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A MESSAGE FROM THE PROVOST, DEAN OF FACULTY AND MANAGING EDITORS

We are pleased to introduce Issue 1 of Volume 2 of the *DeVry University Journal of Scholarly Research*. It is a delight to present for a second year the journal that represents the fine scholarly activities of our faculty. In addition to including papers from across our colleges, we have added a new book review section, which has been prepared by our faculty. As you will see when you read the journal, our professors are engaged in scholarship on a very wide range of topics.

To support colleague and faculty online collaboration, we have created a *DeVry University Journal of Scholarly Research* (DUJOSR) community on our intranet platform, the Commons; this is a space where authors, and prospective authors, can ask questions, share ideas and have engaging online discussions. We have also created a new mailbox where papers, reviews and comments can be submitted to us at DUJOSR@devry.edu. Many thanks to Deb Maher, Senior Director of Human Resource Innovation and Analytics, for making these efforts possible and helping with our endeavor to expand our online presence.

Journal enhancements underway in 2015 include exploring opportunities for growth and reaching out to the broader external academic environment. The editorial team would very much like to see papers and book reviews from DeVry Brasil, and encourage authors who are revising earlier submissions to complete their changes and submit to our December issue. In future issues of the journal, we would also like to incorporate a Letters to the Editors section and give our faculty and colleagues the opportunity to voice thoughts about each issue. As the journal is continuing to grow, we welcome additional peer reviewers and ask colleagues who are interested to reach out to us at our new mailbox address.

As always, we encourage all DeVry University educators to undertake scholarship — find a research partner and get writing. The journal is meant to celebrate scholarly work and support our faculty’s working papers. As such, we would love to hear from our past authors who have gone on to publish the papers outside of DeVry University’s journal so we can acknowledge this success.

To find current and past issues of the journal, visit the DeVry University Newsroom: newsroom@devry.edu.

Sincerely,

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The DeVry University Journal of Scholarly Research (ISSN 2375-5393) is a semi-annual multi-discipline peer-edited journal devoted to issues of scholarship and education research. The journal is the work of the faculty, staff, and administration of DeVry University. The views expressed in the journal are those of the authors and should not be attributed to the sponsoring organizations, or the institutions with which the authors are affiliated.

MANUSCRIPT SUBMISSIONS
INFORMATION
The journal welcomes unsolicited articles on scholarship, education research, or related subjects. Text and citations should conform to APA style: Publication Manual of the American Psychological Association (6th ed.). Because the journal employs a system of anonymous peer review of manuscripts as part of its process of selecting articles for publication, manuscripts should not bear the author’s name or identifying information.

Electronic submissions of manuscripts (MS Word) and all other communications should be directed to:
DUJOSR@devry.edu

EDITORS AND REVIEWERS
DeVry faculty who wish to apply for positions on the journal’s board of editors or as reviewers of manuscripts should contact Sarah Nielsen or Deborah Helman.

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DEVRY UNIVERSITY INSTITUTIONAL REVIEW BOARD (IRB) GUIDELINES FOR RESEARCH
DeVry University has an Institutional Review Board (IRB) to protect the rights and welfare of humans participating as subjects in a research study. The IRB ensures the protection of subjects by reviewing research protocols and related materials. Faculty, colleagues and Master’s of Science in Education students planning research using human subjects or their information must submit an application to this board who review the applications and supporting materials to determine if all criteria have been met before approving the research.

The Institutional Review Board currently consists of four members and is led by Tracey Colyer, Assistant National Dean, Program Analysis and John Gibbons, Dean of Faculty. Over the past nine months, the board has been pleased to see a tremendous amount of growth in the number of IRB applications, which demonstrates great enthusiasm around producing research-based work. To support the growing demand, the IRB is streamlining their application process and plans to add additional faculty members to the team.

Additionally, to help colleagues and students gain an in-depth understanding of ethical research processes, the IRB obtained a Collaborative Institutional Training Initiative (CITI) membership. CITI provides globally accepted training that aids the research process. Moving forward, those who wish to submit applications to the IRB will be required to complete CITI training beforehand.

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Effects of Life-Threatening Illnesses on Leader-Follower Relationships

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Abstract
Family stress influences workplace leader-follower relationships. The purpose of this study is to understand how the presence of a significant emotional event, such as the life-threatening illness of a follower’s child, influences leader-member exchange (LMX) relationships. An adapted LMX-7 instrument was used to conduct in-depth interviews of 12 participants to collect data of follower perceptions. Participants were employed parents whose children were diagnosed with life-threatening illnesses. Data were analyzed using a phenomenological method. Four themes emerged: a loss of trust, a new rapport, a change in support, and a shift in priorities. Recommendations and implications regarding the perceived effects of life-threatening illnesses on leader-follower relationships are discussed.

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Keywords: Leadership, Followership, Leader-Member Exchange (LMX) Relationships, Work-Life Balance, Human Resources, Benefits
comes from the leader-follower relationship. Rothman and Banmann (2014) suggest those within in-groups find meaning in their work while those in out-groups do not.

When workplace dynamics are affected by the work-life stress of a follower, human resource processes are initiated to resolve employee work-life issues (Shore, Coyle-Shapiro, & Tetrick, 2011). These solutions include psychological contracts, perceived organizational support, and employment benefits—all systematic solutions to relationship issues. Solutions get measured through systemized means such as costs, levels of productivity, turnover, and job satisfaction (Ferris et al., 2009).

In relating workplace relationship issues to organizational solutions, systemized solutions show positive results for workplace citizenship behaviors, but show little effect on influences originating from outside work. Researchers focusing on work tend to look at costs, productivity, turnover, and job satisfaction, while researchers looking at home typically focus on relationships. According to Gordon, Gilley, Avery, Gilley, and Barber (2014), behaviors identified with fostering trust in leader-follower relationships stem from treating employees fairly and consistently, while promoting work-life balance. Traditionally, employees suffering trauma receive support and compassion, but then at a time appointed by company policy must return to full function without impairment (Al-Gamal & Long, 2010). Often, this process fails.

Few supervisors understand the work-life interface between workplace and home, creating an inability to address critical issues employees may face in stressful transitions between work and home (McMillan, Morris, & Atchley, 2011). When the health of employees’ children is involved, balance between home and work may shift dramatically, often described using the Bioecological model (Bronfenbrenner, 2005). This developmental psychology theory suggests that four interconnected levels exist: microsystem, which includes domains where direct face-to-face interactions exist; mesosystem, where Microsystems intersect; ecosystem, the external environment where multiple Microsystems exist interdependently with each other; and macrosystem, the overarching culture or broad belief systems of a population.

In the United States, over 10,000 children receive a diagnosis of life-threatening illnesses each year (NCI, 2010), motivating families to take advantage of the Family Medical Leave Act (FMLA) (Lynch, 2005). FMLA benefits, however, do not resolve leader-follower relationship issues that often follow a diagnosis. For example, FMLA allows employees up to 12 weeks of unpaid leave to resolve family-related issues of a serious nature. When employees return to work, managers often anticipate the same level of workplace engagement and productivity as before FMLA leave, even though employees may still suffer with much if not all of the stressors that motivated taking time off.

This study sought to move research in leader-follower dynamics beyond the context of the workplace by examining potential associations between home and workplace relationships from the follower’s perspective. The workplace does not exist in a vacuum. External influences always play out in both home-based and work-based relationships. The time a manager needs from an employee competes with the time the family needs.

Many workplace issues go unresolved because human resource solutions lack mechanisms to resolve employee issues at the relationship level (Bolino & Turnley, 2009). For example, a U.S. government study from the Executive Office of the President Council of Economic Advisors (2010) focused on organizational solutions to work-life issues without once mentioning the relevance to leader-follower relationships. Belwal and Belwal (2014) found that work-life issues may be hard to measure because employees do not report home-related issues at work. Results from this study focus on the relationship level to take a fresh look at what happens between managers and employees when stress disrupts working relationships.

Purpose

The purpose of this phenomenological study was to explore followers’ perceptions of relationship changes to leader-follower relationships that may be created by a significant emotional event within the follower’s home. Additionally, the study provided an opportunity to learn more about how working relationships change due to non-work related stressors within the larger system (Hsu, Chen, Wang, & Lin, 2008).

Problem Statement

When an employee’s child suffers a life-threatening illness, the workplace feels the stress. However, the perception of change in leader and follower relationships, from the employee’s perspective (Graen et al., 2004), creates a perception of disruption in manager and employee relationships within the workplace (Adair, 2013). The mesosystem of work and home suggests that home and work often have competing priorities (Bronfenbrenner, 2005). There is no clear evidence for what creates stress on LMX relationships in work-life situations (Powell & Greenhaus, 2006). Bioecological systems theory
suggests relationships are interdependent on both microsystems and ecosystems, regardless of whether they are based in conflict or facilitation. This interdependence suggests that influences external to work, such as extreme stress, can affect LMX dyads (Bronfenbrenner, 2005; Voydanoff, 2008).

**Research Question**

How does the presence of a significant emotional event within a follower’s family influence the leader-follower exchange relationship within the workplace?

**Theoretical Framework**

This psychological study looked at work-life issues from an LMX lens while applying stressors of a life-threatening illness to determine how LMX leader-follower relationships change. It focused on the mismatch between measuring family stressors with relationship-related values and measuring workplace stressors with system-related values. Stress at home is measured in terms of interpersonal conflicts; yet, stress at work is measured in terms of productivity and job satisfaction (Carr, Kelley, Keaton, & Albrecht, 2011).

The Bioecological model best identified this interaction between work and home relationships by looking at the mesosystem, as well as the microsystems of each interaction (Bronfenbrenner, 2005). By identifying the mesosystem, researchers also identify stressors that create disruptive interactions between microsystems. This linkage opened the fields of both work-life and workplace studies which share some common themes, though little data currently exists to explain this linkage.

Voydanoff (2008) applied the Bioecological theory to relationships at home within work-life research by showing that systems interact throughout many facets of a person’s life. A system has several levels from microsystems, or high level, to microsystems, or a team. Several teams make up the macrosystem, or department.

**Research Method and Design**

The phenomenological research design accomplished the study’s goals better than other designs because no baseline study existed. This study was phenomenological because the subjects were expected to share personal experiences of an event, or a phenomenon, that had occurred in their lives. Data collected consisted of personal experiences which required an analysis of a phenomenon: the experience of a child’s life-threatening illness and its effect on leader-follower relationships at work.

**Data Collection**

Data were collected using responses from six open-ended, semi-structured qualitative questions based on Graen and Uhl Biens’ (1995) LMX-7 assessment. These interview questions were approved by North-central University’s Institutional Review Board (IRB) to interview 12 participants from various organizations, all over the age of 18. These interviews allowed participants to discuss their experiences at work while caring for a child with a life-threatening illness.

Participant ages ranged from 31 to 48 \((M = 43)\), with 5 male and 7 female parents. Time between diagnosis and study interviews ranged from 2 years to 10 years \((M = 5.5, 5)\). All 12 participants were employed at the time of their child’s diagnosis. The most readily available population was found through a local nonprofit organization. The executive director gave permission to contact the organization’s members. I sent a blast email to over 650 families affected by life-threatening illnesses. Of the email respondents, I prequalified potential participants by specific demographics. Once 15 potential participants were identified, I contacted each interested potential participant by email to get a signed consent, then again contacted potential participants through email to schedule telephone interviews. I was able to qualify 12 participants to interview.

The specific demographic was employed adults associated with the non-profit organization who have children living at home. The initial diagnosis for each participant’s child was made at least 12 months prior to conducting in-depth interviews to limit emotional effects of interview questions as participants recalled experiences surrounding significant emotional events. Interviews were conducted by phone and recorded for later transcription.

**Data Analysis**

Original data were comprised of descriptions obtained through open-ended in-depth questions resulting in dialogue. The researcher described the structure of experiences based on reflection and interpretation of participants’ stories. The aim was to determine what the experience meant for each participant. From there, general meanings were derived. Once each interview was completed, the recorded conversation was transcribed and a content analysis supported by a modified van Kaam method (Moustakas, 1994, which best fit the criteria for accurate and reliable data.
reporting, was performed. The modified van Kaam method used horizontalization of data, which involved laying all the data out and treating it all with equal weight; then, the data was organized into clusters or themes. Data was viewed from various perspectives and angles to clearly describe all potential elements of the phenomenon studied (Moustakas, 1994). The Bioecological model showed microsystems of home and work interact with each other.

**Findings**

Results reflect lived experiences of 12 participants, who have been given pseudonyms for anonymity. From their experiences, four themes emerged. These themes — *a loss of trust, a new rapport, a change in support, and a shift in priorities* — describe perceptions and beliefs of followers in leader-follower relationships from shared experiences both before and after diagnoses of children’s life-threatening illnesses.

**Loss of Trust**

This theme reflects relationships that emerge and grow between leaders and followers within workplace relationships that are changed by work-life stress. Sub themes attached to this theme are — *frustration, negativity, and stress*. These sub themes are emotions that, when not addressed, lead to a loss of trust in relationship dynamics.

Ahmad felt anger and frustration within the leader-follower relationship:

I was not able to work from home, had comments from the supervisor when I’m not able to work from home. He made a comment, ‘come on, how much work are you getting done with your daughter’s chemo treatment?’ So, not only not accommodating, but insulting. *[Investigator follow-up question: How did that make you feel?] Angry. Hurt. I felt like I was afraid to fail and thrive at my job because of missing time off. At one point, we were having to do chemotherapy treatments once a week, and it made it extremely difficult to where I filed FMLA to protect myself. Some participants, though experiencing frustration and anger, did not express such deep shifts in relationship dynamics:

Sheila: I was a little more distant, but since I did remote work I could do the work when I needed to do it and get it done. So, as far as the working relationship with my supervisor, I don’t think it changed very much.

Negativity within the leader-follower relationship affected Samuel’s perception of interactions between him and his leadership team:

For the most part... the individuals in my group were positive, but there was one that was a bit, well, it-it was negative. It was a bit negative. There was one individual who kind of questioned everything, wasn’t supportive of the flexibility in allowing time off.

Stress seemed to be a common occurrence within relationship changes between leaders and followers, as expressed by Francine: “It was stressful because I knew that she looked at me as she could ask me for anything and I would do it. But there came to a point in time where I couldn’t do that stuff anymore.”

Many of the participants reflected an increased distance in dyadic relationships. Some distancing events were coupled with insensitive reactions from managers, generating frustration for followers. Although not all participants reported predominantly negative experiences within LMX dyads, all reported struggling to balance workplace demands with family needs.

Most participants admitted that stress within leader-follower relationships occurred; however, only some of participants identified significant levels of frustration, negativity, and stress. This study neither validates nor invalidates levels of frustration, negativity, or stress that occurred; it only reports findings of such within workplace relationships reported by participants.

Findings within this study do not indict the character of these leaders and managers; they identify that good supervisors who are not trained to handle such traumas tend to fall back on policy as an approach to unknown situations. Most policies are inadequate in helping employees over the long term, so managers rely on their own capacity for compassion to help their employees.

**A New Rapport**

This theme expresses longer term effects of participants’ experience of workplace relationships after a diagnosis. Sub themes that are attached to this theme are — *became more understanding* and *became more distant*. This theme points to career and relationship dynamics that can last long after trauma, treatment activity, and consequences of illness within follower home environments.
The first subtheme, became more understanding, showed some leaders became more aware of employee needs and expectations. Brian stated that before the diagnosis, “Our personal relationship wasn’t so great. I don’t know why; it seemed like a personality conflict.” Then, after the diagnosis, Brian stated, “After the diagnosis, we actually had a better relationship... So it was just a really great relationship; at that point, he worked with me really well.”

The last subtheme, became more distant, reflects consequences of changes that might occur within the workplace when dyadic relationships between leaders and followers change. Such consequences can last long after trauma and treatment activities have passed. Francine expressed this: “She looked at me [before the diagnosis] like ‘Ok, I could depend on her,’ and then [after the diagnosis] she couldn’t depend on me anymore.”

This theme focused on potential lingering, long-term residual influences of changed relationship dynamics between leaders and followers. Depending on how followers responded to the trauma of a child’s life-threatening illness, long-term effects appeared to reflect consequences from changes that occur when dyadic relationships between leaders and followers change.

When distance and insensitivity are present, followers may have a leader who lacks adequate emotional intelligence to objectively help followers balance work and home effectively. Not all leaders are well-equipped to help employees who are not engaged at work. Some leaders are at a loss when strong performers lose their edge and begin performing poorly. In contrast to what has been suggested with this theme, a new rapport, Skagert, Dellve, Eklof, Pousette, and Ahlborg (2008) found that distance can be reduced when leaders act as shock absorbers by employing supportive behaviors. This perceived change is neither a positive nor a negative since participants have shown that trauma of a diagnosis can influence leaders and managers to treat employees with more consideration and open communication as well as become more distant and unapproachable. None of the participants expressed that their leaders showed overt tendencies to become more distant, since the old way of communicating and relating had suddenly changed. However, many managers became overtly helpful, showing understanding and sympathy for their employee’s tragedy.

A Change in Support
The change in support theme was expressed by the participants as they shared lived experiences. Responses with this theme expose perceptions and beliefs of followers in leader-follower roles, describing the amount of effort leaders will exert to support the follower’s ability to succeed within the LMX dyad. The sub themes that are attached to this theme are — accommodation as an act of compassion, accommodation as an act of policy, and a change in performance ratings and status of promotability. This theme demonstrates perceptions upon news of such a diagnosis of an employee’s child.

Ahmad recalled a supervisor’s accommodation as an act of compassion:

With the first one [boss] it was not an issue. We had other people in the other organization to where he leveled out the work to where if we did have treatment he was able to work around, not a problem.

Some participants, however, experienced accommodations through policies of their organizations. Dawn related:

I think it’s [the working relationship] improved. I’m not sure whether there’s a direct relationship between the diagnosis or whether there’s just a drive from the top of the corporation, which is actually what I think is going on to make sure that they are communicating their appreciation to their staff.

In some instances, followers received lower performance ratings after the diagnosis of a child’s life-threatening illness. Daniel shared, “I think he’d [supervisor] probably still give me a high score, but I would say probably, maybe a seven (7) now [Question 3, Daniel stated the rating would be a 9 before diagnosis] with all the distractions and my mind being elsewhere at that time.” Sheila related the opportunity to be recommended for, and receiving, advancement:

My role has expanded and we’ve continued to grow as an organization, so I think he’s [supervisor] satisfied from that perspective. We’ve formed longer-term relationships, got bigger contracts, that sort of thing, so as a whole, as a job evaluation so to speak, it [the leader-follower relationship] stayed the same or improved.

More frequently than lowered performance ratings, participants reported losing promotional opportunities. Barry stated, “I would say it [the child’s diagnosis] lessened my chances [for a promotion]
because they... are thinking that I'm going to be too busy and preoccupied with other things to pay... enough attention to work."

The degree to which an accommodation is attributed to policy or leader's desire to help is not known, though followers benefit either way when trauma of a child’s diagnosis of a life-threatening illness occurs. Compassionate leaders step in to help followers cope, to give time needed for family without penalty, including reassignment of tasks or duties to other employees for a time. Leaders who show accommodation through policy use organizational guidelines to provide authorized assistance for followers to stay employed while coping with a child’s diagnosis.

Although policy dictates how much time an employee needs to care for family issues, these policies often fall short in time and available long-term resources. Most managers are unaware of longer term effects of trauma on follower job satisfaction, workplace commitment, productivity, and focus on the job. An opportunity exists here to help, with followers themselves informing us exactly what they need: a better understanding of effects of followers' experiences so leaders and followers can work together to help followers better cope with traumatic life events.

The third sub theme is a change in performance ratings and status of promotability. The performance rating is a symptom of whether followers are promotable. Lower performance ratings after a child’s diagnosis typically precede a loss of promotion, or a loss of opportunities to get promoted. Performance ratings that did not change after a child’s diagnosis typically preceded promotions after the diagnosis period. Also, no participants reported an increase of performance ratings, only that ratings maintained or fell during the diagnosis period.

A Shift in Priorities

This last theme shows typical changes within workplace relationships involved in work-life dynamics. Sub themes attached to this theme are — chose work over family and chose family over work. Angela acknowledged that making up work hours was a way to cope by stating, "Focusing on work is letting me keep myself distracted while it’s quiet." Glenda found a way to mix work and family to keep balance:

I have a senior position in the organization, and a small company, and you’re willing to take your work home and do it in the hospital or at night or do it at home at night; just make sure stuff was done.

Some participants related how work suffered as they put family needs first:

Ahmad: As far as being able to succeed, the only way it was harder was because I was missing more days. So in that respect it was harder, but he [second boss] didn't necessarily try to even out the work or help out that fairly in any way.

This theme shows the influence of workplace relationships from the follower’s perception. Participants expressed the need to balance work and family under stressful and unique circumstances. No participants expressed regret for choosing one over the other.

This theme was identified as a possible influence dynamic that starts when leader-follower relationships at work change due to a trauma within the follower’s family. Some participants found that burying themselves in work helped them cope with family stressors. Others feared their employment was in jeopardy, so they focused on work for fear of losing their jobs. Some participants focused on family first, recognizing this increased focus was a renewing of their already established priorities. Others admitted that the diagnosis forced them to reevaluate and refocus their priorities on their families.

Implications

Conclusions drawn from data suggest changes in LMX relationships may be influenced by follower perceptions that interpersonal interactions between leaders and followers change as a result of home-related trauma. Awareness that followers could not return to a normal pattern quickly added to stressors of changed relationships for some participants. The diagnosis of a life-threatening illness of an employee’s child can trigger confusion, brain fog, and memory lapses that affect cognitive and psychological functioning both on the job and at home. These impairments in memory and concentration, sleep, moodiness, appetite, and lower energy levels, as well as the ability to focus on even the simplest of tasks (Shelton-Rayner, Mian, Chandler, Robertson, & Macdonald, 2011) are common.

