party.

2. Republic for the United States of America (RuSA). The term “for” and the small letter “u” in RuSA signify that the group is made up of independent “free state” republics loosely joined together. Members claim to represent the “real” American government which the United States officials allegedly abandoned and replaced with a corporation, the United States of America. RuSA plans to transform the U.S. back to a Republic based on hard currency (gold/silver), common law and Christianity. Members often identify themselves as Rangers, carry firearms and other weapons and conduct counter-surveillance against law enforcement and government officials. They use false identification as well.

3. Pembina Nation Little Shell Band—this group claims to be a Native American tribe that rejects the legitimacy of the U.S. government. They have created their own government, including a chief, court officials and law enforcement entities. Some claim to be members of the Moorish Nation as well and have fictitious forms of identification for both groups.

While there have been no reported violent episodes involving the Sovereigns in Georgia, there does exist that threat, especially as more individuals become disenchanted with the government and the financial crisis. This does add fuel to the fire for Sovereigns who already harbor anti-government sentiments.

At the end of 2011, the FBI reported that they expected to see a continued increase in Sovereign citizen activity, specifically targeting the housing market, in an effort to exploit the weak economy.

Questions to consider for all of us: What is the outlook for the Sovereign Citizens movement? What is the real danger posed by the Sovereigns? How do we recognize these people? How can law enforcement recognize, enforce the law and at the same time protect themselves from the Sovereign Citizens? What is the potential threat to other citizens?
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