Participants shared that they were aware of sacrifices and accommodations their leaders made. Not all participants kept their jobs after a diagnosis, though most related positive memories. Prior studies have not looked through the eyes of employees while under extreme stress at home.
Conclusions
High levels of stress in employees’ homes have been associated with demands pulling on both work and family in a seemingly never-ending cycle. High levels of stress have been associated with various negative influences on LMX relationships such as poor physical health, depression, and anxiety. Results can be used for licensed counselors and clinical therapists in out-patient settings, as well as ombudsmen and corporate human resource benefits administrators who work with work-life balance issues. These data can also be used by clergy who provide services to families via mental health support groups within their congregations, or in media such as print and visual formats where education can be provided to instruct leaders in organizations.

Findings of this study will help organizations align policies that will benefit the affected employees through the above-mentioned constituents and providers. Human resource departments can establish policies and procedures to inform managers of specific needs of employees who have a child with a life-threatening illness. While mental health professionals and clergy already provide counseling to help parents cope with a child’s life-threatening illness, this group of providers can help clients, patients, and parishioners recognize how such a significant emotional event can influence the workplace relationship between follower and leader within the LMX dyad.

References


Effective Marketing Communication Channels for Nonprofits Targeting Millennial Donors

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Abstract
Many nonprofits face the reality that their donor base is aging, and new donors are necessary for survival. The purpose of this phenomenological study was to explore the marketing communication preferences, as related to financial giving, of Millennials (born between 1980 and 1994). Data were collected through recorded interviews, which were then transcribed and analyzed. Six major themes were identified: (a) channels that generate attention and further interest, (b) channels that the participants believe to be most credible, (c) most effective marketing methods, (d) least effective marketing methods, (e) reasons Millennials give, and (f) Millennials’ distrust of marketing. Evidence from the research conducted in this study indicated that Millennials prefer marketing communication channels that provide (a) accurate, honest information, (b) connection points with the organization, (c) the perception that their contribution is making a difference, and (d) opportunities for personal gain.

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Nonprofit organizations continue to rely greatly on individual donors to give financially because (a) humanitarian and social needs continue to exist, (b) the strapped government may not be able to continue supporting those in need at the levels previously seen, (c) the current troubled economy has limited corporate contributions, and (d) more nonprofit organizations exist today than ever before (Bekkers & Wiepking, 2011). These realities are forcing nonprofits to do more with less (McMahon, Seaman, & Buckingham, 2012; Ramirez & Saraoglu, 2011; Turner, 2013). Of course, donors and potential donors must be made aware of specific needs, and must understand the cause if they are to be relied upon to contribute (Bekkers & Wiepking, 2011). Leroux and Wright (2010) found that nearly 20% of those seeking additional funding failed to recognize their beneficiaries’ interests.

As a result, more attention goes towards communicating with individual donors to create relationships. Nonprofits’ responses to unpredictable funding patterns are varied, but all include some form of fundraising outreach. One strategy to raise funds includes a donor-giving tier (McCordle, Rajaram, & Tang, 2009). Publishing donor amounts, according to their giving level, provides public visibility of donors’ generosity. Additional strategies include (a) social media, the newest form of Word-Of-Mouth Marketing (WOMM); (b) mobile marketing, using cell phone technology; and (c) sophisticated websites. Customer Relationship Management (CRM) databases keep track of donors and segment them according to a variety of data criteria.
There were over 81 million Baby Boomers born between 1946 and 1964, and these Baby Boomers account for 30% of the U.S. population (Bleiel, 2010; Williams, Page, Petrosky, & Hernandez, 2010). By the end of 2015, the youngest boomers will be 51 years old, and the older Boomers are of retirement age. Boomers represent the wealthiest generation in U.S. history (Elcott & Himmelfarb, 2012; Williams et al., 2010).

## Literature Review

Silverman and Patterson (2011) stated that nonprofit sectors rely strongly on the voluntary contributions of Baby Boomers. Those over age 55 make up the majority of all deductible charitable gifts (Bekkers & Wiepking, 2011), and as these Baby Boomers ultimately die, funding sources for nonprofit organizations must attract other potential donor groups to sustain these nonprofit organizations. A massive intergenerational transfer of wealth will occur over the next 25 years as Baby-Boomers’ wealth passes on to millions of Millennials.

Millennials, also known as Generation Y, or Echo Boomers, were born between 1977 and 1994 (Williams et al., 2010). The Millennial population is even larger than the Baby Boomers, accounting for 83 million Americans and representing purchasing power of more than $733 billion; this fact has not escaped the attention of company leaders who have experienced difficulty reaching young consumers through traditional marketing approaches (Sultan & Rohm, 2008). These traditional marketing approaches include TV and radio commercials, magazine ads, and direct mail campaigns. If nonprofit leaders hope to capture donor dollars from the upcoming Millennial cohort, those leaders must understand this generation to determine what, if any, marketing tactics will effectively elicit a response.

The issue of fundraising, particularly to Millennials (or Gen Y cohort), is a relatively new source of academic research because even the oldest within the Millennial cohort is, by definition, considered a young adult. Researchers face severe limitations that prohibit longitudinal studies because the research participants are young adults. As a result, opportunities to study the phenomenon have not materialized. Additionally, Millennials are in the early stages of their careers and, therefore, may not be earning up to their career high potential. The fact that Millennials may not be earning what they may earn in upcoming decades is an important consideration when applied against the nature of this study, which examined the relationship between the nonprofit organization’s need to obtain donor funding and the Millennial generation cohort, with their highest potential earnings forthcoming.

## Research Questions and Purpose

The central research question was: What marketing communication channel is most likely to motivate Millennials to donate money? The answer to this question is, or will be, vital to the financial health and well-being of most nonprofit organizations. This question will lead nonprofit leaders to ask critical questions that will provide direction regarding fiscal stewardship and long-range planning.

## Method

The explanatory nature of this study prompted me to use phenomenological research procedure through detailed interviews with participants, in this case, Millennials. There are two reasons for choosing qualitative research methodology over other qualitative or mixed method designs. First, the qualitative, phenomenological method can be used to explore the lived experiences and perceptions of multiple participants (Moustakas, 1994). Qualitative methods support the need for deep understanding of human behavior that would be difficult to ascertain in other ways (Stavros & Westberg, 2009). Second, qualitative methods are exploratory and inductive, formulating general assessments based on particular cases (Génova, 2010).

### Data Collection

This researcher obtained permission from the Walden University Institutional Review Board (IRB) before conducting the study to ensure ethical protection of participants. Convenience sampling, inviting juniors and seniors with a major or minor in marketing, through their school email address, was the method used to recruit participants from a four-year public university in Pennsylvania. All interviews were conducted using face-to-face communication. Semi-structured interview questions (see Appendix A) were used to gain further insight into the opinions and beliefs of millennial participants in this study. Sticking to a series of sequential interview questions minimized any personal opinions or bias to impact participants’ responses, as recommended by Turner (2010). In-depth interviews allow for greater depth, insight, and illumination (Yin, 2009). Using the flexibility of semi-structured interviews, researchers maintain consistency but remain empowered to probe participants’ responses for additional information (Ambrose, 2012; Kvale, 2010).

### Participant Information

Twenty-seven participants were interviewed. These 27 Millennial students ranged in ages from 20-24, and were exposed to marketing principles, terms, and strategies due to their enrollment at the university and their exposure to various marketing courses. Fifteen of
the 27 participants were male students. Participants were provided a pseudonym, and spoke freely regarding their marketing communication preferences based upon their lived experiences.

Data Analysis
Accuracy of the participants’ interviews was achieved by allowing participants to review their transcript. Member checking allows researchers the opportunity to correct any misrepresentations against participant’s meaning to ensure accuracy of meaning (Marshall & Rossman, 2011). Creating and implementing reliability and validity strategies are important components to ensure that the researcher’s results are valid and trustworthy and, therefore, prove the accuracy of the researcher’s data (Wahyuni, 2012).

All responses were digitally recorded and transcribed using NVivo 10 software. Transcribed data responses and interview notes were reviewed line by line as soon as possible after the completion of the interview; themes were coded using NVivo 10 software. The recorded, and verified, interviews were analyzed, resulting in six major themes.

Findings
The findings from the research suggested the following six major themes: (a) channels that generate attention and further interest, (b) channels that the participants believe to be most credible, (c) most effective marketing methods, (d) least effective marketing methods, (e) reasons Millennials give, and (f) Millennials’ distrust of marketing.

The analysis of data collected from participants demonstrated a varied, but strong need for Millennials to be approached in a forthright fashion using marketing communication channels and methods that are most relevant to their lives. Each theme will be detailed below using actual participant comments using their pseudonyms.

Marketing Channels that Generate Attention and Further Interest
The first theme generated from the participant interviews described the marketing channels that create awareness and further interest. Thirteen participants expressed being most attracted to social media messages. Randy stated, “Once they reach out to my outside circle and I see that other people are taking interest, that are important to me, then I am more likely to take interest.” Cara, Reeba, and Julie preferred messages delivered through social media, because they state that Millennials “are always on their phones.”

These responses support Saxton’s (2013) finding that nearly 87% of nonprofit organizations currently use Facebook. Of those who preferred social media, 5 participants identified Facebook and 3 participants identified Twitter, specifically, as the social media type most likely to attract their attention and cause them to seek additional information. Television was mentioned by seven participants as a marketing channel most likely to attract attention and create further interest. Becky embraced television messages because “they can kind of point to a story,” and Stan stated, “You can really get the message through the commercials... you are sitting there for 30 seconds and you see what they are really trying to get at.”

Word-of-mouth was mentioned by four participants as the communication method most likely to attract attention and generate interest. Comments supported the fact that e-connectivity has radically transformed the reach, scope, and velocity of word-of-mouth processes with communiques reaching millions of people within days (Strutton, Taylor, & Thompson, 2011). Two participants took word-of-mouth even further by adding that they preferred face-to-face interaction. Tom equated word-of-mouth with Twitter when he stated that Twitter “kind of goes with word-of-mouth.”

In fact, interaction was desirable for most of the participants, and they want to be involved. Two participants preferred to be informed through email. This theme supports the assertion of discovery that Millennials desire greater engagement (Raymond, 2010). The preferred communication methods lend themselves to greater engagement. Social media, accessed primarily through the smart phone and word-of-mouth, and also now using the smart phone as the actual communication mechanism, must be a consideration for nonprofit leaders as they seek communication methods that generate increased interest within the Millennial target audience.

Channels that the Participants Believe to be Most Credible
A focus on trust, individual needs, and the visible effects of donations can build strong donor relationships (Furlow, 2012). The Millennial participants overwhelmingly felt that some form of personal connection creates the greatest credibility. This mindset was evident across almost every communication channel. In other words, connection trumps the actual channel used. Word-of-mouth, including face-to-face and social media interaction, was the most identifiable credible communication channel for 21 of the 27 participants. Because of the
ability to connect with people through social media, 10 participants specifically stated that social media was the most credible communication channel.

Regarding Twitter, Toni stated, “Tweets and retweets ... help the credibility because I can see the source... When I see others are donating or participating, I see also that it will increase my beliefs [in the nonprofits’ mission].” Tom agreed that “the comments and reviews” add credibility. Beatrice expanded on the notion of connection when she expressed that credibility comes from someone “we grew up with.” She continued that by relating to this person, she takes his/her endorsement of the organization as more credible. Janet stated that she found face-to-face communication most credible because “they can actually explain it to you.”

The notion that personal communication is more credible than other, less interactive, communication methods was the overwhelming reality for this target group. The ability to identify the source of the message, to put a face to the message generator, means a great deal to this group. The thinking seemed to support their truth that a trustworthy message does not originate from an anonymous source.

**Most Effective Marketing Methods**

Understanding what marketing methods are the most effective for the participants will be important to leaders of nonprofit organizations. This theme emerged as participants elaborated on various types of marketing methods.

Two main subthemes emerged. The first subtheme involved using emotion as the most effective marketing method to reach Millennials. Six participants volunteered the television commercial, unprompted, featuring the “puppies that looked sad” or “the crying animals,” as an example of a powerful, effective marketing message. Stan stated, “It’s that emotional connection with the Millennials that really make us want to donate.” This subtheme of Millennials’ inclination towards emotional marketing crossed gender lines.

The second subtheme involved ten participants who mentioned the value of nonprofit organizations developing a relationship with Millennials. The participants offered many suggestions. All accounts focused on trust, individual needs, and the visible effects of donations that can build strong donor relationships.

Providing Millennials with information surfaced from a number of participants. Beatrice expounded on this idea when she offered this explanation: “The more information, the better. The more information I have about it, the more compelling reasons I have to put my money towards their mission. Showing that my money is going towards something good means something to me.” The notion of participation in the creation of the marketing message was an interesting idea that Stan suggested. Stan elaborated, “They need to get the Millennials involved more. It’s less of telling us what to do... get us involved. If we want to contribute, we want to be a part of it, too.”

The two subthemes provide an interesting look into the psyche of Millennials. On one hand, they are moved to action through emotion; however, they also desire to be included on the detail, or at least know, what is going on within the organization. This understanding of the organization provides assurance that their invested resources are being used wisely.

**Least Effective Marketing Methods**

Many study participants talked about marketing methods that they found least effective, although no questions directly addressed marketing communication channels they did not prefer. Newspapers took a big hit. Four participants talked about the irrelevance of newspapers to their lives. The non-use of print went beyond newspapers, however. Several participants stated that they do not read anything in print.

Emails were unappealing to 4 participants and were described as “cold” and “annoying” by Toni and Randy, respectively. Frankly, the complaints against the Internet were most surprising. Several participants brought up their dislike for pop ups, describing them as “annoying” and unappealing, and several disliked the Internet as a whole. Randy called the Internet “obnoxious” and was “saying no to the Internet just because of the sole fact of privacy.” Relevancy is a key term here. Millennials will not entertain a message if they deem the source or communication method irrelevant.

**Reasons Millennials Give**

This theme may be the most specific to the research question. Understanding Millennials’ desire to give can provide valuable insights into Millennials’ motivations, which is critical to nonprofit fundraising efforts. A few participants mentioned that they are not financially stable enough to give financially now, but may be in a place to do so later, after their careers are more established. Elisia stated, “I feel that if you got us interested now and we knew about the organization, when we start our careers, we are going to be more likely to give back to that organization.” This thinking supports the research of Wiepking and Breeze (2012), who found individuals tend to give
more to charitable organizations, and more often, if they feel that their financial situation is presently secure and will remain secure in the future.

In spite of this sentiment, two main motivations for giving emerged after data analysis. The first motivation was a genuine desire to make the world a better place. Many comments were made regarding the need to do something for the greater good, and having a personal connection elevates the desire to help even more. Roger said, “There are times when people are just looking for some goodwill, especially during Christmas time. People are looking to do something better for someone else.” Frank stated, “We are able to do something for the greater good.” Becky explained, “Seeing people struggle gets me thinking that I could donate even a small amount to help these people.”

The second motivation was less altruistic, but instead revealed the desire for personal reward. One third of all those interviewed, 10 participants, revealed that personal gain would be a motivator to give. Frank simply said, “Make it seem like it’s beneficial for us.” Jacob asked, “How will it benefit us as Millennials? How does it? Because, unfortunately, we are a very selfish generation. What does it do for us?” Karen stated,

We are upcoming and we will be taking money from the Baby Boomers soon. If we donate money now, it helps that company grow and eventually our age group will take over these companies and we are just helping ourselves now for later on.

From early in their lives, every child of the millennial generation expected to get a medal or praise, leaving no one behind (Meier & Crocker, 2010).

There seems to be a dichotomy here that many participants give to help others, and also want something for themselves in return. To the Millennial, this view can coexist in harmony. The fact that many participants willingly shared these feelings supports their belief in honesty and self-disclosure. They are willing to be transparent and expect others to do so.

**Millennials’ Distrust of Marketing**

The sixth theme emerged from participants’ negative responses regarding marketing efforts. Although no question addressed this particular topic, many of the participants felt passionately enough about the topic to provide these responses, unsolicited. These findings substantiated the discontentment with the current level of information provided by charities; donors are requesting more information about what is actually happening to their money (Jos, Ton van, Williams, & Moxham, 2009). However, this distrust appears to run much deeper and substantiates Obrien’s (2011) findings that the consumer, in general, has emerged cynical, untrusting, and highly demanding. Stan simply stated, “You don’t know what is legitimate and what’s not.”

Although the Internet was effective, for the most part, in garnering attention and fueling greater interest, many trust issues emerged. Karen voiced the following concern about the Internet: “It isn’t always something that I believe. People twist some things.” Jared agrees. He said of those on the Internet, “They can say anything and people get off on it.” Internet ads concern Elisia, also. She mentioned, “I don’t want to click on it because I never really believe them.” In fact, the Internet is seen by Randy as a bit intrusive. He stated, “I am not going to trust something that is looking for what I am doing. It’s a ploy.”

If nonprofits want to be successful in attracting Millennial dollars, they must be perceived as trustworthy. Nonprofits are not exempt from Millennials’ lack of trust. They expect to be tricked and lied to. So open, honest communication is required on the part of the nonprofit organization.

**Conclusions**

If nonprofit leaders hope to capture donor dollars from the upcoming Millennial cohort, those leaders must understand this generation to determine what, if any, marketing tactics will effectively elicit a response. These findings not only reveal preferred communication methods, but also expose motivations that can be leveraged by nonprofit leaders to grow their Millennial donor base. Evidence from the research conducted in this study indicated that Millennials prefer marketing communication channels that provide (a) accurate, honest information, (b) connection points with the organization, (c) the perception that their contribution is making a difference, and (d) opportunities for personal gain.

**Accurate, Honest Information**

The study participants made it very clear that they thrive on information. They want to know what is going on with the organization, and have provided a number of specific areas of interest. One such example is in regards to the mission of the organization. Undergirding all communication is a foundational commitment to truth and honesty. Therefore, dedicating resources to obtaining and creating that message content would be a wise decision for nonprofit leaders. Video, pictures, and engaging copy appear to be most preferred elements that should be included in the communication. Sparse content, image
heavy communication, accompanied by a video and a link to gain even more specific information, would be ideal.

The Perception that Their Contribution is Making a Difference
Millennials are 74% more likely to pay attention to the message of the company if they believe the organization has a deep commitment to a cause (Furlow, 2012). Millennials possess a genuine desire to make the world a better place. Over and over, comments were made to support this reality. Millennials want to be kept abreast on who is being helped, what their specific contribution is being spent on, and general information about the organization. Testimonials may be an appropriate method to deliver those messages.

Connection Points with the Organization
Connection was a resonating theme — but only if the Millennials want to be connected. This nuance presents a conundrum for the nonprofits. Too little connection, and the Millennials feel slighted; too much, and they become annoyed and cynical. Without question, the best vehicle to deliver the message is social media. The fact that it is relatively inexpensive for the nonprofit is an added bonus. However, a deep commitment to using social media properly is paramount.

As educators, we can gain understanding of Millennials through this research as we seek to generate greater engagement, explore social media tools for greater educational relevancy, and, in general, seek to create a more conducive environment. Building trust in the classroom by being vulnerable, facilitating learning exercises that ensure inclusion and participation, and discussing intrinsic and extrinsic rewards may be foundations upon which we can build our classrooms.

Even if the Millennials are not in a place to begin contributing financially, many participants mentioned that building a relationship now will likely ensure financial support later on as their careers advance. This is very much like an elementary school-age child who receives a savings account with a $20 balance from a hometown bank as a way of introduction and brand building. The hope is that the bank brand becomes so engrained in the child’s mind that when she gets a job, opens a credit card, purchases a car or a home, takes out a line of credit, and invests in wealth-building strategies, the bank is the more logical choice.

Opportunities for Personal Gain
Millennials made it clear that they are looking for some reciprocal benefit when they donate, but are not all that motivated by artificial things like prestige. Millennials seem to want more tangible things like a book, a gift card, a promotional item, food, or something as intangible as a future job. The point is that Millennials are looking to get something when they give. This analogy may help to explain the concept. If two people approach a building that has an outer door and without fail, the second person will reach for the inner door and open it for person number one. It is a law of reciprocity. Nonprofits must create some exchange of value to encourage giving amongst Millennials. There is a level of entitlement that must be acknowledged and addressed in a fresh new way.

As educators, we can gain understanding of Millennials through this research as we seek to generate greater engagement, explore social media tools for greater educational relevancy, and, in general, seek to create a more conducive environment. Building trust in the classroom by being vulnerable, facilitating learning exercises that ensure inclusion and participation, and discussing intrinsic and extrinsic rewards may be foundations upon which we can build our classrooms.
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### Appendix A: Interview Questions

1. What types of marketing communications most appeal to you?

2. What marketing communication channels have you experienced coming from nonprofit organizations?

3. Based on your responses to interview questions 1 and 2, and assuming the message was consistent across each communication channel, what nonprofit marketing communication channels are most likely to catch your attention, and generate increased interest toward a nonprofit’s mission?

4. Based on your experiences and perceptions, what is your definition of marketing credibility?

5. Given your experience and perceptions, what communication methods evoke the greatest credibility?

6. Based on your definition of marketing credibility, and your experience and perceptions of nonprofit organizations, how should nonprofit organizations communicate with Millennials to convince you to contribute financially?

7. What marketing communication methods motivate you the most to donate to charitable causes?

8. What additional information, if any, do you feel is pertinent to this study that may not have been addressed in the interview questions?
Redefining Learning Objects: A Return to Roots in Computer Science

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Abstract
Reusing educational resources has long been advocated to reduce cost and improve quality in higher education. Learning objects, modular units of instructional content, were advanced as a way to facilitate such reuse. Learning objects were originally inspired by the computer-science paradigm of object-oriented programming (OOP). However, the definition of a learning object has since strayed from its rigorously specified computer-science roots. This nebulous definition has contributed to the limited impact of learning objects in educational practice. Now that the term Open Educational Resources (OER) has been widely adopted for most of what were formerly called “learning objects,” it is time to redefine the term “learning object” in closer parallel to an OOP object, as a self-contained, purpose-built resource containing both information and functionality. Creating and curating collections of learning objects that meet this more restrictive definition may improve the ability of educators to take advantage of truly reusable resources.

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Keywords: Learning objects, Open educational resources, OER, Reuse

Cost and quality have dominated recent discussions of U.S. higher education. Cost-related issues include rising tuition rates (U.S. Department of Education, 2013), burdensome student debt loads (The Institute for College Access & Success, 2014), prohibitively high textbook prices (Senack, 2014), and poor returns on investment in a college degree for at least some students (“Making College Cost Less,” 2014). Quality concerns center on graduates’ perceived lack of improvement in critical thinking (Arum & Roksa, 2011) and essential workforce skills (Mourshed, Farrell, & Barton, 2012). Higher education institutions need solutions that improve quality while reducing costs.

This paper presents a conceptual analysis of one such potential solution: the reuse of digital educational resources in modular form as learning objects. In particular, this analysis addresses the central issue of how learning objects are defined, and whether changes in the current definition may be warranted.

Background
This section reviews the basic principles of software reuse and object-oriented programming in computer science that inspired the idea of learning objects, and discusses the subsequent evolution of the concept from those origins. The relationship between open educational resources (OER) and learning objects is addressed. Finally, the current state of learning objects and OER in educational practice is described.

Software Reuse
From almost the earliest days of computer programming, the reuse of code and other artifacts has been recognized as a best practice in the field. Designing, coding, and testing a unit of software de
novo is arduous and error-prone, creating significant incentives for developers to reuse elements of previously designed, written, and tested programs. To facilitate such reuse, and to improve understandability and maintainability of systems, software practitioners design information systems in a modular fashion. Modular design and reuse are core principles in the education of computer scientists, programmers, and software engineers (see, for example, Almeida et al., 2007).

Object-Oriented Programming

Object-oriented programming (OOP) emerged in the 1970s as a logical extension of modular design (Capretz, 2003). Seen as a radical departure from traditional approaches at the time of its inception, OOP has since become the predominant software development paradigm (Heusser, 2013).

In the traditional structured or procedural programming paradigm, there is often a separation between code blocks defining data elements (for example, an employee’s name, identification number, job title, and salary) and code blocks for performing operations on those data elements (for example, hiring, firing, or promoting an employee). Furthermore, data definitions and operations relating to a single type of entity (such as an employee, a product, or a customer) often wind up being distributed across many modules, making it difficult to transplant functionality related to a common entity from one system to another. In OOP, a special type of module called an object is created to correspond to a single type of entity (often a real-world person, place, thing, or event being modeled in the software), and all data definitions and operations relating to that entity are contained within the object. (Some, but not all, object-oriented programming languages introduce the notion of a class as a template for generating objects of a given type. Although important in computer science, classes are not central to the analysis presented here. To simplify the discussion, henceforth in this paper, only the term “object” will be used.)

Objects in OOP meet rigorous standards for how they are implemented and how they behave within an information system. Objects in an OOP system must possess specific properties of encapsulation, polymorphism, and inheritance (Nakov & Kolev, 2013). Encapsulation refers to the idea that implementation details are hidden within the object, so that a developer who is merely using the object can treat it as a black box to achieve a specific objective, without worrying about its internal mechanisms. Polymorphism refers to the ability to apply a common operation to different objects and have the operation interpreted correctly for each object type. Inheritance allows for creation of a hierarchy of classes and objects from the general to the specific, with data and operations from higher, more general levels automatically being incorporated into lower, more specific levels.

Learning Objects

The learning object concept originated in 1994 and was inspired by the general idea of OOP from computer science (Wiley, 2002). Learning object proponents advocated treating digital educational resources as modular components that could be reused in many different instructional situations. A learning object covering, say, Newton’s laws of motion might be used in courses in physics, engineering, astronomy, and general science, possibly at different institutions. It was envisioned that entire new courses could be assembled from aggregating existing learning objects (Duncan, 2003), or selected learning objects could be used to enrich existing courses (Parrish, 2004). Goals of the learning object movement were to reduce course development time and cost by eliminating duplication of effort in creating redundant resources, and to improve instructional quality by sharing the best available version of each learning resource (Palmer & Richardson, 2004).

In sharp contrast to OOP, however, the learning object community adopted extremely broad definitions of its central term. One early definition of learning objects from an Institute of Electrical and Electronic Engineers (IEEE) standard included “any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning” (IEEE Learning Technology Standards Committee, 2005, para. 1). Although Wiley (2002) criticized this definition because it “fails to exclude any person, place, thing, or idea that has existed at anytime in the history of the universe” (p. 5), he himself proposed a definition that was only slightly less inclusive: “any digital resource that can be reused to support learning” (p. 6). Learning objects encompassed a wide range of learning materials, from individual images and diagrams, through slideshows, tutorials, quizzes, lesson plans, videos, audio clips, and simulations, to textbooks and entire courses (Wiley, 2002). The lack of a clear definition has been criticized as one of the barriers to learning object adoption (Metros, 2005; Parrish, 2004).

Open Educational Resources

The concept of open educational resources (OER) has gained prominence in recent years, popularized through a widely circulated international report by the Organisation for Economic Co-operation and Development (OECD, 2007). The OECD report’s definition of OER as “digitised materials offered freely
and openly for educators, students and self-learners to use and reuse for teaching, learning and research” (p. 10) positions OER as a subset of what were earlier called learning objects, namely, those learning objects that are made “freely and openly” available. The OER concept thus builds on the earlier learning object concept’s emphasis on reusing resources, while adding a focus on accomplishing reuse at no cost without legal or technical restrictions.

The education community is in a process of transition between the terms OER and learning object. I searched the EBSCOhost Education Research Complete database, restricting results to peer-reviewed journals, and found that in 2010, twice as many papers were indexed with the keyword “learning objects” (23) as with the keyword “open educational resources” (11); but in 2014, the relative prominence of the two terms was reversed, with three times as many OER papers (36) as learning object papers (12). According to the Google Trends website (Google Inc., 2015), as measured by relative frequencies of Google searches, interest in the term “learning objects” has declined fairly steadily since 2010, whereas interest in the term “open educational resources” has increased over the same period, surpassing interest in “learning objects” throughout most of 2014; see Figure 1 for details.

![Figure 1. Relative Interest in Search Terms “Learning Objects” and “Open Educational Resources” January 2010 – January 2015](image)

Given the considerable overlap in how these terms are currently defined, and with this apparent transition in terminology underway, the time appears right to consider a redefinition of learning objects to emphasize the computer science roots of the concept, create a useful distinction from OER, and potentially reinvigorate adoption of this promising but, as will be shown in the next section, currently underutilized approach to teaching and learning.

Current State of Learning Objects and OER

The availability of digital educational resources (whether called learning objects or OER) appears to be booming. Learning objects can be easily found online, as every web page and YouTube video that could conceivably be used in instruction can be considered a learning object under the current prevailing definition. Additional learning objects have been collected into dedicated online databases known as learning object repositories (LORs). As of February 2015, just one such LOR, the Multimedia Educational Resource for Learning and Online Teaching or MERLOT (http://www.merlot.org), indexed over 62,000 learning objects, more than 14,000 of which were added in the preceding 30 days (MERLOT, 2015). The Massachusetts Institute of Technology (MIT) OpenCourseWare (OCW) site offers materials from 2,150 courses (MIT, 2015), and MIT is just one of several hundred universities worldwide supplying open content as part of the Open Education Consortium (OEC, 2015).

Nevertheless, the impact of these resources on educational practice appears limited. In a recent survey, only one-half of academic leaders at higher education institutions reported that even one course in their institution uses OER (Allen & Seaman, 2012). In a quantitative study of reuse in three large learning object repositories, Ochoa (2008) determined that only 20% of published learning objects are reused at all, and of those, most are reused only once. Educators have been slow to adopt learning objects despite large amounts of money and effort being invested in their creation (Cohen, 2010).

To account for the observed discrepancy between learning object availability and utilization, a number of barriers to adoption have been suggested, including the lack of a clear definition (as noted earlier), variable quality, weak search and discovery tools, fragmented distribution, and scarcity of research proving educational value (Metros, 2005). The following analysis will address how a redefinition of learning objects might reduce some or all of these barriers.
Research Questions

Two related research questions are explored in this analytical study: For learning objects, can meaningful analogs to the properties of encapsulation, polymorphism and inheritance associated with OOP objects in computer science be identified? How might a more rigorous definition of learning objects, modeled more closely on OOP principles, be expected to impact the sharing and reuse of educational resources?

Analytical Approach

To address the above questions, an analytical approach was used of first identifying conceptual similarities between learning objects and software objects, and then reasoning by analogy about how OOP principles might translate into the educational sphere. The methodology of reasoning by analogy has a rich history in learning object theory. In an early paper, Hodgins (2002) used extended analogies to both children’s building toys and the full-scale construction industry to predict the emergence of a learning object economy. Other authors (Duncan, 2003; Wiley, 2002) reasoned about learning object properties and usage through analogies to atoms and to book pages and chapters. The analysis presented here represents a continuation of this approach.

In general, data for software objects were regarded as similar to information content for learning objects, and operations (behaviors or functionality) for software objects were treated as similar to interactive features such as quizzes or other assessments for learning objects. Specific examples of actual software objects and learning objects were used to ground the analysis.

Analysis

Each canonical property of OOP objects – encapsulation, polymorphism, and inheritance – is considered separately below.

Encapsulation

The property of encapsulation guarantees a clear separation between a software object’s external interface, the part of the object that is visible to and interacts with the system in which it is used, and the object’s internal implementation, which is hidden inside the object and so has no potential effect on the object’s environment. Consider a software object representing a loan, with one of the object’s functions being to calculate the monthly payment amount for the loan. The interface of this object includes the data that must be supplied for the calculation — the loan balance, interest rate, number of periods, and timing of payments — and the output data: the payment amount. Everything else about the object, including exactly how it performs the calculation, is encapsulated so that the developer using the object neither knows nor cares about these details; he or she must only ensure that the inputs and outputs listed in the object’s interface are compatible with the larger system in which the object is being incorporated.

In contrast, consider a learning object that is a tutorial on the software development life cycle, which a course designer is considering including in an information systems course. Any number of potential inconsistencies between the tutorial and other course elements, such as quizzes and exams, may exist and could be troubling to a student. There are many possible versions of the software development life cycle, with different numbers of phases and different names for the phases. If the tutorial describes a four-phase life cycle (planning, analysis, design, implementation, and deployment, with coding and testing implicitly combined in the implementation phase), and a quiz elsewhere in the course asks students to list the five phases of the life cycle, confusion will ensue. The course designer can avoid such inconsistencies only by performing a complete review of all content in every learning object in the course to manually identify any element that might be seen by a student as in conflict with any other element. The course designer may well decide that it is easier and less time-consuming to create all the course components personally to ensure consistency. By forcing course developers to be concerned about all implementation details of an object, the lack of encapsulation in learning objects may serve as a barrier to their adoption.

What would it mean for a learning object to have the property of encapsulation? Every properly defined learning object could be accompanied by a detailed statement of inputs—prerequisite knowledge that students are expected to have before using the object—and outputs—what students are expected to know after using the object. A course designer would then have only to compare the outputs of one learning object, such as the life cycle tutorial, to the inputs of another object, such as a quiz, to check for compatibility. It would not (at least in theory) be necessary to review the entire contents of every object in detail. Input and output specifications could be provided in a standardized format as part of each object’s metadata.

Polymorphism

Polymorphic software objects are able to receive generic commands for operations and perform them in ways that are appropriate to the specific receiving object. A classic example is that in a computer game,
Redefining Learning Objects

A make-sound operation applied to a cat object and a dog object causes the cat object to purr and the dog object to bark.

Some learning objects can be viewed as having a limited form of polymorphism due to compliance with web accessibility guidelines (see World Wide Web Consortium, 2005). An image of a diagram showing the software development life cycle may incorporate alternative text that can be made audible by a screen reader for visually impaired users, or a video tutorial may include a script or closed captioning. When these objects are called upon to display information to a student, they may do so pictorially, in text form, or audibly, depending on the needs and preferences of individual students. In this way, a single polymorphic learning object can meet the varied needs of multiple individual learners.

Currently, there are no guarantees that learning objects found on the web or in a repository will provide even the limited degree of polymorphism required for web accessibility. Course designers must therefore inspect each learning object they wish to use for compliance with web accessibility guidelines, or risk providing content that is inaccessible to some students and possibly in violation of institutional policies or even legal mandates (World Wide Web Consortium, 2006). If a learning object is not compliant, the course designer must revise or reject it. Thus, lack of the minimal polymorphism required for web accessibility can be another barrier to learning object adoption.

A more expansive version of learning object polymorphism is suggested by the principles of Universal Design for Learning (UDL), a body of theory and practice focused on providing equal learning opportunities to all students through flexible learning designs that adapt to individual student needs (Meyer, Rose, & Gordon, 2014). A central tenet of UDL is that learners are highly variable, and their needs cannot be addressed adequately through a one-size-fits-all approach. Instead, UDL practitioners attempt to design learning experiences that offer learners choices among multiple means of engagement, representation, action, and expression (Meyer et al., 2014). Fully polymorphic learning objects designed in accordance with UDL would provide a richer, more personalized educational experience.

Inheritance

Inheritance is essentially a mechanism for software objects of different types to share certain data definitions and operations. A base object can selectively provide some functionality to related (derived) objects. This capability is primarily of benefit to object developers, as it helps reduce redundant coding when several object types share common data and operations, and also makes maintenance easier because changes made in a single base object are propagated automatically to all its derived objects. In a classic example, because dogs and cats share a number of common attributes (weight, color, name, and so on) and operations (eating, sleeping, licking, and so on), a developer modeling these animals for a computer game could create a single-pet object type containing these common elements, from which both dog objects and cat objects could inherit. The individual dog and cat object types would then need to contain only data and objects unique to each (e.g., a fetch-stick operation for dog objects and a play-with-string operation for cat objects).

What could inheritance look like for learning objects? Consider again the example of a course designer assembling a unit on the software development life cycle. The designer wishes to provide the student with an overview of the complete life cycle, followed by individual, more detailed lessons on each phase. If the overview lesson and the phase-specific lessons are implemented as separately authored learning objects, there are likely to be inconsistencies as to nomenclature or other details that could confound students. The developer would need to check all the learning objects carefully for consistency, and individually edit each object to resolve any discrepancies. Furthermore, if the course designer wished to make any revisions of his or her own (i.e., changing a phase name from “implementation phase” to “build phase”), the designer would need to separately revise the overview object and the appropriate phase-specific object.

In contrast, consider a scenario in which learning objects support inheritance, and the phase-specific objects inherit their phase names and other key details from the overview object. Consistency of nomenclature across all the objects in the lesson is thus assured without additional effort on the part of the course designer. Revising the lesson also becomes much easier because shared information can be changed once in the overview object with the changes automatically cascading to the phase-specific objects. By making it easier to ensure continuity and make revisions across sets of multiple related objects, support for inheritance would reduce barriers to learning object adoption.
**Recommendations**

In this section, a more stringent definition of learning objects requiring them to incorporate the properties of encapsulation, polymorphism, and inheritance is proposed, and its impacts on learning object authorship, curation, and reuse are considered.

**Proposed Redefinition**

On the basis of the preceding analysis, the following new definition of learning objects is proposed: A learning object is any digital resource that can be reused to support learning and that supports the following properties:

- **Encapsulation**: The learning object’s metadata includes explicit, detailed lists of learning prerequisites and learning outcomes (i.e., its interface) which provide all information necessary to determine its compatibility with other learning objects within a course.
- **Polymorphism**: The learning object provides multiple alternative methods of engagement, representation, action, and expression to learners in compliance with applicable web accessibility guidelines and the principles of UDL.
- **Inheritance**: The learning object is capable of sharing portions of its content and functionality with other related learning objects to facilitate their assembly into a unified, consistent set.

Under this proposal, resources not meeting the above criteria would continue to be available but would no longer be identified as learning objects. Those available under non-restrictive licenses and in revision-friendly technical formats would continue to be labeled as open educational resources (OER), a term which, as discussed earlier, is rapidly becoming preferred in any case.

The goal of this proposed redefinition is for the learning object label to become a meaningful indicator that a resource supports a well-defined set of properties and can be reused, aggregated, revised, and consumed in predictable ways. Rather than a vague, almost meaningless term that can be applied to practically any YouTube video, PDF document, or image file on the web, a learning object would come to represent a higher standard of engineering and craftsmanship.

**Impact on Learning Object Authorship**

Under the proposed definition, learning objects would of necessity become more sophisticated, complex entities than most are today. Supporting the required properties would necessitate some form of active processing capability in each learning object, which could be provided by JavaScript for web-based objects or by similar scripting capabilities in other formats. Initially, creating these more sophisticated learning objects would demand programming skills on the part of the author. In time, standard templates, frameworks, and authoring tools would likely emerge to allow non-programmers to create content, while an automatically generated wrapper provides support for the object properties. Some authors may choose to retrofit existing resources by adding support for the required properties.

Even with automated support, creating resources meeting the proposed learning object definition would become more difficult. Fewer resources would qualify as learning objects, and the rate of contribution of new learning objects would decrease. Quality, however, should improve, as more rigorous standards should discourage casual publication of poorly conceived and executed resources.

**Impact on Learning Object Curation**

If the proposed definition were adopted, current repositories could continue to house all the resources they now hold, but would no longer label them all as learning objects. Repositories may screen resources in their collections to identify those meriting the learning object designation. Repositories may modify their search interfaces to allow users to restrict search results to only qualified learning objects. Repositories may also adjust their search result ranking algorithms to list qualified learning objects at the top, much as some now do for resources with high peer-review or user-rating scores. Specialized repositories holding only qualified learning objects may emerge as larger numbers of such objects become available. These efforts may ease problems with learning object search and discovery, and make them available in a more organized fashion.

**Impact on Learning Object Reuse**

Under the proposed definition, reuse of qualified learning objects should become significantly easier, as described in detail in the Analysis section. This effect would likely be partially offset by the reduced supply of such objects, at least initially. Course designers would probably continue to use a mixture of learning objects (as newly defined) and other educational resources, but preferring learning objects where available. Even with fewer resources meeting the definition of a learning object, each such object should have a substantially higher rate of reuse, ultimately resulting in greater reuse overall.
Conclusion

Redefining learning objects to meet minimum standards of encapsulation, polymorphism, and inheritance, analogous to software objects in OOP, would shift some of the burden of facilitating reuse from users to authors, and may result in better balance between learning object supply and demand, and greater reuse of learning objects overall. This proposal addresses several barriers to learning object adoption by not only providing a clearer definition, but also reducing variations in quality, improving capabilities for search and discovery, and reducing fragmentation. The proposal may even indirectly facilitate research on learning objects’ educational value by providing a more standardized basis for such research.

Several lines of further investigation are suggested by this analysis: (a) identifying existing learning objects that meet some or all of the proposed qualifications, (b) developing tools and techniques for authoring new qualifying objects and retrofitting existing ones, (c) evaluating whether objects meeting the proposed definition actually make reuse easier, and (d) exploring additional changes to the definition of learning objects. Educators should no longer be content with a vague learning object definition that has led to large numbers of available so-called learning objects but limited impact on educational practice. The time is right to reclaim, redefine, and reinvigorate the learning object.

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A Competency-Based CIS Degree for Certified IT/IS Practitioners: Is It Feasible?

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Abstract
This paper starts with a short review of education opportunities for IT (Information Technology) and IS (Information Systems) practitioners and constraints that possibly hinder them from pursuing a degree program. It also identifies IT- and IS-related careers, and discusses how a college degree could help them to land an IT or IS job. This paper continues with comparing the curricular attributes between CS and CIS degrees, and found CIS to be the ideal program for IT and IS practitioners. Then, the review of overlapping instructional content between certification trainings and CIS curricula in four aspects confirms the redundancy for certified IT or IS practitioners, who must re-learn the content they have already mastered. Considering three factors — time, cost, and productivity — this paper found the rising competency-based education a feasible alternative for certified IT or IS practitioners to expedite their journey to a college degree. Finally, this paper ends with a recommendation for educators to challenge the acceptability of competency-based education.

Keywords: Competency-based learning, Competency-based education, Performance-based assessment

Information Technology (IT) and Information Systems (IS) careers are highly technology-intensive, and require practitioners to be proficient in job-specific knowledge and skills. Interestingly, although the recent hiring trend shows a strong demand for college degrees (U.S. Bureau of Labor Statistics, 2014), a study shows that (a) only one third of the IT practitioners hold an IT- or IS-related college degree, (b) 36% of IT practitioners do not possess any college degree, and (c) 24% of IT practitioners have a bachelor’s degree in computer science, math or related fields (Salzman, Kuehn, & Lowell, 2013). Such a result could possibly be caused by two constraints of traditional degree programs that hinder IT- and IS-practitioners from earning a college degree. First, traditional degree programs adopt a “time-based” model that requires all students to enroll in and complete semester-long courses to earn college credits. Although the length of a semester can vary from five to eighteen weeks, college credits are granted only at the end of the semester. Second, the current accreditation requirements make it difficult to transfer in non-collegiate learning experience as college credits, although many colleges grant credits for College Level Exam Program (CLEP), corporate training programs, military training programs, and professional or industrial certification.

In the case of a Cisco Certified Network Associate (CCNA), the certification assures that a holder has sufficient knowledge and skills to fulfill an entry-level network engineer job; therefore, a CCNA holder could presumably demonstrate proficiency and mastery of networking-related instructional content that is covered by one or more college courses. However, academia tends to overlook the possible
overlapping between certification training and degree programs by limiting the opportunities for students to demonstrate what they have learned and progress to learn what they have not yet learned. When certified IT or IS practitioners are treated as novices, and must re-learn subjects in which they are highly proficient, the educational program is less productive and cost-effective. As a result, the author believes it is a pressing issue to investigate the feasibility of a time-saving college degree program for the 36% of non-degree-holding IT practitioners (Salzman et al., 2013). Excitingly, the rise of competency-based education might have pointed to a direction. Yet, is it feasible to offer a competency-based CIS degree for certified IT/IS practitioners?

The purpose of this paper is to (a) investigate both the education and career opportunities for IT and IS practitioners as well as their relationship, (b) compare the curricular attributes between CS and CIS degrees, (c) discuss the overlapping of instructional content between certification trainings and CIS curricula in four aspects, and (d) examine the characteristics of competency-based education. This paper contains seven sections to discuss what certification is, IT and IS careers, whether IT/IS practitioners need degrees, why practitioners should choose a CIS over a CS curriculum, from certification to a degree, and competency-based education. These sections are followed by a conclusion that suggests academia should explore the opportunities a competency-based CIS degree can bring to certified non-degree-holding IT and IS practitioners.

**What Is Certification?**

The term “professional or industrial certification” refers to an acknowledgement of proficiency or qualification of an individual for practicing a job or performing a highly technology-intensive work. A certification can typically identify the required core knowledge domains and skills, standardize the training, validate proficiency, and assure qualification of practitioners. In the area of IT and IS, the authority of issuing certification comes from one of the following non-collegiate organizations:

(a) **Vendor:** Vendors, or suppliers, like Microsoft and Oracle can certify IT and IS practitioners to operate vendor-specific products and services.

(b) **Professional organization:** IT and IS practitioners of a career from a voluntary, industry-led, organization to certify new practitioners for the benefits of the public and members of the organizing profession. The Certified Internet Web Professional (CIW) was created by a community of Web designers and developers in the late 1990s.

(c) **Special interest groups:** A group of people, or an organization, may devote to promote a special IT or IS technology. The “Zend Certified Engineer” (ZCE) certification was created and monitored by an independent advisory board whose members contribute heavily to PHP and Zend Framework open source projects.

(d) **For-profit organizations:** Companies can certify IT and IS practitioners as a service in exchange for monetary return. For example, the “Certified Specialist in C# Development” is a certification managed by Learning Tree International, Inc.

**IT- and IS-Related Careers**

The IS 2010 Model Curriculum (ACM, 2010) specifies seventeen job titles that require highly job-specific knowledge and skills, with each job title being identified by a letter from A to Q, as listed in Table 1. They are selected from one of the seven career options: Network Design and Administration, Programming and Software Engineering, Database Administration, Security and Risk Management, Web Development/Design, Project Management, and Enterprise Architect.

**Table 1: ACM-Specified Job Titles**

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Job Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Application Developer</td>
</tr>
<tr>
<td>B</td>
<td>Business Analyst</td>
</tr>
<tr>
<td>C</td>
<td>Business Process Analyst</td>
</tr>
<tr>
<td>D</td>
<td>Database Administrator</td>
</tr>
<tr>
<td>E</td>
<td>Database Analyst</td>
</tr>
<tr>
<td>F</td>
<td>Business Manager</td>
</tr>
<tr>
<td>G</td>
<td>ERP Specialist</td>
</tr>
<tr>
<td>H</td>
<td>Information Auditing and Compliance Specialist</td>
</tr>
<tr>
<td>I</td>
<td>IT Architect</td>
</tr>
<tr>
<td>J</td>
<td>IT Asset Manager</td>
</tr>
<tr>
<td>K</td>
<td>IT Consultant</td>
</tr>
<tr>
<td>L</td>
<td>IT Operations Manager</td>
</tr>
<tr>
<td>M</td>
<td>IT Security and Risk Manager</td>
</tr>
<tr>
<td>N</td>
<td>Network Administrator</td>
</tr>
<tr>
<td>O</td>
<td>Project Manager</td>
</tr>
<tr>
<td>P</td>
<td>User Interface Designer</td>
</tr>
<tr>
<td>Q</td>
<td>Web Content Manager</td>
</tr>
</tbody>
</table>

*Note: Adapted from ACM IS 2010 Model Curriculum (2010)*
Do IT/IS Practitioners Need Degrees?

The main difference between a college degree and a certification is that certifications provide specialized training, whereas a bachelor’s or master’s degree offers a more well-rounded education. Often, certifications do not focus on underlying theories but the application and usage of them, whereas a bachelor’s degree will cover basic IT and IS theories to lead to a higher level of comprehension of development methodologies. Certifications center their training on one or more topical areas, but a bachelor’s degree will lead students through a combination of core topical areas to prepare students for understanding the crucial issues involving technology in order to develop, construct, and maintain effective information technologies.

Why Choose CIS Over CS?

In terms of academic discipline, Computer Science (CS) is a broad scope of computing-related knowledge domain with topical areas that overlap to a certain extent with Management Science (MS), particularly the fields of (a) data and information management, (b) project management, (c) knowledge management, (d) business process management, (e) security and risk management, and (f) strategy, management, and acquisition. Computer Information Systems (CIS) is a subset of CS that heavily utilizes CS knowledge and skills to manage information systems. Figure 1 illustrates the relationship between CIS and CS with respect to MS. Postsecondary curricula of both CS and CIS majors typically comply with the curriculum guidelines published by the Association for Computing.

Table 2: Entry-Level Education (By Occupation)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Entry-level education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Support Specialist</td>
<td>Associate’s (preferred but not required)</td>
</tr>
<tr>
<td>Web Developer</td>
<td>Associate’s</td>
</tr>
<tr>
<td>Software Developer</td>
<td>Bachelor’s</td>
</tr>
<tr>
<td>Network and Computer Systems Administrator</td>
<td>Bachelor’s</td>
</tr>
<tr>
<td>Information Security Analyst</td>
<td>Bachelor’s</td>
</tr>
<tr>
<td>Database Administrator</td>
<td>Bachelor’s</td>
</tr>
<tr>
<td>Computer System Analyst</td>
<td>Bachelor’s</td>
</tr>
<tr>
<td>Computer Programmer</td>
<td>Bachelor’s</td>
</tr>
<tr>
<td>Computer Network Architect</td>
<td>Bachelor’s</td>
</tr>
<tr>
<td>Computer and Information Research Scientist</td>
<td>Doctoral or professional degree</td>
</tr>
</tbody>
</table>

Note: Adapted from U.S. Bureau of Labor Statistics (2014)

and efficient information systems (Aasheim, Li, Shropshire, & Kadlec, 2011). Generally speaking, a bachelor’s degree can help certified IT and IS practitioners broaden their knowledge and skills from a specialized topical area to a much larger domain. Plus, a college degree is a life-long credential, while certifications often expire in a few years. Table 2 is a list taken from the “Occupational Outlook” (U.S. Bureau of Labor Statistics, 2014). It specifies the entry-level education required to obtain IT or IS jobs. The level of education increases as the level of technology-intensive knowledge is required to perform the job.
Machinery (ACM) and its affiliations. The Computer Science Curricula 2013 is the latest version for CS curricula that defines eighteen (18) core knowledge areas to be covered by postsecondary CS curricula. (Association for Computing Machinery, 2013), as listed in Table 3. A typical four-year CS curriculum will require students to take a series of courses to cruise through these core knowledge areas.

**Table 3: Required Courses (CS vs CIS)**

<table>
<thead>
<tr>
<th>CS</th>
<th>CIS (✓: Core Course)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Computational Theories</td>
<td>(a) Foundations of Information Systems (✓)</td>
</tr>
<tr>
<td>(b) Discrete (Data) Structures</td>
<td>(b) Data Mining/Business Intelligence</td>
</tr>
<tr>
<td>(c) Computing for Graphics and Visualization</td>
<td>(c) Human Computer Interaction</td>
</tr>
<tr>
<td>(d) Intelligent Systems</td>
<td>(d) Collaborative Computing</td>
</tr>
<tr>
<td>(e) Human Computer Interaction</td>
<td>(e) Enterprise Architecture (✓)</td>
</tr>
<tr>
<td>(f) Parallel and Distributed Computing</td>
<td>(f) IT Infrastructure (✓)</td>
</tr>
<tr>
<td>(g) Architecture and Organization</td>
<td>(g) Enterprise Systems</td>
</tr>
<tr>
<td>(h) Systems Fundamentals</td>
<td></td>
</tr>
<tr>
<td>(i) Platform-based Development</td>
<td></td>
</tr>
<tr>
<td>(j) Information Security and Assurance</td>
<td>(h) IT Security and Risk Management</td>
</tr>
<tr>
<td>(j) Information Management</td>
<td>(i) IT Audit and Control</td>
</tr>
<tr>
<td>(j) Networking and Communications</td>
<td></td>
</tr>
<tr>
<td>(m) Programming and Scripting Languages</td>
<td>(j) Data and Information Management</td>
</tr>
<tr>
<td>(n) Software Development</td>
<td>(k) Information Search and Retrieval</td>
</tr>
<tr>
<td>(o) Software Engineering Fundamentals</td>
<td>(l) IT/IS Project Management (✓)</td>
</tr>
<tr>
<td>(p) Operating Systems</td>
<td>(m) Business Process Management</td>
</tr>
<tr>
<td>(q) Algorithms and Complexity</td>
<td>(n) Knowledge Management</td>
</tr>
<tr>
<td>(r) Social Issues and Professional Issues</td>
<td>(o) IS Strategy, Management and Acquisition (✓)</td>
</tr>
</tbody>
</table>

**Note:** Adapted from ACM (2013) and ACM (2010)
At the CIS side, IS 2010 Curriculum Guidelines is the latest version that defines the following seven core courses that all CIS students must take (ACM, 2010) as well as eleven elective courses that can guide students toward higher level of IT or IS specialties. Although Table 3 contains a list of these courses, and how to relate to the CS side of core courses, Figure 2 is a list taken from the IS 2010 Curriculum Guidelines to illustrate how the coursework structure of the IS 2010 model curriculum relates to the seventeen IT- or IS-specific job titles listed in Table 1, in which each job title is identified by a letter from A to Q.

**Figure 2: Structure of the IS 2010 Model Curriculum**

<table>
<thead>
<tr>
<th>Core IS Courses</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations of IS</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
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<tr>
<td>Enterprise Architecture</td>
<td>⬤</td>
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<tr>
<td>Strategy, Mgmt &amp; Acquisition</td>
<td>⬤</td>
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<td>Data &amp; Information Management</td>
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<tr>
<td>Collaborative Computing</td>
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<td>Data Mining / Biz Intelligence</td>
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<td>Enterprise Systems</td>
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<td>Human-Computer Interaction</td>
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<td>Information Search &amp; Retrieval</td>
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<td>IT Audit and Controls</td>
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<td>IT Security &amp; Risk Management</td>
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<tr>
<td>Knowledge Management</td>
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<td>Social Informatics</td>
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</table>

**Figure 2: Adapted from ACM IS 2010 Model Curriculum (2010)**
It is necessary to note that "application development" is a specific topical area needed by all IT and IS career tracks (A–Q), as shown in Figure 2. A career-oriented CIS curriculum should consider including "application development" in its major requirements.

*Table 4* compares the attributes of CS and CIS curricula. CS curricula typically provide students with a much broader overview of computing technologies, without emphasis on any particular career options. CS curricula focus more on computing theories and how they apply to the design of computing technologies. On the other hand, CIS curricula focus more on applying information technologies to develop information systems for practical use in an organization. One significant difference lies in the fact that design is the act of planning while development makes that design functional. This difference makes both curricula outstanding in their underlying foundations.

*Table 4: Curricular Attributes (CS vs CIS)*

<table>
<thead>
<tr>
<th>Curricular Attribute</th>
<th>CS</th>
<th>CIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation</td>
<td>Design</td>
<td>Development</td>
</tr>
<tr>
<td>Orientation</td>
<td>Research-oriented</td>
<td>Career-oriented</td>
</tr>
<tr>
<td>Pedagogy</td>
<td>Theory-based</td>
<td>Practice-based</td>
</tr>
<tr>
<td>Instructional Content</td>
<td>Knowledge-based</td>
<td>Technical-based</td>
</tr>
<tr>
<td>Subject Area</td>
<td>Generalized</td>
<td>Specialized</td>
</tr>
<tr>
<td>Knowledge Scope</td>
<td>Academic</td>
<td>Application</td>
</tr>
<tr>
<td>Expertise/ Specialty</td>
<td>Design</td>
<td>Development</td>
</tr>
<tr>
<td>Job Opportunities</td>
<td>Researcher/ Designer</td>
<td>Practitioner/ Developer</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Proficiency-based</td>
<td>Skill-based</td>
</tr>
</tbody>
</table>

*Note: The author uses these curricular attributes for comparison*

It is necessary to note that IT and IS practitioners typically work on developing information systems, not designing the underlying theoretical model. Therefore, professional certificates usually certify their qualifications to practice, not their ability to conduct academic research. As far as the curricular attributes are concerned, a CIS degree is presumably closer to IT and IS practitioners’ career objectives, as opposed to a CS degree.

**CIS Degree**

The seven core courses specified by IS 2010 Curriculum Guidelines, and an additional "application development" course, account for 24 semester credit hours. Taking into consideration that an associate’s degree usually requires 36 to 45 credits of major courses, plus the general education (GE) requirements, these eight courses make the curriculum highly IT- and IS-intensive for an associate degree program.

A bachelor’s degree in IT-related fields usually requires between 120 and 130 credit hours, and will lead students through a more in-depth, interdisciplinary overview of how to develop, build, and manage computer systems. The instructional content also leans more towards practical computing knowledge with an emphasis on the technology disciplines. A Bachelor of Science degree in CIS typically requires (but is not limited to) a combination of the following core courses:

- (a) Introduction to Programming (C++, Java, C#, or Visual Basic)
- (b) Hardware and Systems Software
- (c) Information Systems Applications
- (d) Data structures
- (e) Internet (Web) Application Development
- (f) Network/Information Security
- (g) Information Systems/Business Application Development
- (h) Information Systems Analysis and Design
- (i) Information Systems/Telecommunication Infrastructure and Networks
- (j) Database Administration and Implementation
- (k) Enterprise Applications Development
- (l) Project Management and Practice

Beyond the core courses, students must take a series of non-CIS courses, such as Writing or Reasoning (3–6 semester hours), Mathematics and Statistics (6 hours), Behavioral and Social Sciences (3–6 hours), and Management (3–6 hours).

Many schools allow students to take a narrowed list of CIS elective courses, usually at upper-division, to earn a concentration (also known as emphasis, track, or specialization). Sample options of concentration include Application Development; Business Intelligence, Cyber Security, Network Security, Network Administration, Database, and Software Development.
From Certification to Degree?
A thorough literature review conducted by the author found evidence of overlaps in educational content between certification training and degree programs in four areas: (a) collegiate programs for certification, (b) statewide articulation, (c) curricular topical areas, and (d) the rise of professional education. The following sections will discuss how certification training and CIS degree program are possibly two different pathways leading to one destination — landing a job.

Collegiate Programs for Certification
Many career colleges have aligned their instructional content to comply with core knowledge domains specified by certifications. San Joaquin Delta College (Stockton, CA), for example, offers a degree program that prepares students for an Associate in Science degree and the Cisco Certified Network Associate (CCNA) certification. University of Maryland at University Park partners with the Computing Technology Industry Association (CompTIA) to provide training programs for CompTIA certifications.

<table>
<thead>
<tr>
<th>Certification</th>
<th>Credits</th>
<th>Major</th>
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<tbody>
<tr>
<td>CCNA</td>
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<td>Computer Engineering Technology</td>
</tr>
<tr>
<td>CCNA</td>
<td>12</td>
<td>Networking Services Technology</td>
</tr>
<tr>
<td>CCNP</td>
<td>12</td>
<td>Computer Engineering Technology</td>
</tr>
<tr>
<td>CCNP</td>
<td>6</td>
<td>Networking Services Technology</td>
</tr>
<tr>
<td>CCNP</td>
<td>12</td>
<td>Telecommunications Engineering Technology</td>
</tr>
</tbody>
</table>

Note: Adapted from Florida Department of Education (2015)

Statewide Articulation
According to the Statewide Articulation Agreement, published by Florida Department of Education (Florida Department of Education, 2015), colleges in Florida can grant college credits to an earned certification. A Microsoft-certified Desktop Support Technician can apply three semester hours towards an associate's degree in IT fields: Computer Engineering Technology, Computer Information Technology, or Networking Services Technology. Similarly, a CompTIA A+ certified technician can transfer in six credit hours to a degree program in Computer Engineering Technology. Table 5 shows the number of credit hours to be granted to CCNA and Cisco Certified Network Professional (CCNP) holders when they enroll in an IT-related associate's degree program in Florida.

The web site of Western Governors University (WGU) also provides a list of certification that could directly transfer into WGU’s online IT degree programs for academic credit hours. The list is available at http://www.wgu.edu/admissions/it_certifications.
Table 6: Mapping of Topical Areas

<table>
<thead>
<tr>
<th>Career Option</th>
<th>IS 2010 Core Course</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Design and Administration</td>
<td>• IT Infrastructure&lt;br&gt;• Foundations of Information Systems</td>
<td>Network+, Server+, MCSA, CAN, CNE, CCNA, A+, CCDA, CCNP</td>
</tr>
<tr>
<td>Programming/Software Engineering</td>
<td>• Application Development&lt;br&gt;• Systems Analysis and Design&lt;br&gt;• Foundations of Information Systems</td>
<td>MCSD, SCJP, MCAD, MCSD.NET, MCSA, MCSE, SCSA</td>
</tr>
<tr>
<td>Database Administration</td>
<td>• Application Development&lt;br&gt;• Data and Information Management&lt;br&gt;• Systems Analysis and Design&lt;br&gt;• Fundamentals of Information Systems</td>
<td>MCDBA, Oracle DBO/DBA, OCA, OCPDBA</td>
</tr>
<tr>
<td>Security and Risk Management</td>
<td>• Information and Data Management&lt;br&gt;• Fundamentals of Information Systems</td>
<td>CISM, CISA, Security+, Network and Internet Security Specialist</td>
</tr>
<tr>
<td>Web Development/Design</td>
<td>• Application Development&lt;br&gt;• Systems Analysis and Design&lt;br&gt;• Fundamentals of Information Systems</td>
<td>I-Net+, CIW Web Development Professional, WOW Certified Web Development Professional</td>
</tr>
<tr>
<td>Project Management</td>
<td>• Project Management for IS&lt;br&gt;• Fundamentals of Information Systems</td>
<td>CAPM, Project+, CPM, MPM, PMP</td>
</tr>
<tr>
<td>Enterprise Architect</td>
<td>• Enterprise IS Architecture&lt;br&gt;• Strategy, Management, and Acquisition&lt;br&gt;• Fundamentals of Information Systems</td>
<td>Open CA, CITA, EACOE, CEA</td>
</tr>
</tbody>
</table>

Note: The author compiled this table by referencing ACM IS 2010 Model Curriculum (2010).

Curricular Topical Areas
With respect to Table 1, Table 6 attempts to map the instructional content of IS 2010’s seven core courses to the career options specified in the IS 2010 Model Curriculum that require sound technical knowledge of computing and information technology to develop, apply, use, and maintain computers, networks, communications, and software. Table 6 also provides sample certifications available to each career option and the IS 2010 core courses that cover the topical areas, in order to confirm that there is some parallelism between CIS core courses and certifications. It is necessary to note that many certifications overlap into multiple “topical areas.”

The Rise of Professional Education
Many universities have been providing professional education through their extension programs. The School of Professional Studies of Northwestern University (IL) offers three certificate tracks leading to CAPM, ACP and PMP certification from Project Management Institute, Inc. (PMI). The University of California Los Angeles (UCLA) Extension offers training programs for Cisco Certified Entry Network Technician (CCENT) and CCNA. Although these training programs do not grant college credits, students who passed certification exams can receive college credits when they enroll at other colleges, such as Western Governors University (WGU).

Competency-Based Education
Competency-based education is a pedagogy that (a) evaluates students academically through flexible pacing, (b) allows students to choose among learning formats, and (c) awards credit based on evidence of proficiency (Steele et al., 2014). This pedagogy recognizes individual differences of all students as of the day they are admitted to the program. Students are evaluated, individually, based on their self-paced learning outcomes and their capabilities of applying the learning materials with less regard to how long it takes to learn. Students can demonstrate their proficiency and mastery of a subject with substantial evidence, and advance from one course to another to complete the curriculum (Mendenhall, 2012). The learning time is not limited by semester; it can vary from a few weeks to a few months, depending on each individual student’s learning pace and how long it takes to master the subject. The learning methods are not bound to traditional lecture-based learning, and can be a combination of student-led independent study, computer-based learning, project-based hands-on activities, and so on.
In a traditional degree program, students are presumed to be “novice” in the field of study, and have to take a sequence of courses from the beginning (regardless of their current knowledge levels) unless they have transferable credits earned through previous college experience, credit by exam, military training, corporate training, or professional or industrial certifications. Competency-based education allows students to demonstrate their level of knowledge and skills to expedite their college learning journey. Unlike traditional degree programs, competency-based education adopts a variety of assessment strategies to measure the learning outcomes, known as “competency.” Assessment strategies include on-site demonstrations, research papers, hands-on projects, portfolios, to machine-scored objective tests (Johnstone & Soares, 2014). In the case of WGU, faculty mentors work closely with students of competency-based programs to select learning resources to prepare for assessments. Sample resources include printed or digital textbooks, emulator or simulations, virtual labs (including e-learning modules and study guides), and on-site or online tutorials (Klein-Collins, 2012).

Table 7 compares traditional time-based with competency-based education. The main difference is that competency-based education emphasizes less on time-based instructional models to allow greater adaptability and flexibility, and is highly learner-centered (Frank et al., 2010).

Table 7: Comparisons of Attributes

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Traditional time-based</th>
<th>Competency-based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Instructional materials</td>
<td>Relevant competence</td>
</tr>
<tr>
<td>Curricular structure</td>
<td>Course by course</td>
<td>Topical area</td>
</tr>
<tr>
<td>Pace</td>
<td>Schedule-paced</td>
<td>Self-paced</td>
</tr>
<tr>
<td>Goal</td>
<td>Knowledge acquisition</td>
<td>Knowledge application</td>
</tr>
<tr>
<td>Actors</td>
<td>Teacher to learner</td>
<td>Teacher to learner</td>
</tr>
<tr>
<td>Assessments</td>
<td>Retention of knowledge and skills, attitudes</td>
<td>Outcomes demonstration of competence</td>
</tr>
<tr>
<td>Program completion</td>
<td>Fixed time</td>
<td>Variable time</td>
</tr>
</tbody>
</table>

Note: Adapted from Tannenbaum et al. (2011)

If requiring certified IT and IS practitioners to repeat the learning of knowledge and skills they have already mastered is deemed redundant and time- and cost-ineffective, then competency-based education is probably a more feasible model for a few reasons: (a) assessment is based on competence to apply knowledge and skills, not how to memorize them; (b) learning is self-paced with less respect to time; (c) students can utilize their prior learning experience to accelerate the educational process; and (d) it is a learner-centered model. Students can flexibly advance to the topical area they have not yet mastered.

There are few concerns about competency-based education that must be addressed. First, competency-based education is a relatively new practice at the collegiate level, although its concept was introduced in the 1970s (Klein-Collins, 2012). There is no reference available for curricular developers, particularly regarding how the instructional content could comply with accreditation requirements and how employers value degrees of competency-based education in order to develop a novel, practical, and accredited career-oriented education to meet the IT/IS practitioners’ needs. Second, even if the government has recognized competency-based education as a model for earning postsecondary degrees or other credentials (U.S. Department of Education, 2013), it might be momentarily categorized as a non-traditional, non-mainstream, and unorthodox model of education. Appendix A is a list of U.S. colleges and universities that have adopted the competency-based education model (Klein-Collins, 2012).
On the other hand, there does not exist a clear definition for terms like “proficiency,” “mastery,” and “competence,” not to mention a standardized, quantitative way to interpret them. Many of the pedagogies, assessment strategies, and success stories of competency-based education do not have a sufficient amount of historical data as pervasive evidence. The efficiency, effectiveness, and productivity probably should be further investigated for the sake of accreditation. As of the time this paper is written, how well employers accept degrees from a competency-based program is unknown.

**Conclusion**

In the past, those who need to obtain industry-specific knowledge and skills to land a job within the shortest time can attend training programs that can prepare them for passing professional or industrial certifications. However, this paper found that (a) at least 36% of IT and IS practitioners do not possess a college degree, (b) college degree becomes a hiring requirement for IT and IS positions, (c) certification is quickly losing its position as a substitution to college degree programs, and (d) there exist constraints that possibly hinder these professionals from enrolling in a traditional degree program in their fields of specialty.

This paper also finds CIS being the ideal program for IT and IS practitioners, confirms the redundancy for a certified IT or IS practitioner to re-learn the content he or she has already mastered, and suggests that the rising competency-based education a feasible alternative for certified IT or IS practitioners to expedite their journey to college degree. In other words, it is feasible for career-oriented colleges to offer a competency-based CIS degree for certified IT and IS practitioners. Since postsecondary education is a life-long, sustained investment, and it usually takes two to four years to earn an accredited degree, this paper also seconds Mendenhall’s (2012) finding and suggests that competency-based education is a more efficient pedagogy for the 37 million American adults with some college but no degree. Academia should not overlook the opportunities a competency-based CIS degree can bring to certified non-degree-holding IT and IS practitioners. After all, a college degree provides accredited and life-long evidence of the capability to learning and obtaining knowledge and skills, while certifications only reflect mastery of specialized topical areas.
References

Aasheim, C., Li, L., Shropshire, J., & Kadlec, C. (2011). *IT program curriculum recommendations based on a survey of knowledge and skill requirements for entry-level IT Workers.* Department of Information Technology Faculty Research and Publications.


Appendix A

Schools that offer Competency-based Education

<table>
<thead>
<tr>
<th>School</th>
<th>State</th>
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<tbody>
<tr>
<td>Alverno College</td>
<td>WI</td>
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<tr>
<td>Bellevue University</td>
<td>WA</td>
</tr>
<tr>
<td>Brandman University</td>
<td>CA</td>
</tr>
<tr>
<td>Capella University</td>
<td>MN</td>
</tr>
<tr>
<td>Delaware County Community College</td>
<td>PA</td>
</tr>
<tr>
<td>DePaul University</td>
<td>IL</td>
</tr>
<tr>
<td>DeVry University</td>
<td>IL</td>
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<tr>
<td>Empire State College</td>
<td>NY</td>
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<td>Excelsior College</td>
<td>NY</td>
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<tr>
<td>Kentucky Community and Technical College</td>
<td>KY</td>
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<tr>
<td>Marylhurst University</td>
<td>OR</td>
</tr>
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<td>North Arizona University</td>
<td>AZ</td>
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<tr>
<td>Rio Salado College</td>
<td>AZ</td>
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<td>Southern New Hampshire University</td>
<td>NH</td>
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<tr>
<td>Tusculum College</td>
<td>TN</td>
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<tr>
<td>University of Maryland University College</td>
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<tr>
<td>University of Minnesota Medical School</td>
<td>MN</td>
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<tr>
<td>University of Toledo</td>
<td>OH</td>
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<tr>
<td>University of Wisconsin Colleges</td>
<td>WI</td>
</tr>
<tr>
<td>University of Wisconsin at Milwaukee</td>
<td>WI</td>
</tr>
<tr>
<td>Western Governors University</td>
<td>UT</td>
</tr>
<tr>
<td>Westminster College</td>
<td>UT</td>
</tr>
</tbody>
</table>

Note: This is a list of U.S. colleges and universities that have adopted competency-based education model (Klein-Collins, 2012).
Understanding Potential First-Generation College Students: Analyzing High School Conditions and College Application Activity

Thomas Eveland,
DeVry University, College of Liberal Arts & Sciences and College of Business & Management

Abstract
First-generation college students are enrolling in colleges and universities throughout the United States. Advocates for students in this population must find new ways to understand influences that affect this group’s attitude towards higher learning to ensure their participation in higher education continues to grow. This study used non-experimental quantitative analysis of nationally representative data to determine whether physical conditions of the high school environment were correlated with the college-going behavior of potential first-generation college students. The findings of the analyses failed to support the hypothesis that the physical condition of the high school would play a role in the college-going activities of students. These findings invite further research and discussion centering on secondary school environments, which are often key topics in budgetary and policy debates at local, state, and federal levels.

Keywords: First-generation College students, Environmental influences, High school conditions, Enrollment behaviors

First-generation college students make up a significant portion of college students in the United States (Ishitani, 2003; Warburton, Bugarin, & Nunez, 2001; Ward, Siegel, & Davenport, 2012). A 2010 U.S. Department of Education study reported that in the 2007-2008 school year, first-generation college students made up 51% of the student body at two-year institutions and 38% of the student body and four-year institutions. Not only are these students enrolling at high levels, but they are more likely than their non-first generation peers to be under prepared academically (Warburton et al., 2001), have low levels of self-efficacy (Ward et al., 2012), and have external issues which distract them from education goals (Bradbury & Mather, 2009). Advocates for students in this population must find new ways to understand influences that affect first-generation college students’ academic performance and attitudes towards higher education.

The study of first-generation college students has led to a wealth of knowledge about this group’s preparation for, and performance in, higher education in the United States (ACT, 2013; Bowen, Chingos, & McPherson, 2009; Bradbury & Mather, 2006; Ishitani 2003, 2006; Padgett, Johnson, & Pascarella, 2012; Warburton et al., 2001). An unmistakable trend throughout first-generation college student research is that first-generation college students are often less prepared for the academic rigor and social milieu of postsecondary institutions. Further, these students are more likely than their non-first-generation college student counterparts to have lower aspirations concerning higher education and are less likely than their non-first-generation college student counterparts to succeed in post-secondary
settings. The consistency of these findings throughout decades of research mandates that researchers and educators must better understand and support this group. Below, literature providing quantitative analyses of first-generation college student outcomes and qualitative accounts of first-generation college students’ experiences is detailed to provide context for this study and illuminate the gap in research this study addresses by exploring potential relationships between the conditions of secondary school facilities and college-going behaviors.

Outcome-Based Quantitative Research
Warburton et al. (2001) analyzed data from the 1998 Beginning Postsecondary Students Longitudinal Study to explore correlations between the rigor of first-generation college students’ high school curricula, the population diversity of the high school, the high school location, and other attributes of the secondary experience with post-secondary enrollment and performance. The authors observed that high school rigor, type, and setting may play a role in predicting college success in first-generation college students. What was not presented in the analysis, however, was the study of the physical environment of the high school. First-generation students’ responses concerning the condition of their physical facilities were not taken into account when secondary curricular choices and college preparation were discussed.

Chen (2005) examined the post-secondary transcripts data of approximately 9600 college students to better understand behaviors of first-generation college students. Similar to the findings in Warburton et al. (2001), Chen observed that first-generation college students were more likely than their non-first-generation college student peers to begin their education at two-year institution, were less likely to obtain a degree, were likely to have lower GPAs, and were less likely to complete all enrolled courses without penalty. This study added much value to the national dialogue supporting first-generation college students, but did not include any factors about the condition of the high school that may influence college-going behaviors of first-generation college students in the analysis. Analysis of factors such as high-school disrepair and physical conditions may have further explained college-going behaviors of first-generation college students but was not included in covariance calculations.

Other quantitative reports confirmed similar results (Engle, Bermeo & O’Brien, 2006; Pascarella, Wolniak, & Terenzini, 2004; Pike & Kuh, 2005). The trends in the literature often point to the disadvantages first-generation college students have in the post-secondary setting. These studies often use complex methods and national data to advocate for the support of these students; however, there is more to learn about whether the physical conditions of the secondary buildings influence enrollment in post-secondary institutions. Below, a review of important qualitative works provides another perspective of literature describing this important group.

Qualitative Studies of First-Generation Students
In 2009, Bradbury and Mather explored the experiences of first-generation college students in Appalachia, Ohio. The authors’ research focused on first-generation college students’ experiences while transitioning into higher education. First-generation college students discussed how aspects of high school affected their college experience. In some instances, students appeared to have an emotional connection with the social environment of the high school, which affected their actions in college. Social aspects of high school experiences and the high school’s role in building aspirations for higher education were topics of discussion. The study posited that experiences in secondary education can indeed affect perceptions of higher education, but excludes how the physical conditions of high schools may play a role in the development of these feelings.

Reid and Moore (2008) used social capital theory to frame their research on first-generation college students’ transitions from high school to college. Central themes that emerged from the interviews of these students aligned with many of those discussed in other first-generation college student research. The cited issues that fell under themes of “preparation which helped with college success” (p. 246) and “skills lacking for college success” (p. 251). An interesting concept that appeared to surface in Reid and Moore (2008) that was not salient in Bradbury and Mather (2009) was the geographical context of the secondary school. This is of particular interest to this investigation of physical environments as geographic location, which may be directly related to resource availability in many cases, is certainly an aspect of the physical environment. As seen in other articles, the secondary school environment was shown to have a lasting impact of the students’ behavior surrounding higher education; however, the physical conditions were not explored.

Although the research above is informative, key elements are often overlooked in the design of these studies. The post-matriculation design omits input from, and analysis of, potential first-generation
college students who never matriculate after high school. Input from those students whose parents have not obtained a bachelor’s degree who do not enroll in higher education is equally important in understanding and supporting this group. Additionally, many studies of first-generation college students include analysis of some aspects of their high school experience, but very few have considered the physical conditions in which secondary-level learning takes place. This important aspect is frequently overlooked as studies of high school activity of first-generation college students tend to focus on curricular rigor and course outcomes. Considering the influences of the physical conditions of secondary schools not only allows for a more complete sample to be studied by including those who do not matriculate, but will also give insights into important factors driving college-going behaviors.

There is a dearth of research examining the secondary experiences of potential first-generation college students, and particularly so when considering influences of physical conditions of learning environments on potential first-generation college students who never matriculate. Important influences can be identified by exploring relationships between physical conditions of high schools and potential first-generation college students’ college application behaviors. Exploring associations among these variables is important in supporting this often marginalized group for two key reasons. Initially, this dataset provided insights into relationships between the physical environment and applying to enroll in higher education. This allowed the analysis to transcend outcome-based reports which are often limited to examination of transcripts, test scores, and curricular rigor. Second, this study is unique in that the longitudinal nature of the data will allow for an analysis of relationships between the physical environments and college application behavior for potential first-generation college students’ who choose not to matriculate. This important subgroup is often missing from first-generation college student research which often takes place on a college campus or examines post-secondary outcomes of first-generation college students.

**Definition of Terms**

Before examining the outcomes of this study, it is important to precisely define this group. Many definitions have been assigned to the term first-generation student in study and practice. The continuum of definitions can range from the least inclusive, which requires that neither parent has obtained any education after high school, to the most inclusive, which states that neither parent has earned a bachelor’s degree. Two items tend to influence researchers’ decisions considering which definition best fits their study: the basis of the research and the need for an appropriate sample size.

Concerning the basis of research, one may argue that students whose parents have not had a successful experience in higher education do not benefit from the same level of social and cultural capital as those whose parents have graduated. This viewpoint would encourage researchers to examine all students whose parents have not completed a bachelor’s degree as simply having parents who began college may not provide the same intergenerational benefits as having parents who successfully completed a college degree.

Concerning sample size, researchers may find that the least inclusive definition of first-generation college student may not render enough students for normalized or representative data. This may be especially true when studying first-generation college students at elite institutions (Bowen et al., 2009). This lack of sample size (and potentially statistical significance) may force researchers to broaden the definition to more inclusive requirements. In this study, the most inclusive definition – students whose parents have not completed a bachelor’s degree – was used. Additionally, the term “potential first-generation college student” (potential first-generation college student) is used to identify a high school student whose parents have not graduated with a bachelor’s degree.

**Research Question**

Multiple theories of student development and developmental ecology have been widely accepted in understanding how physical aspects of learning environments affect academic and social behaviors of students in primary and secondary education (Bronfenbrenner, 1979) and higher education (Strange & Banning, 2001). A common tenant of theories of ecological development posits that physical aspects of the learning environment can positively or negatively affect academic behaviors and decision making. This study’s focus on exploring relationships between high school conditions and college application activity of a marginalized group in higher education is grounded in the findings of such research.

This analysis examined data from the National Center for Educational Statistics’ (NCES) Education Longitudinal Study of 2002 (ELS) and the second follow-up in 2006 to determine whether relationships exist between the perception of the physical environments of the secondary institution and the level of activity surrounding the higher education application process for students whose parents have
not completed a degree. Specifically, the research question guiding the design of this study asks: Does a relationship exist between potential first-generation college students’ perceptions of their secondary schools’ conditions and their likelihood of applying for college?

The null and alternative hypotheses tested in exploring this research question are:

\[ H_0 = \text{No relationship exists between the perceived conditions of the secondary institutions and potential first-generation college students’ post-secondary application activity.} \]

\[ H_A = \text{A relationship exists between the perceived conditions of the secondary school and potential first-generation college students’ post-secondary application activity in which poor high school conditions will result in a reduced likelihood of applying to college.} \]

**Method**

The sample data used in the analyses below were obtained from the National Center for Educational Statistics’ (NCES) Education Longitudinal Study of 2002 (ELS) and the second follow-up in 2006. The ELS study from NCES is advantageous as it provided a large number of cases \((n=16,197)\), uses complex sampling procedures, is nationally representative, and includes secondary and postsecondary data. Although the initial surveys were completed in 2002, the study is ongoing with more data to be released in Spring 2015. More data has been released since the 2006 follow-up, but the 2006 data is appropriate for this research as allowing more time between leaving the secondary school (predictor variable) and enrolling into college (outcome variable) weakens any argument of causation. Including students who entered higher education an extended time after leaving the high school building may cause a bias in the data as the effects of the secondary school experience tenably weaken over time and confounding variables may be introduced. Thus, using the data on conditions and behaviors that occurred between 2002 and 2006 provided an excellent snapshot of data on this group.

The dataset was stratified by parental education to separate non- and potential first-generation college students. The predictor variables examined include the high school students’ responses when asked whether they have or have not seen trash, graffiti, broken lights, and other physical characteristics of their secondary school buildings that signify neglect or may perpetuate a negative perception of the learning environment. These binary, dichotomous predictor variables represent the conditions of three main areas of the buildings: the hallways, the bathrooms, and the classrooms. Behaviors of predictor variables and the outcome variable — whether the students applied to a post-secondary institution — were examined to explore a potential relationship between potential first-generation college students’ perceptions of the physical facilities of their secondary schools and students’ college application activity.

The use of Stata statistical analysis software allowed for statistical models that employ strata, weights, and clusters created by the complex survey design of ELS to improve the accuracy of the findings. Stata statistical software was used to perform cross tabulation, correlation, and logistic regression analysis to explore potential relationships among variables. The findings of the analyses are presented below.

**Findings**

Table 1 (see next page) provides a brief overview of the total students used in the analysis. The data collected provided characteristics of 16,197 students. Within this population, 9,257 students self-identified as having parents who have not completed a bachelor’s degree and were classified as potential first-generation college students. More potential first-generation college students may exist, but records with invalid and missing answers concerning parental education were omitted. Through this table, it can be observed that although more potential first-generation college student than non-potential first-generation college students responded, potential first-generation college student appear to be far less likely to apply to a post-secondary institution. Of the 9,257 potential first-generation college students, roughly two-thirds \((n=6,249)\) responded that they have applied to college. Conversely, more than 86% \((n=3,464)\) of students with at least one parent holding a bachelor’s degree \((n=4,014)\) have applied to college. This finding aligns with the review of literature previously presented by observing that first-generation college students are less likely to pursue higher education.
Table 1: Overview of Records Examined from Education Longitudinal Study of 2002

<table>
<thead>
<tr>
<th>Records</th>
<th>N</th>
<th>Percentage of Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Student Records</td>
<td>16,197</td>
<td></td>
</tr>
<tr>
<td>Total Identified Potential First-Generation College Students</td>
<td>9,257</td>
<td></td>
</tr>
<tr>
<td>Total First-Generation Identified as Applied to Post-Secondary Institution</td>
<td>6,249</td>
<td>67.5%</td>
</tr>
<tr>
<td>Total Identified Non-Potential First-Generation College Students</td>
<td>4,014</td>
<td></td>
</tr>
<tr>
<td>Total Non-First-Generation Students Identified as Applied to Post-Secondary Institution</td>
<td>3,464</td>
<td>86.3%</td>
</tr>
</tbody>
</table>

Note: Potential first-generation college student status determined by identification of parental education in the base year survey of ELS. Missing and invalid data may affect the actual proportion of first-generation college students in the population.

Table 2 provides initial insights into the possibility of a relationship between potential first-generation college students’ perception of the secondary building conditions and applying to a post-secondary institution. The data are presented using cross tabulation analysis. As can be seen in the table, very little association can be assigned to these two variables. The cross tabulation analysis suggests that students are far more likely than not to apply to a post-secondary institution regardless of their perception of the facilities. In no instances were potential first-generation college students who reported trash on the hallway floors, overflowing trashcans, broken lights, or graffiti in the hallway less likely to apply to a post-secondary institution.

Table 2: Summary of Crosstabs Analysis for Hallway Conditions

<table>
<thead>
<tr>
<th>Condition Variable</th>
<th>Response</th>
<th>Ever Applied to Post-Secondary Institution?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trash on Hallway Floors</td>
<td>No</td>
<td>21.0% 72.2%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>1.7% 5.1%</td>
</tr>
<tr>
<td>Overflowing Trashcans in Hallway</td>
<td>No</td>
<td>22.3% 76.4%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>0.3% 0.9%</td>
</tr>
<tr>
<td>Broken Lights in Hallway</td>
<td>No</td>
<td>22.1% 75.9%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>0.6% 1.4%</td>
</tr>
<tr>
<td>Graffiti on Hallway Walls/Doors/Ceiling</td>
<td>No</td>
<td>22.2% 76.0%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>0.5% 1.3%</td>
</tr>
</tbody>
</table>

Note: Trash on Hallway Floors (N = 8,037), Overflowing Trashcans in Hallway (N=7,996), Broken Lights in Hallway (N=8,025), Graffiti on Hallway Walls/Doors/Ceiling (N=7,992). Total of percentages may not equal 100% due to rounding.

Table 3 outlines results of measuring association between the variables with Pearson’s Correlation and suggests similar insights to the analysis in Table 2. In no case is even a moderate correlation found, and in only 1 in 4 cases was the result statistically significant at the p < .05 level. Based on the measurement of potential first-generation college students’ perception of hallway conditions and college application activity, the null hypothesis cannot be rejected. The measurement of the conditions of the hallway, however, is only one of three aspects measured concerning physical conditions of the secondary facilities.

Table 3: Correlation among Hallway Conditions and Applying to a Postsecondary Institution

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measure</th>
<th>Ever Applied to Post Secondary Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trash on Hallway Floors</td>
<td>Pearson</td>
<td>-0.017</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.133</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>8,037</td>
</tr>
<tr>
<td>Overflowing Trashcans in Hallway</td>
<td>Pearson</td>
<td>-0.012</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.267</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,996</td>
</tr>
<tr>
<td>Broken Lights in Hallway</td>
<td>Pearson</td>
<td>-0.022</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.047**</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>8,025</td>
</tr>
<tr>
<td>Graffiti on Hallway Walls/Doors/Ceiling</td>
<td>Pearson</td>
<td>-0.012</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.286</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,992</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.05 level (2-tailed).

The analysis of a potential relationship between the physical conditions of the bathrooms in the secondary school buildings of potential first-generation college students and post-secondary application activity yields similar results to those found in Table 2 and Table 3. Table 4 outlines details into the potential relationships between variables. As seen in the cross tabulation analysis below, students were still far more likely than not to apply to a post-secondary institution even if they reported seeing trash on the bathroom floor, overflowing trashcans in the bathroom, and graffiti on the bathroom walls, ceilings, and doors.
Table 4: Summary of Crosstabs Analysis for Bathroom Conditions

<table>
<thead>
<tr>
<th>Condition Variable</th>
<th>Response</th>
<th>Ever Applied to Post-Secondary Institution?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trash on Bathroom Floors</td>
<td>No</td>
<td>19.2%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>3.6%</td>
</tr>
<tr>
<td>Overflowing Trashcans in Bathroom</td>
<td>No</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>1.2%</td>
</tr>
<tr>
<td>Graffiti on Bathroom Walls and Ceilings</td>
<td>No</td>
<td>21.9%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>0.9%</td>
</tr>
<tr>
<td>Graffiti on Bathroom Walls and Doors</td>
<td>No</td>
<td>21.4%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

Note: Trash on Bathroom Floors (N = 7,908), Overflowing Trashcans in Bathroom (N=7,800), Graffiti on Bathroom Walls and Ceiling (N=7,977), Graffiti on Bathroom Stall Walls and Doors (N=7,929). Total of percentages may not equal 100% due to rounding.

Table 5 reports the results of using Pearson’s Correlation to measure any possible relationship between the bathroom conditions and application activity. Only 1 of the 4 observations made by potential first-generation college students had statistically significant relationships at the p < .05 level, and the correlation in each case was so low that any level of relationship could not be argued. As with the observations in Tables 2 and 3, the information provided in Tables 4 and 5 does not allow the rejection of the null hypothesis that no relationship exists between potential first-generation college students’ perception of their physical secondary school facilities and their post-secondary application activity.

Table 5: Correlation among Bathroom Conditions and Applying to a Postsecondary Institution

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measure</th>
<th>Ever Applied to Post Secondary Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trash on Bathroom Floors</td>
<td>Pearson</td>
<td>-0.017</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.111</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,908</td>
</tr>
<tr>
<td>Overflowing Trashcans in Bathroom</td>
<td>Pearson</td>
<td>-0.013</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.238</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,800</td>
</tr>
<tr>
<td>Graffiti on Bathroom Walls and Ceilings</td>
<td>Pearson</td>
<td>-0.012</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.268</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,977</td>
</tr>
<tr>
<td>Graffiti on Bathroom Walls and Doors</td>
<td>Pearson</td>
<td>-0.028</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.010**</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,929</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.05 level (2-tailed).

The data presented in Table 6 (see next page) aligns with the findings in the earlier analyses. Similar to the findings when exploring a potential relationship between potential first-generation college students’ perception of the physical conditions of the hallway and bathroom, potential first-generation college students’ perception of the classroom conditions had no substantial association with post-secondary application activity. Analyzing the data through cross tabulation analysis suggests that students who reported trash on the classroom floors, broken lights in the classroom, and graffiti on the classroom walls, ceilings, doors, and desks are still very likely to apply to a post-secondary institution.
### Table 6: Summary of Crosstabs Analysis for Classroom Conditions

<table>
<thead>
<tr>
<th>Condition Variable</th>
<th>Response</th>
<th>Ever Applied to Post-Secondary Institution?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trash on Classroom Floors</td>
<td>No</td>
<td>21.7% 73.9%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>1.1%  3.3%</td>
</tr>
<tr>
<td>Broken Lights in Classroom</td>
<td>No</td>
<td>22.5% 76.1%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>0.24% 1.2%</td>
</tr>
<tr>
<td>Graffiti on Classroom Walls/Ceiling/Doors</td>
<td>No</td>
<td>23.9% 76.9%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>0.13% 0.37%</td>
</tr>
<tr>
<td>Graffiti on Classroom Desks</td>
<td>No</td>
<td>21.6% 72.4%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>1.6%  4.3%</td>
</tr>
</tbody>
</table>

*Note: Trash on Classroom Floors (N = 7,955), Broken Lights in Classroom (N=7,957), Graffiti on Classroom Walls/Ceiling/Doors (N=7,945), Graffiti on Classroom Desks (N=7,923). Total of percentages may not equal 100% due to rounding.*

Table 7 outlines the results of using Pearson’s Correlation to explore potential associations between high-school classroom conditions and college application activity. The data in Table 7 further suggests that the perception of the secondary schools’ classroom facilities has no relationship with post-secondary application activity. The correlation analysis suggests that in only one situation is there a statistically significant correlation at the p < 0.05 level between the observations reported concerning facility conditions and applying to a post-secondary institution. No material correlations between the perception of the conditions of classrooms and college application activity could be seen in any of the four variables. Thus, the null hypothesis that there is no relationship between the reported observations of physical secondary facilities of potential first-generation college students and applying to a post-secondary institution cannot be rejected.

### Table 7: Correlation among Classroom Conditions and Applying to a Postsecondary Institution

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measure</th>
<th>Ever Applied to Post Secondary Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trash on Classroom Floors</td>
<td>Pearson</td>
<td>-0.007</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.513</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,955</td>
</tr>
<tr>
<td>Broken Lights in Classroom</td>
<td>Pearson</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.121</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,957</td>
</tr>
<tr>
<td>Graffiti on Classroom Walls/Ceiling/Doors</td>
<td>Pearson</td>
<td>-0.007</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.533</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,945</td>
</tr>
<tr>
<td>Graffiti on Classroom Desks</td>
<td>Pearson</td>
<td>-0.024</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.032**</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>7,923</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.05 level (2-tailed).**

Table 8 provides the results of examining potential associations of the variables used to measure the physical conditions of secondary school environments and applying to a post-secondary institution using logistic regression. The results align with previous findings in that the null hypothesis cannot be rejected. A statistically significant relationship at the p < 0.05 level only existed in 3 of the 12 measurements. Additionally, the directionality of the correlations in the three statistically significant measurements varied. Reporting graffiti on the bathroom doors and walls and reporting seeing trash on the hallway floors were negatively correlated with applying to a postsecondary institution. Paradoxically, reporting broken lights in the classroom was positively correlated with applying to a post-secondary institution. Due to the conflicting positive and negative correlations of these indicators of poor conditions and the lack of other statistically significant relationships, the null hypothesis that the physical conditions of the secondary school is not associated with applying to a post-secondary institution cannot be rejected.
Table 8: Logistic Regression Analysis of Physical Conditions and Post-Secondary Application Activity

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Linearized Coefficient</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trash on Hallway Floors</td>
<td>-0.2523</td>
<td>0.1200</td>
<td>-2.10</td>
<td>0.036**</td>
</tr>
<tr>
<td>Overflowing Trashcans in Hallway</td>
<td>-0.3836</td>
<td>0.2918</td>
<td>-1.31</td>
<td>0.189</td>
</tr>
<tr>
<td>Broken Lights in Hallway</td>
<td>-0.1731</td>
<td>0.1816</td>
<td>-0.95</td>
<td>0.341</td>
</tr>
<tr>
<td>Graffiti on Hallway Walls/Doors/Ceilings</td>
<td>-0.3684</td>
<td>0.2523</td>
<td>-1.46</td>
<td>0.145</td>
</tr>
<tr>
<td>Graffiti on Bathroom Walls and Ceilings</td>
<td>-0.2894</td>
<td>0.1746</td>
<td>-1.66</td>
<td>0.098</td>
</tr>
<tr>
<td>Graffiti on Bathroom Doors and Walls</td>
<td>-0.1815</td>
<td>0.0896</td>
<td>-2.03</td>
<td>0.043**</td>
</tr>
<tr>
<td>Trash on Bathroom Floor</td>
<td>-0.1227</td>
<td>0.0901</td>
<td>-1.36</td>
<td>0.175</td>
</tr>
<tr>
<td>Overflowing Trashcans in Bathroom</td>
<td>-0.1864</td>
<td>0.139</td>
<td>-1.34</td>
<td>0.181</td>
</tr>
<tr>
<td>Broken Lights in Classroom</td>
<td>0.3691</td>
<td>0.1627</td>
<td>2.27</td>
<td>0.024**</td>
</tr>
<tr>
<td>Graffiti on Classroom Walls/Doors</td>
<td>-0.2564</td>
<td>0.2659</td>
<td>-0.96</td>
<td>0.335</td>
</tr>
<tr>
<td>Graffiti on Classroom Desks</td>
<td>-0.1001</td>
<td>0.0117</td>
<td>-0.85</td>
<td>0.395</td>
</tr>
<tr>
<td>Trash on Classroom Floor</td>
<td>-0.9567</td>
<td>0.1632</td>
<td>-0.59</td>
<td>0.558</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.05 level (2-tailed).

Discussion

At the onset, the research questions were designed with the assumption that data would confirm that the cleanliness and physical conditions of their secondary school buildings would impact potential first-generation college students’ activity concerning the college enrollment process. As noted in studies of developmental ecology, physical conditions and aspects of learning environments have been shown to affect perceptions of higher education, academic decisions, and persistence in higher education (Bronfenbrenner, 1979; Strange & Banning, 2001). As seen in the literature review, high school experiences can have a lasting effect on college-going behaviors, especially of first-generation students. Based on these theories, it was a tenable supposition that poor physical conditions of the secondary learning environment may send negative signals about the importance of education, and further deter students from applying for education at the post-secondary level. The findings of this study cannot confirm, however, that poor physical conditions, as measured above, have any significant effect on the likelihood of a potential first-generation college student applying to college.

The findings of this study have many implications, most important of which are policy considerations and the counter-theory activity of the population studied. The findings above should give pause to administrators and policy makers whose ideologies suggest spending tax dollars on physical improvements to motivate behaviors of high school students. Although the findings of this study are limited to behaviors surrounding applying to college, making capital improvement decisions to influence academic behaviors should be done with caution. In a “throw-money-at-the-problem” society, the findings in this research clearly show that further spending on buildings and improvements is not necessarily an effective action and research is required. Second, researchers should be cautious to avoid over generalizing when applying development theories to varying populations. Ecological theories of development are popular in research, but the counter-theory findings of this study reinforce the need for empirical studies of specific populations.

Future Research

For those studying environmental influences on marginalized students, the obvious next question is, “If cleanliness, upkeep, and repair as measured in this study do not influence students’ pursuit of higher education, what does?” This is an excellent motivator for expanded research on potential first-generation college students. The physical environments of the secondary schools need to be further analyzed to see whether relationships exist between other aspects of the physical learning environments and students’ behaviors concerning applying to college. How potential first-generation college students perceive their secondary education venues and how attitudes and values created by their learning space may relate to their pursuit of higher education is ripe for exploration. In addition to traditional environments, a dearth of information exists about how students who complete secondary school online perceive higher education, and how this growing group will be impacted by learning in physical environments outside of traditional secondary school buildings.
References


Grade Inflation and Student Evaluations of Teaching: The Loss of the Professor and Diminished Education

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Abstract

This paper reviews the literature regarding adverse impacts of student evaluation of teachers, which include unethical student practices, lower literacy rates among graduates, and poor workplace ethics. The goal of this paper is to bring the problems attending student evaluations into a renewed conversation, invite further dialogue through research, and work toward solutions. The first section focuses on grade inflation, starting with the history of the grading system before exploring problems inherent in the grading system, and causes and effects of grade inflation. The second section focuses on student evaluation of teaching (SET), specifically to explore the problems inherent in SETs, correlation of grade inflation to SETs, correlation of expected grades and SETs, the “chili pepper effect” of RateMyProfessors.com, and the bigger loser in SETs: women. The paper ends in the final section with consequences of the grading and evaluation system, specifically the larger social issues.

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Keywords: Grading, Grade inflation, Student evaluation of teaching (SET) research

The Harvard Crimson reported two years ago that its average grade was an A-, and its most common grade was an A (Clarida & Fandos, 2013), news that was met with a variety of reactions, from embarrassment on the part of the institution to scorn and derision from some, and cautious understanding from others. Most view Harvard’s practice as a result of increasingly relaxed grading procedures over time, resulting in reputedly diminished educational value where it is commonly assumed that “everyone gets an A.” After being called the “laughing stock of the Ivy League,” in 2002 for awarding “cum laude” honors to 91% of its graduating class (Alter, 2013), Harvard restructured its grading system and awards criteria. Still, the problem of grade inflation persists, as if to remove the specter of mediocrity as an option (Trachtenberg, 2013). Critics claim that if everyone receives high grades, it is because the curriculum is undemanding, and standards need to be raised; they are not buying the argument that admission standards at Harvard are high, and therefore, high grades can be legitimately expected (Lewis, 2006).

In the “laughing stock” period at Harvard, a professor revealed that he awarded two sets of grades to his students: an “ironic” grade for the registrar, and a “real,” unrecorded grade, representing what the student actually deserved. It would be unfair to his students to record the “real” grade, he maintained, as it would punish them for choosing him (Lawler, 2001). This appears to be a puzzling explanation for a grading system, except that, in the context of student evaluations of teaching, he is right on target. According to research presented in this paper, awarding higher grades, whether earned or not, has been connected to stronger student evaluations of
teaching (SET). Furthermore, students who expect to get A’s in a class tend to reward the professor with glowing SETs, which have been shown to correlate to a set of other attributes, some unrelated to teaching and learning.

The consequences of grade inflation and tainted SETs are troublesome: students rewarded with undeserved grades enter the workforce with less-than-stellar knowledge, and employers denigrate the educational system for producing such underachievers. Faculty who consistently earn top SETs quickly reap the benefits — tenure, promotion, and salary increases — while those without stellar SETs do not. The entire profession and the institutions are victimized by a system that has been shown to fail all parties, yet persist.

A comprehensive database search using the keywords “grade inflation” or “student evaluation of teaching” yield tens of thousands of results just from the last decade, a majority of them from scholarly journals. However, few of them make cause-and-effect relationships between each other, and fewer still connect the larger institutional and societal issues. The purpose of this paper is to present and discuss the literature attaching grade inflation to professor evaluations and to argue that other impacts emanating from both, which include unethical student practices, lower literacy rates among graduates, and poor workplace ethics. The first section focuses on grade inflation, the second section focuses on SETs, and the final section looks at consequences of the grading and evaluation system.

**Grade Inflation**

To better understand the phenomenon of grade inflation, the following subsections will be explored: (a) history of the grading system, (b) problems inherent in the grading system, (c) causes of grade inflation, and (d) effects of grade inflation.

**History of the Grading System**

So the question becomes: how did we end up with a grading system that confidently places students into distinct categories of grades, regardless of the subject of study? How did we become so metrically enslaved? Our current grading system began during a time when academic knowledge existed for the elite, not the masses, and because it provides a very real outcome that people can understand: A, B, C, D, F, grading has entered the status of the sacred. The grading system dates back to 1913, when grades were assumed to be actual barometers of achievement that faculty and students relied upon unquestioningly. However, grades were “an absolutely uncalibrated instrument” (as cited in Durm, 1993, p. 1), already recognized as unreliable and flawed. In the Ivy League universities, different grading systems appeared: Harvard started with arranging its students by social status, rather than alphabetically, and Yale chose its valedictorian by popular vote. Throughout the late 18th and early 19th centuries, each had its own numerical scale, or none at all, but divided students up into categories of some hierarchized sorting from better to worse. Near the end of the late 19th century, several universities adopted firm systems of rating, including Mount Holyoke, whose A-F grades attached to percentages became “the cornerstone for college grading” (Durm, 1993, p. 3). This system has persisted for more than ten decades.

Grades have steadily risen since the 1960s and 70s; this coincides with the Vietnam era, when faculty began to bump up the grades of male students so that they would not be drafted (as cited in Selby, 2013). Since then, grades have risen to impossible heights. Comparing grades in the same institution, it is possible to track grade inflation. At Harvard, for example, the percentage of students with B+ GPAs or higher hovered around 15-16% in the 1950s and 1960s, and had risen steadily to 68% by 2000 (Lawler, 2001). At four-year universities in general, the same trend can be found: two studies found that a range of 7-15% of all grades were A’s in the 1960s, whereas at today’s universities, 41-43% of all grades are A’s; furthermore, fewer than 10% of grades are in the D/F range (Rojstaczer & Healy, 2012; Selby, 2013). At top-tier schools, undergraduate GPAs are so high that they no longer motivate students, or serve as an effective tool for employers or graduate schools (Rojstaczer & Healy, 2012). Unless they are more strongly regulated, grades will have even less meaning in the future. Students as consumers have increased expectations of top grades: Undergraduates expecting grades in the A range increased by 10 percentage points during the 1990s (Eiszer, 2002). One college that bucked the trend, Wellesley, capped average class grades at B+, but saw a statistically significant drop in student evaluation ratings (Butcher, McEwan, & Weerapana, 2014).

**Problems Inherent in the Grading System**

Although more effective grading systems probably exist, or could be created, the simplicity and time-honored (sacred) quality of the current categorical rating system makes it so appealing. Unfortunately, it’s also what makes it so irrelevant and archaic. Grades attempt to place students in a spectrum from good to bad, A-F, based on the results of institutional or faculty-designed rubrics, and computer-graded test pools, which measure cognitive skills and attach a metric to them. Rating students based on measurable attributes is obsolete in a society where largely disregarded attributes like courage, creativity,
GRADE INFLATION AND STUDENT EVALUATIONS

and perseverance are often more indicative of future success. Furthermore, our grading system is fundamentally flawed because it does not value, and provides no clear way to evaluate, abstract qualities, such as work ethic, character, wit, humor, creativity, and desire to learn. Faculty have difficulty evaluating student work on a metric-based scale when the goal of the class is to encourage creativity and inspiration. Such is the case with Peckham (2011), who critiques grading practices in a graduate creative writing class, as grades have historically failed to adequately measure this endeavor. Critiquing writing is seen as criticizing the imagination of the student. The solution for some faculty appears to be awarding either all A’s or pass/fail; in either case, this solution ignores the grading system completely.

Curriculum design and institutional policies merely attempt to catch a horse that left the barn long ago. Such measures fail to see the big picture. It is a symptom of a larger problem: our continued insistence on quantified ratings, and metrics-based forms of evaluating qualitative behaviors. This broad misstep stems at least partially from grading practices, which have bled into other areas of evaluation — the workplace, for example. Although it is the university’s job to give students the skills they need to be successful in the marketplace, quantifying rubrics in a metrics-based system of grading does harm to the development of free thought necessary to be truly creative, just as laws, policies, and rules do harm to the expectations of truly virtuous behavior.

Causes of Grade Inflation

Aside from student evaluations, merit-based financial aid and student expectations play a large role in grade inflation (Caruth & Caruth, 2013). For example, financial aid from employers or the government is often tied to average or better grades, so professors feel the pressure to award higher grades, even if students are not receiving a correspondingly higher quality of education. Currently, students in some sectors are marketed an education in which it is implied that they can have full-time jobs, families, and get an education at home and in their spare time. When these students encounter rigor, they are very likely to expect — even demand, as consumers of higher education — a lenient grader. It’s a kind of “disengagement contract” wherein faculty and students mutually agree that with modest levels of effort, good grades can be achieved (Kuh, 2003, p. 28).

The pressure from competition with other colleges is another reason for grade inflation: when faculty award high grades at one institution, those at competing institutions don’t want their students to be at a disadvantage when applying to graduate schools or dream jobs, so they inflate their students’ grades (Healy, 2001). As Hall (2012) maintains, financial pressures and institutional budget cuts affect grade inflation, as universities want to keep students happy, and happy students who earn good grades are more likely to persist, fill seats, and pay their tuition.

Students often seem to expect high grades, as if they are entitled to them by virtue of having paid tuition. However, pandering to this expectation without requiring rigor from students may backfire: Students who achieve good, but unearned grades, may express contempt for cheap work at high prices against the course, the professor, or their school. As society has moved away from unquestioning compliance with academic knowledge and toward questioning everything, the authority projected by educational figures has waned. As a result, students feel entitled to complain in a way they hadn’t dreamed of previously. Grade inflation that results from this loss of professor authority “robs students of an important life skill: We learn the most from failure, which happens even when we try hard” (Schrager, 2013, para. 8). When students only receive good marks despite varying degrees of effort, they fail to learn the distinction between giving their all and just getting by, which does them no favors for the future.

Changing student attitudes also factors into grade inflation. Gone are the days when a professor’s authority and assessment were unquestioned. “Narcissism and an inflated self-esteem” lead students to view faculty as “gatekeepers (even impediments)” rather than respected leaders who show students the path to success (Lippmann, Bulanda, & Wagenaar, 2009, p. 200). Schrager (2013), a Columbia instructor, contends that universities have developed a culture of complaining, and speculates that grade inflation at Harvard is justifiable due to professors inflating grades so their students have better job prospects. Furthermore, Schrager (2013) explained that although she and her colleagues cared about being fair, she nonetheless inflated grades to avoid students’ complaints:

[S]o many of us inflate grades to avoid student complaining. Anything less than an A would result in endless emails, crying during office hours, or calls from parents. One student once cornered me and said: ‘I hope you’re happy you’ve destroyed my chance at Goldman and ruined my life.’ (para. 3)

One of the co-authors’ students, struggling to speak intelligently, recently made the crystal clear remark: “You have stomped on my dream” (personal communication, Spring, 2012).
Effects of Grade Inflation

Diminished effort and the promotion of skill deficiency are sad by-products of grade inflation. If they believe the class is an “easy A,” students don’t try as hard. Assuming that study hours are a barometer of effort, the finding that weekly study hours for undergraduates declined from 24 to 15 hours from 1960 to 2012 (Rojstaczer & Healy, 2012) serves to bolster the idea that academic expectations are in a steep decline. Once students realize that mediocre work earns high grades, they stop trying to improve—why work twice as hard as a peer to earn the same mark? The effort contemporary students put forth is distressing, when compared to behaviors once regarded as basic requirements for good grades: reading the textbook, attending class, and adhering to deadlines. Of self-described “responsible” students in one study, between one-third and three-fourths didn’t do any assigned class reading; over half claimed that missing onsite class resulted in no change to their course grades; and believed instructors should be flexible graders and expected extensions of assignment deadlines (Hassel & Lourey, 2005).

Another ironic outcome of grade inflation is poor student outcomes. Students enter the workforce with inflated senses of their competency; however, surveys show that they are unprepared for the workplace and lack an appropriate work ethic (“Prepared for the Job,” 2014). Spellings (2006) indicates that literacy rates among college graduates in the previous decade declined as deplorable numbers of these graduates enter the workplace lacking the requisite skills that employers demand. Perhaps, these same universities are setting these students up as future graduate students in their institutions: if bachelor’s degree graduates are lacking skills, why not sign up for the master’s program?

Grade inflation affects wider socio-economic realities as well. Harding (2012), a journalist specializing in economics, investigates the ways in which grade inflation affects the economy. SETs are both the cause and effect of grade inflation, as grading has “changed from an internal measure and motivator of student performance to a measure principally used for external evaluation of graduates” (p. 21). Rather than grades being used to assess ability internally in an institution to help students make choices and progress, they are being used by prospective employers to decide which graduate to hire. Since an effect of grade inflation is that an A is devalued, companies hiring A students with certain expectations are finding themselves disappointed (Harding, 2012). The reputation of the university takes a corresponding nosedive.

The outcomes of grade inflation pose serious problems for the future. As grades continue to climb ever upward, the perceived knowledge and experience associated with earning those grades aren’t climbing with them. Employers once looked at an A student from Harvard and knew that that grade indicated something about the individual. Now, the only thing that achieving an A from Harvard seems to mean is that the student was capable of being admitted; after all, the highest mark is given more often than any other. Grade inflation leads to reduced motivation among students (Hall, 2012) and is just as damaging as other types of inflation. Harding (2013) discusses the larger implications:

Inflation, whether of the money supply or of academic grades, devalues the unit of measurement. Grade inflation dilutes the worth of an education just as monetary inflation decreases the value of a dollar. If a dollar no longer buys a cup of coffee, an unearned A no longer demonstrates mastery of content. And as makers and drinkers of coffee suffer, so do college students and businesses that employ them. (p. 21)

Student Evaluations of Teaching

Few topics have been researched more in the past few decades than student evaluation of teaching. In many universities, these evaluations are the most popular—and often, the only—measure of teaching effectiveness (Clayson & Haley, 2011). They started in the 1920s to help improve the quality of teaching and learning, as well as reward good teaching, but have morphed into one of the most contentious topics in education. In researching literature for their extensive meta-analysis of the problems with SETs, Benton and Cashin (2014) recorded 3,048 hits in the Educational Resources Information Center (ERIC) database alone. The subsections below explore (a) problems inherent in SETs, (b) correlation of grade inflation to SETs, (c) correlation of expected grades and SETs, (d) the “chili pepper effect” of RateMyProfessors.com, and (e) the bigger loser in SETs: women.

Problems Inherent in SETs

After five decades of being administered and studied, no instrument for SET has been proven universally valid, objective, and fair (Subramanya, 2014). The use of these instruments has long been debated in studies that question their usefulness, which conclude that they are neither valid nor reliable measures of teaching quality, or are tainted and influenced by other variables. In the most balanced literature review on SETs to date, La Lopa (2011) ends by soliciting the reader’s help in finding a more reliable and valid system of evaluation. That there is a positive
relationship between grades and student evaluations is “well established,” with the only variations being the strength of the relationship, and the remaining controversy being just how much other variables unrelated to the course or instructor influence evaluations (Svanum & Aigner, 2011, p. 667). Students’ degree of success, motivation, and amount of perceived effort can cause them to assess the same course and instructor differently; perceptions of instructor quality are greatly impacted by factors that are either marginally related or unrelated (Svanum & Aigner, 2011). Due to the “halo effect,” instructors judged positively in one area are awarded with high marks in all areas (La Lopa, 2011), which explains the infamous “Dr. Fox study” where a charismatic actor delivered an entertaining lecture on math without any knowledge or skill in the topic, but received high evaluations from a well-educated audience. Validity is also questionable, depending on the instrument studied: SETs should measure instructor quality, but some include course quality. Or, they strongly correlate to factors that shouldn’t reflect effective instruction: showmanship, body language, and vocal expressiveness (La Lopa, 2011; Onwuegbuzie et al., 2009).

If students were uniformly honest, objective reporters of their experiences, their SETs might be reliable data. But they are not. In Clayson’s (2013) study, students’ attitudes and perceptions at the start of a course were strongly related to the ones they had at the end; first impressions of the instructor and his/her personality had a greater impact on evaluations than teaching and learning that occurred throughout the course. Students also use the evaluations to mingle issues outside of the teaching and learning process. Sometimes written comments have the “payback” vibe: the anonymity of SETs and being in an anxious, emotionally-charged frame of mind before final grades are posted unleashes a “state of deindividuation, which allows students to write cruel remarks and morally disengage from the consequences of their actions” (Lindahl & Unger, 2010, p. 71). Furthermore, SETs are used punitively: A majority of students know of peers who fabricated evaluations; approximately 30% of evaluations consist of responses that students know are false, because they either desire to hurt the faculty member, or because they dislike him/her (Clayson & Haley, 2011).

The issues with SETs are magnified when there is a low response rate. As statistics professors Stark and Freishtat (2014) contend, the lower the rate of responses, the less representative these responses are; it is not possible to generalize from a small group of respondents to the entire class when response rates are low. Moreover, respondents are more likely to be negative, as anger inspires action more than satisfaction does (p. 4). Even more disturbing is the response rate for small classes, which will produce more “extreme” evaluations, as a decreased sense of anonymity reduces students’ inclination to respond truthfully (Stark & Freishtat, 2014, p. 5). Excluding the lowest score on SETs is an appropriate response to decreasing the effect of an extreme response (Staats, Hupp, Wallace, & Gresley, 2009).

Connection of Grade Inflation to Student Evaluations

The correlation between high grades and student evaluations of professors is utterly unmistakable. One could argue that one causes the other—and vice versa. Professors desire high student evaluations just as students want good grades; decisions regarding promotions and tenure are directly affected by these evaluations (Trachtenberg, 2013). In his study of undergraduates, Eiszler (2002) found such a strong relationship between the two that he concluded that evaluations encourage grade inflation. Professors fear poor or low evaluations from their students if they do not make material acquisition easily achievable, and if they do not give high grades—fears understandably and realistically tied to job security (Jewell & McPherson, 2012), particularly in environments where student evaluations are linked to contract renewal or advancement. A common workaround for professors is to compress grades at the top (Jewell & McPherson, 2012), a practice which privately works in the professor’s mind, but publicly contributes to national grade inflation. Grading leniency causes professors to offer high grades in return for high evaluations (as cited in Caruth & Caruth, 2013). Winship (2011), in refreshing directness, called this practice “the low-low contract” (p. 2). It is irrational to teach difficult material when professors are punished by students in evaluations, and nontrivially punished again by their institutions in failed promotions, low institutional evaluation, and decreased merit increases. In inflating grades, professors have created an environment wherein high grades and low work ethic are the norm.

Correlation of Expected Grades and Student Evaluations

The correlation between expected grades and SETs is strong; average correlation found in studies of the two is .43 to .47 (Onwuegbuzie et al., 2009). [1.0 describes a perfectly linear correlation, while 0 means no correlation exists.] Greenwald (1996) concludes that there are “substantial underestimates” of faculty who have strict grading criteria and “overestimates” of faculty who have more lenient grading criteria; top students give strong evaluations of faculty, and students reward faculty who grade leniently with highly favorable evaluations (pp. 1, 11-12). One study
concluded that due to the use of evaluations for tenure and promotion decisions, 22% of faculty decreased the amount of course material, and 40% also constructed easier exams (as cited in Felton, Mitchell, & Stinson, 2004).

Additionally, there is an equalizing effect between professors and students embedded in student evaluations, as both mutually engage in the act, essentially, of grading each other. Moreover, this equalizing effect diminishes professors’ authority and respect from students. Grade inflation has occurred predominantly since 1960, and is concurrent with the increased use of student evaluations (as cited in Caruth & Caruth, 2013). This proposed exchange of grades for evaluations also speaks to the changing nature of the professor (in some sectors, little more than a “facilitator.”) Winship (2011) described both faculty and students in a mutually contemptuous relationship, each having low expectations of each other, until they reach a point where “faculty pretend to teach, students pretend to study, and as long as parents and others paying the bills are oblivious, everyone is happy” (p. 232). As economic pressures, declining student enrollments, and fear of job loss intensify, the practices of leniency in grading, turning a blind eye to plagiarism and other poor student practices, ignoring or suffering disinhibited rudeness from students, and a general loss of the professor’s role as authority and leader, proliferate. Faculty ignore, or avoid turning in, students suspected of academic dishonesty partly due to fear of retaliation in the form of low student evaluations from students accused of such dishonesty (Staats et al., 2009).

The Chili Pepper Effect:

RateMyProfessors.com

As further proof that SETs are unduly influenced by factors unrelated to teaching, the perceived attractiveness of an instructor has been positively correlated to likeability, approachability, and teaching effectiveness (Freng & Webber, 2009). The online forum RateMyProfessors.com takes the unrelated factors one step further by calculating “hotness” in the form of a chili pepper icon next to the instructor’s evaluation. Analysis of this site, which allows users to post *ad hominem* attacks and to rate professors anonymously on several factors (while the site calculates an overall teaching quality score), are noteworthy. Freng and Webber (2009) found that being attractive is predictive of positive evaluations of teaching; in teaching, “hotness” does matter. Evaluations of faculty are “significantly affected” by criteria such as whether faculty are easy or hot: students rate easy courses and “hot” or “sexy” faculty more highly (Felton et al., 2004, p. 106). For faculty with 10 or more student posts, the correlation between easiness and quality is .61, and between “hotness” and quality is .64 (Felton et al., 2004). The ratings on this site were also comparable to traditional onsite evaluations, with two criteria correlating “substantively and significantly” between the ratings on this site and the institutions’ own SETs: overall teaching quality and easiness (Coladarci & Kornfield, 2007, p. 11). Of equal concern is students’ use of this site, which they find as “useful and reliable” as advice from peers and academic advisors (Hayes & Prus, 2014, p. 686).

The Bigger Loser in SETs: Women

The connection between grade inflation and SETs is clear when considering women in academia. Jewell and McPherson (2012) found that, compared to their male peers, female faculty give inflated grades to their students at a “statistically significantly greater rate” (p. 103). One explanation for this difference is that women in academia are under greater pressure to give high grades “perhaps to counter perceived or actual discrimination or as a result of perceived job insecurity” (Jewell & McPherson, 2012, p. 103). These concerns are grounded in research, which has concluded that female faculty are less likely than their male counterparts to receive tenure (as cited in Jewell & McPherson, 2012).

Furthermore, women are also less likely than their male counterparts to achieve high SETs. MacNell, Driscoll, and Hunt (2014) found that gender bias results in higher ratings for male instructors in student evaluations. Their study concluded that in cases where a group of students thought they were being taught by a male instructor, higher scores resulted, even when the instructor was actually a female. Overall ratings for instructors thought to be female were 3.7/5.0 scale, whereas their ratings for those thought to be male were 4.24. Two of the greatest discrepancies existed with fairness and promptness in grading; the researchers concluded that using student evaluations as the sole method of assessing instructor quality “systematically disadvantages women in academia” (p. 11). Despite these concerns, evaluations continue to be front and center in decisions regarding raises, tenure, and promotion.
Consequences of Grade Inflation and Student Evaluation

One consequence of all the negativity surrounding grade inflation and SETs is that faculty shift their priorities—especially those at research institutions, where decisions regarding promotions and salaries are influenced more by faculty research than teaching (Winship, 2011). This movement away from valuing teaching toward valuing research means that many professors consider their students less important than their research (Winship, 2011). Faculty understandably focus on areas for which they are rewarded, and students and society ultimately pay. Institutions seemingly more interested in student satisfaction than student learning complete this academically toxic loop. Thus, generally, institutions, professors, and students suffer grade inflation as a kind of academic acid reflux. Nobody likes it, but no one is willing to change his/her diet.

Despite the evidence of a flawed system, universities have a very compelling reason to maintain the status quo of keeping students happy with inflated grades and deflated learning: financial gain. This is even more the case for private sector institutions, where more than half the students enrolled in 2008-2009 did not receive adequate academic support, left after four months without a degree, and were saddled with heavy student debt (Harkin, 2012). Some of these students lacked the basic skills necessary, but increased desire to make Herculean efforts at retention have contributed to grade inflation, too. As enrollments decline nationally, institutions are ever more invested in retention of all tuition-paying students. This places many professors in an even more precarious predicament: passing students with substandard skills, elevating merely completed work to the status of competent or good. Thus, students of the highest quality are equalized with students of minimal quality (Schrager, 2013).

When institutions are recruiting more students than they can support, it is even more unlikely that they will spend the time, effort, and money necessary to overhaul the system; and even if they did, those students would become pariahs in the job market, because grades factor heavily in employment. Students have no incentive to change the system because they are achieving high grades with minimal effort. Universities have almost no choice but to keep using the current grading and SETs because they are, at least, standardized. In this context, grade inflation only exists as a problem because it’s what we can identify and name. The overall phenomenon of grade inflation is a natural side effect of a flawed system that relies heavily on SETs, and neither the professors, the students, nor the universities have solid reasons to change this practice.

There is a larger social issue at stake. Right now, there are students learning a trade, and there are students learning to appreciate literature and to be critical thinkers; unfortunately, society seems to view their goals as mutually exclusive. The only accomplishments that get evaluated are those which can easily be measured, even though employers look for unquantifiable attributes such as passion, motivation, and innovation. The same holds true with SETs; considering the flaws and biases noted in this paper, it is clear that an overhaul of SETs is needed, starting with a renewed focus on validity and ways to minimize unrelated variables and gender bias. Until universities abandon the metrics-based system, to which they have clung so tightly, and implement an evaluation system that takes into account both the marketability and the enrichment that education should provide, everyone will continue to find grades meaningless and misleading. Low student motivation and minimal effort required to achieve top marks prevail, and the generation of students who will emerge from this lull in rigor might not have the skills necessary to reverse the trend. Until educational goals are shifted from privileging credential acquisition for the goal of attaining improved-wage job status to a balanced and comprehensive education that enriches students and morally uplifts society, grade inflation in too-easily achievable courses will continue to devalue our students’ education and to produce graduates of unequal skill sets, disinterested characters, and uninvolved civic actors.

The goal of this project is to invite further dialogue and research so that solutions may be proposed. Most faculty and administrators across institutions are tacitly aware of the problems presented by SETs. Yet, the seemingly sacred nature of grading (whether faculty of students or students of faculty) is profoundly entrenched. Ultimately, the solution to SET fallout will require a considered shift in perspective regarding the value of metrics and assessments for both students and professors.
References


The New Literacy: College Composition and Dialects of English

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Abstract
This argument redefines literacy as a moral/ethical enterprise that rises above Standard American English, a dialect that focuses on rules of grammar. It looks at oppositional dialects, Standard American English (SAE) and African American Vernacular English (AAVE), and argues that the essential central purpose of literate composition (to express morally-elevated, relevant ideas) has eroded, leaving a variety of competing (i)literacies. What has occurred with African Americans, culturally, bleeds into urban identity and Urban English (UE). Privileging SAE has led to audio profiling focused on exclusion and difference, and has demanded assimilation, often unconsciously. SAE has historically formed a linguistic hegemony to which even its victims subscribe. Solutions include opening the borders of codified SAE to be more inclusive and tolerant, and educating the professoriate about prejudices that privilege SAE above other dialects.

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Linguistic Disenfranchisement Embedded in Privileged SAE

Standard American English (SAE) has long been regarded as the language of politics, education, medicine, law, and the professions. It is the de facto “correct” form of English in America; but is really no more than a formally accepted dialect of English. Dialects are spoken or written versions of a language, dictated by region and/or socio-economic status. However, all forms of English, even the abstract notion of SAE, may be seen as dialects — in the case of SAE, mistakenly privileged as the ideal form of spoken and written language in America; all other dialects are disfavored in this privileged and abstract context, historically, none more so than African American Vernacular English (or Black English, Ebonics, or Urban English — as AAVE is variously known outside of linguistic scholarship). The historical stigmatization of African Americans and their (presumed) intellectual inferiority dictated by language usage, considered slang, “wrong,” and ignorant, stains the American conscience and is broadly accepted by many across races and economic standing. Opportunities for African Americans and more recently impoverished urban children of all colors are not now, nor have they ever been, equal. Although the story of educational inequity begins with slavery and persists with ongoing racism, it now bleeds into other problems of literacy and new forms of slang spoken and written across economic and racial lines. Underneath the surface rhetoric about equality, there lies a simmering reality of inequality always ready to boil over. Linguistic disenfranchisement is a snake devouring its own tail.

The concept of SAE as a basic requirement for a unified country of citizens seems sound enough on the face of it. Every society needs an agreed-to linguistic framework upon which all coherence and comprehension may be based. Standard grammar in this view is, therefore, not merely an optional tool in communication; it is the very essence of how language functions at its core. Words, subjects, verbs, predicates, and direct objects are arranged (syntax) using the best, most precisely correct words (diction) in the appropriate level (high, medium, or low — directed by occasion and sensibility, as well as one’s style). In this complex linguistic enterprise, meaning emerges. The problem with this paradigm is that it has ceased to expand with the vocabulary and idiom of too many users of English. Purists would have us preserve a standard form of English. But, when language fails to evolve, it dies.

Toward a More Expansive Literacy

It is misguided to think of “true” literacy, as Northrop Frye (1963) points out as the ability merely to read and write; or of illiteracy as an inability to read and write, both “clearly nonsense” (p. 33). One can read and write and still be illiterate. Creating moral/ethical meaning in language is what comprises a truer literacy. A central problem of literacy is that, apart from linguists, many lay people and academics contentedly valorize a hierarchy of English dialects with SAE at or near the top, and other dialects cascading downward from its perfections with each deviation of grammar and sound. Although it is tempting to reward a grammatically correct paper that gratifies patterned expectations (adheres to a format, has a well-defined problem and solution, incorporates the specified number of sources, is written to length, and the other formal elements), faculty should reflect on the idea level, whether ideas are relevant, important, or morally elevated. A dutifully executed paper on the value of sleep, then, would be less worthy than a paper struggling to make the legacy of slavery intelligible. A true literacy exceeds grammar and sound, and has to do with the expression of ideas, meanings, and transcendent thought, provided that meaning has been communicated. The ancient Greek who says, “go thy way and do no harm” has much in common with the modern boy from the hood, who exhorts his friend, “Don’t hurt nobody.” The communication of meaning is a delicate line, asking that the writer be precise; but also asking that the reader have an expansive, evolving, lively understanding of emerging literacy.

To teach language from what should be a result of literacy is not the same thing as having a profound literacy in the first place, whether a student or a professor. Most college writing courses fall far short of Frye's elevated literacy, achieved from years of intensive study in progressively deeper drills into literature, history, and philosophy. Frye (1963) advocates for a deep, immersive understanding of the best literature written in the English language as the means by which skill in the basic conventions of grammar is acquired along the way; immersion leads to the development of “wit,” “heightened intelligence,” and “the sense of concreteness” (p. 26). Over time, and through this deep and leisurely “soaking” immersion, students “develop a speaking and writing prose style that comes out of the depths of personality and is a genuine expression of it” (Frye, 1963, p. 26). Such an immersion in the art of literary expression requires years of study and an introduction that is both gradual, introduces progressively more difficult materials, and implies guidance from one amply prepared him/herself; but the conditions for this level of literacy no longer exist. Indeed, they were fading in Frye’s time (fifty years ago) and he knew it.
THE NEW LITERACY

Voice and Personhood in Writing

Today, few are steeped as Frye advocated. Lacking the leisurely soak in classical literature, the individual “voice” in which one is expected to write has become increasingly less personal, more neutral, in the absurd presumption that neutrality can be achieved outside of personality. Thus, students are told to avoid using the first-person pronoun, as if they are wizards of objectivity, hidden behind the curtain of third-person neutrality. Students are routinely taught that the “I” only produces a biased opinion, whereas the absence of the “I” implies objectivity. It is utterly preposterous, however: whether the “I” is used or not, the writing belongs to the author whose name is attached to it. Neutrality and objectivity are impossible achievements in any event. Students, rarely corrected for their lack of wit — expressed in pseudo arguments, increasingly within a self-limiting, problem-solution paradigm — end up with what Frye described as “pseudo-prose”: docile, tedious, flat, insipid prose, intended to “obliterate personality,” prose characterized by an “impersonal or anonymous voice,” which is “essentially demoralizing” (Frye, 1963, p. 37). This notion of impersonality, coupled with a lack of style in the crafting of essays, permeates every level of education; and writing for college and graduate programs often does not admit to any correctness when writing as a person, an “I,” committed to a point of view. It is not the “I” that is a problem; it is our lack of formal, persistent immersion in ideas and ideals, which might have informed a deeply profound literacy, in which the “I” has something morally elevated to offer and is artfully capable of doing so. The modern “I” is often uninformed and personal only in the most egregious sense, offering the linguistic equivalent of a “selfie.” Students, seeking (as they are often exhorted) to show energy and commitment, resort to the merely personal “I” uninformed and illiterately used.

Ideas, Wit, and Expression

The second feature of Frye’s elegy on the loss of literary style is the observation that the manner of expressing ideas is less important than the ideas themselves. Thus, Pope’s adage, “True Wit is Nature to advantage dress’d/What oft was thought, but ne’er so well express’d,” has been completely abnegated (Pope, 1711/2015). What Frye seeks to point out is that individual wit and the history of ideas expressed in a profound study of literature and humanist writing — a study so deep and so immersive that one becomes saturated in its meaning and style — are related and necessary to producing true literacy, the expression of true personhood. More importantly, creating a culture in which this literacy and development of persons with personhood have a place should be a primary goal. Frye’s literacy is comprised of two key features, and both are relevant to how writing is taught today: first, literacy is moral and attached to one’s integrity, one’s personhood. Although Frye (1963) advocated for a literary immersion to achieve the “power of utterance” (p. 47), and though he preferred an elegant eloquence informed by literary greats, he well knew that “anti grammatical” (p. 31) speech could also rise to literacy, depending on the speaker’s wit and moral intention. Historically, the materials of Frye’s own literacy have been made decreasingly available to students, until they are all but irrelevant. His underlying theory of a long and deep immersive study, however, is still sound.

American college writing courses have forsaken the two key features of Frye’s literacy, as well as the classical immersion, and are almost wholly given over to form, structure, and patterned expectations of what composition essays ought to look like (e.g., the five-paragraph banger), often at the expense of ideas, legitimate ambiguity, roomy elegance, and ingenious colloquialism. Students have not “lost” literacy because of problems inherent in the teaching of language; they have lost literacy because the cultural consensus of what in history, philosophy, and literature ought to be studied is highly contested. Years of study, in progressively deeper drills into a body of information on which language once rested, have been lost. This instruction was denied to those who once urgently sought it, until they ceased to miss it; and now reject it outright. Having lost a sense of morally elevated purposes elegantly expressed, literacy has been gutted. Our cake has no icing because there is no cake.

A Sublimely Committed Linguistic Morality

The levels of diction, then, frequently associated with class and, too often, with race, parse less neatly than is commonly supposed. If literacy is the expression of a person’s voice speaking or writing about important and morally elevated ideas, and taking great pains to achieve intelligibility, then community materializes (Frye, 1963) and our multiple literacies have an opportunity to cross digest ideas. According to Frye’s definition, true literacy leads people to consensus. It emerges from true understanding of experiences and histories that define communities; and, in America, a nation of diversity, our need to recognize each other’s potential literacies is more crucial than ever. A half century ago, SAE (to which the academy seems now to cling for dear life) served that society well. Its majority members — largely White, largely middle class, largely upwardly mobile — enjoyed a relatively stable consensus. Today’s society is vastly different, and our linguistic inclusions need to keep pace with demographic changes.
The underlying problem of literacy is not that there are too many differing grammatical versions of literacy, but there is an overall lack of a true literacy, a literacy of the heart and spirit as well as of the mind, in our diverse attempts to be literate. A truly literate person is unconcerned about inventing some kind of neutral position for him/herself, and is less concerned about diction than one might suppose — just as Shakespeare's fools, Dickens' lower classes, or Jim in *Huckleberry Finn* with their “low” styles present to us nobility of thought and action. The literate person, no matter which level of diction s/he employs, is always interested in elevating the morality of the people. Conversely, any speakers whose goals are to vent their “hatred, arrogance, and fear,” no matter what their level of diction, merely demonstrate “uninhibited reaction to the social order, a release of the querulous ego” and are, consequently, “anti-social” (Frye, 1963, pp. 47-48). Frye’s definition of literacy involves a sublimely committed linguistic morality, the evidence of which is felt in social relevancy and leadership in qualities around which the community coheres. When the aims of the speaker are obfuscated, the goals selfish and self-serving, and the outcomes immoral, then there is no literate argument, only an uninhibited one. A collection of uninhibited speakers is not a society, argues Frye, but a mob (p. 43).

**The Linguistic and Cultural Split around Slavery**

America is composed of many communities and societies, and most have their own (il)literacy. In looking at the primary and original literacy paradigms, one sees that African Americans and White, middle-class Americans traditionally split along cultural and linguistic lines, as well as class, education, and economic lines. The split begins with slavery, at which time non-English speaking Africans were abducted and brought to an English-speaking country. These abductees did not necessarily speak or understand each other's dialects any more than they did their captors’. Linguistically cut off, unable to understand or communicate, they were regarded as property and were viewed as inferior, not fully human, and intellectually incapable. They learned English, but had to engage in a complex linguistic enterprise of deconstructing the language into new forms in order to make essential plans of escape and thus began a dialectic expression of English that concealed meaning from outsiders. This language was immediately associated with ignorance and intellectual inferiority, and continues to be tied to Black identity today (Paige & Witty, 2011, p. 66). This split begins the hegemonic identification of difference as inferior, supported with a complete imbalance of power that became so entrenched that for centuries even its victims believed the biased views, which persist today.

Slavery and persistent racism have led to the creation of linguistic separation tied to cultural separation and economic and educational disenfranchisement. These competing (il)literacies lead to both high literate expressions and low illiterate expressions. The distinguishing feature of illiteracy is not diction or syntax, rather a lack of moral leadership toward what is good, socially, and morally desirable.

Understanding literacy as morally purposeful does not help solve the problem of linguistic diversity and social incoherence. At the very least, prejudicial notions that African American Vernacular English (AAVE) and by extension Urban English (UE) are somehow bad, despicable, “wrong” sub-languages can be avoided. At least since Krapp (1909), AAVE has been regarded as a legitimate dialect of English — whether based in Anglo or African patterns, with its own regularized grammar, systematically interested in and reflective of human experience. DeBose (2006) succinctly summarizes what linguists had observed very early on and formalized — that Black English is a dialect of English and not a mistaken version of it:

As a consequence of linguistic scholarship, the commonsense belief that Black language consists of mistakes and failures has been superseded by knowledge to the effect that it is correct according to the rules of a different grammar. The traditional status of “Bad English,” and the implication that it is inferior has been replaced by that of a dialect, in the technical sense used in linguistics, which simply means one of several different, but equal, varieties of the same language. p. 8)

Although linguistic scholars subscribe to full recognition, Americans, even elite, educated Americans of many colors, persist in stigmatizing not only AAVE, but its speakers as well. Ultimately, linguistic scholarship reflects the hegemony: for although it fully recognizes AAVE as a knowledge base, it also proposes limited acceptance (DeBose, 2006).

SAE has been valorized to such an extent that even its victims believe its legitimacy. The most savage prejudices are, after all, those to which the most harmed ironically subscribe. Many of our students are ashamed to read or to speak, believing that their ability is “wrong.” As one student put it so plaintively, “I know I don’t talk right.” He described his speech as “broken,” “ghetto,” and “slang” (personal communication, 2012). Apologizing for one’s language — the very essence of conveying personhood and identity — reveals deeply
held misgivings about one's identity, history, and place in society. To continue to privilege SAE — which is, incidentally, only a dialect in a long evolution of English — as the pinnacle of literacy underneath which all other dialects submerge, while even if not purposely racist, is inadvertently, systematically, and just as invidiously so. Embracing AAVE and UE into SAE and accepting that the history of slavery is OUR history, and that African Americans and all other diverse cultures that comprise America are OUR societies can only strengthen and unify the nation.

English is a Cognate Language:
It Grows or Dies
Unlike Latin, English is a cognate language: it makes itself largely from other languages. Consider English prior to Shakespeare — who, in the late 16th and early 17th centuries, composed in modern English. Chaucer’s (1968) 14th century middle English is noticeably different:

When that Aprille with his shoures soote
The droghte of Marche has perced to the roote....
Of Engelond, to Canterbury they wende....
The holy blissful martir for to seke,
That hem hath holpen, whan that they were seke.
(p. 107)

No one knows for sure, but it is thought that Chaucer’s language sounded like Italian spoken with an Irish brogue; and, of course, the “standard” language of Chaucer’s day was not English at all, but Latin. It is believed that Shakespeare’s language also had brogue-like pronunciations (“Ay’s” instead of “he is,” for example). My point in bringing these examples forward is that English is always shifting and changing. Standardized English in America, in a country, which, incidentally, has no official language, is certainly not the English of England, and I daresay, the English wish Americans would stop calling our language English at all. (The English of England is not the English of England either nowadays.)

The Impact of Fixing SAE
America is a country without an official language, formalizing a bastardized version of a language that was itself a bastardized version of another earlier language. English is a hungry little language that gobbles up words and phrases from other languages; a language that loves a well-placed swear word; that is perfectly capable of formal colloquialism; that is often enchanted by its non-native speakers; that prides itself on its muscular logic; and is yet capable of great nuance, subtlety, and tenderness. It is a language that does not discriminate. It is not a language to be pinned to the wall, like a butterfly, deprived of all life; though that is what has occurred. When a privileged majority discredits so many dialects, those whose only fluency and literacy are in those dialects turn the tables on the dominant language and find it dull, dead, official, representing only those who have power. This discrimination occurs across classes and cultures, certainly; but more importantly against people. There can be no mistaking this sad reality: slavery and persistent racism at every level of our society have made notions of difference far more invidious than they might have been with mere diversity of cultures. DeBose (2006) puts it this way:

We often talk of our modern age as non-racially discriminating; we often recall the trials and tribulations of immigrants who arrive on our shores and succeed; and we conclude almost angrily, at times, that opportunities for all are equal. Yet, when we look at the disproportionately high rates of crime, drug and alcohol abuse, poverty, lack of education, high birth rates all too often among single teen women, high dropout rates, exceedingly low test scores and low school achievement, poor diets, poor health care, we have very nearly the same ‘de facto inequality’ that existed prior to the civil rights movements. (p. 90)

When SAE is at its least literate, it expresses fear and anger at the expressions of AAVE and UE and seeks to legally segregate both the dialect and its speakers (Kozol, 1991). Arguments made in SAE that seek to politically, socially, economically, culturally, and educationally segregate and disenfranchise Americans, are deeply illiterate in that such arguments can only end in civil discord, strife; or war, and are, therefore, morally numb.

The Black-White Achievement Gap Expands
McWhorter observed that a “culturally embedded wariness of scholarly endeavor...anti-intellectualism... permeates the whole of Black culture” and that “a cult of anti-intellectualism infects Black America” (as cited in Paige & Witty, 2011, p. 66). This cult of anti-intellectualism may well have begun with African American slaves who had to conceal their intelligence and knowledge, particularly if they had managed, like Frederick Douglass, to learn how to read. It was certainly perpetuated in the separate but (unequal school systems of Jim Crow; and persists today in systematic attempts to keep African Americans (and increasingly anyone in socio-economic distress) from the body politic through the prison system; and, of course, these continual assaults on inclusion are reflected in AAVE and UE. One need go no further than a single word, the “n” word, to understand how racially
polarized language can be (Kennedy, 2002). This anti-intellectualism is no longer specifically exclusive to Black identity, but is widespread across racial/ethnic categories. The battle to protect SAE, if it was ever worth waging, has been lost as increasingly, young people find linguistic vitality in non-standard forms of English, including AAVE, UE, Spanglish, and Textlish. Understanding the causes of separate discourses, dialects, and the value judgments inherent about them does not bring us any closer to an immediate or easy solution. The Black-White achievement gap widens, and what once was exclusively a Black problem has increasingly included any racial/ethnic categories struggling in impoverished regions.

The Ebonics Debate Reviewed

The historical lesson of the Ebonics debate is still relevant. Ebonics first received broad national attention in 1996 in the Oakland California School District. Perry (1997) in an early, and still sensitive, revisiting of the district’s resolution observed its distinct features: (a) that “Black Language/Ebonics was a legitimate, rule based, systematic language,” and (b) that Ebonics should be “affirmed, maintained, and used to help African American children acquire fluency in the standard code” (para. 1). Perry argued that the media willfully misconstrued the report and ignited a firestorm of misinformation, reporting simplistically and inaccurately that, “Oakland schools would teach Ebonics” (1997, para. 4). And the world, across racial/ethnic lines, economies, and politics gasped and guffawed: Jesse Jackson reduced the Oakland decision (which he mistakenly believed to have been accurately reported) as “madness” (as cited in Wheeler, 2006, p. 17). Seligman (1996) reports Jackson as sneering, “You don’t have to go to school to learn to talk garbage” (para. 7). Even ten years after the Oakland decision, Bill Cosby (at the time, revered), in a commemorative speech marking the 50th anniversary of Brown v. Board of Education and (b) that Ebonics should be “affirmed, maintained, and used to help African American children acquire fluency in the standard code” (para. 1). Perry argued that the media willfully misconstrued the report and ignited a firestorm of misinformation, reporting simplistically and inaccurately that, “Oakland schools would teach Ebonics” (1997, para. 4). And the world, across racial/ethnic lines, economies, and politics gasped and guffawed: Jesse Jackson reduced the Oakland decision (which he mistakenly believed to have been accurately reported) as “madness” (as cited in Wheeler, 2006, p. 17). Seligman (1996) reports Jackson as sneering, “You don’t have to go to school to learn to talk garbage” (para. 7). Even ten years after the Oakland decision, Bill Cosby (at the time, revered), in a commemorative speech marking the 50th anniversary of Brown v. Board of Education, still acrimoniously rejected AAVE and those who speak it: “Everybody knows it’s important to speak English except those knuckleheads....You can’t land a plane with ‘why you ain’t’ You can’t be a doctor with that kind of crap coming out of your mouth” (Cosby, 2005, para. 12). Even the gentle Maya Angelou (1996) was “incensed” and found the idea “threatening” (para. 2). If the caustic, guffawing vitriol from a largely White conservative community, combined with an (un)consciously racist majority weren’t enough, the condemnation from within African American leadership (ironically by people who, themselves, used AAVE with strategic literacy) sealed the fate of Ebonics, a term that still produces sniggering from many quarters today, or is rejected as an antiquarian term.

DeBose (2006) notes that the visceral response to the Ebonics resolution may be seen as a sobering reminder of the “unabated power of the hegemony of standard English” (p. 94). When guided by the principle that a true literacy exceeds a standardized context, involving rather the whole mind and heart in writing and speaking about matters that are social and ethical, then the failures of SAE, which have led to political, educational, and economic disenfranchisement for over a century, must be conceded. Even today, Paige and Witty (2011) remind us that “dismissing slavery, discrimination, and racial stigmatizing as unrelated to the problem [of the Black-White achievement gap] is to suggest that African Americans hold themselves back, have only themselves to blame, and either will not or cannot join the nation” (p. 98). This breathtaking indictment is made possible by the absence of a true literacy that bleeds into every community in an impoverished setting. The very idea that the Horatio Alger, rags-to-riches, meritocracy even exists as anything more than a modern myth is illiterately uncontested. So many Baby Boomers remark on their grandparents as having come to America with nothing, but fail to recognize that their grandparents’ experiences in an upwardly mobile country bear little resemblance to modern American society, which is downwardly mobile and has been for decades.

Reinventing Literacy and the Deep Soak in Literature

Nothing short of reinventing education as the very foundation of our society is necessary to refresh the literate mind and heart. All the words and linguistic forms must be admitted to embrace fully the histories and literatures that led to different literacies and incorporate them, as English has always done. Imagine if all of our studentry comprised creative users of language — not stymied by the “rules” of SAE, but inventers of meaning. A studentry trained to whip up confections of words that transcend mere denotation, drawing upon all of the literatures in English, from Hughes’ Jesse B. Simple to Chaucer and Shakespeare, Twain, Dickens, Austen, the Brontes, Woolf, the smirking lewdness of Ovid, the erudition of Eliot, the elegant prose of W.E.B. DuBois, and the warm humanity of Martin Luther King. When new syntactical forms are embraced from our rich diversity and literary history, then social inclusion must surely follow.

A great place to begin to achieve a cohesive society is in college composition classes. What does a composition class that strives toward moral and social literacy look like? How does it function? First, I recommend that composition classes tackle these
difficult socio-political issues, allowing students to engage in historical inquiries into matters of race, gender, class, and of shifting literacies through a deep and immersive study of histories and literatures. Secondly, faculty need to be exceptionally sensitive to students, already hegemonically convinced that their speech is somehow wrong, slang, or substandard. The professoriate must acknowledge the legitimacy and co-equal status of dialects of English, providing the work is intelligible; but, they must also take responsibility to expand their own literacy inclusively, so that dialectical writing is intelligible to them. This poses a steep learning curve for those entrenched in the belief that SAE enjoys a rightfully superior and privileged status. Until modern English — its sound and shifting grammatical structures — is opened, a bigotry of language will continue unexamined and unimpeded, postponing any possibility of achieving unity as a society.

Writing classes must be about more than organization, process, and structural touchstones, comfortingly familiar though these may be. They must be about ideas that matter and are relevant to our society. Such courses require in-depth drilling into both history and literature under co-investigation and ownership between students and their professors. Take, for example, a single word: “ask.” often pronounced, “ax.” The pronunciation dates back to Chaucer, where it was “perfectly admissible,” but today is regarded as “ignorant” (McWhorter, 2014, para. 4). People cutting across all racial strata will express exasperation over this pronunciation, unnecessarily disgusted by its very existence. Codification of language is inevitable; but the code needs to have elastic borders.
References


Doing the Scholarship of Teaching and Learning


Julie Hagemann, DeVry University, College of Liberal Arts & Sciences

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Engaging in the Scholarship of Teaching and Learning (ESTL) is just what the title says: a guide to doing the scholarship of teaching and learning (SoTL). ESTL is written for faculty who have a deep interest in reflecting on their teaching and using scholarship to inform their classroom practices; they are highly trained in the research methodology of their respective disciplines but are novices in planning, executing and publishing an SoTL project. Cathy Bishop-Clark and Beth Dietz-Uhler — tenured professors, faculty trainers, and published authors of SoTL articles themselves — focus their book “on the scholarly tools and innate curiosity about teaching and learning that [faculty] already possess” (p. 1). They seek to help their readers “develop these tools so that [they can] approach scholarly curiosity in the classroom in a more formal manner” (p. 1).

In ESTL, Bishop-Clark and Dietz-Uhler (hereafter called the authors) first make a case for SoTL. In their opening chapter, they examine the history of SoTL and how it has been redefined over time, and then argue that SoTL meets the criteria for rigorous scholarship. The authors note that SoTL scholars commonly agree on Mick Healey’s (2003) definition: SoTL, Healey says, “involves studying, reflecting on, and communicating about teaching and learning, especially within the context of one’s discipline” (as cited in Bishop-Clark & Dietz-Uhler, 2012, p. 12). Furthermore, the authors point out that while faculty have been reflective about their teaching from the beginning, SoTL as a field is only about 25 years old. They credit the Carnegie Foundation for the Advancement of Teaching with popularizing the notion of systematically studying one’s teaching and its outcomes through two pivotal publications: Scholarship Reconsidered by Ernest Boyer (1990) and Scholarship Assessed by Glassick, Huber, and Maeroff (1997). Boyer (1990) argued for the legitimacy not only of the traditional scholarship of discovery, but also for the less traditional scholarship of teaching. Later, Glassick et al. (1997) argued that SoTL meets the criteria of rigorous scholarship because SoTL has a clearly defined research agenda, is grounded in previous scholarship, uses commonly accepted research methods, produces meaningful results, is presented effectively through journal publications and conferences, and engages in disciplinary self-critique. Since then, professional organizations and academic journals have been established to define and support SoTL research practices.

Once ESTL makes the case for SoTL, the authors introduce the five steps of the SoTL process: generating the research idea, designing the study, collecting the data, analyzing the data, and presenting and publishing the results. Each step is explained thoroughly in its own chapter, with examples and worksheets readers can use to think through their own research projects. Finally, the authors end with appendices that list SoTL conferences and journals in a wide range of disciplines that readers can use not only to ground their own SoTL scholarship, but also to contribute to the growing field of SoTL.
The authors follow their own methodology. They grounded their five-step framework in scholarship and tested it with faculty in numerous faculty development workshops over the years. Moreover, the book includes several examples of research projects and bite-sized testimonials from faculty in a variety of disciplines. Reading the voices of fellow faculty helps to reassure readers that they too can start and finish an SoTL project.

The tone of *ESTL* is inviting and reassuring. The authors remind readers who are drawn to the book that they are already naturally curious about what works and does not work in their classrooms and why. The authors’ main goal is to urge readers to take the next step by making their personal reflections more formal, systematic, and public. They argue that the process of developing individual reflections into formal research projects and publishing the results not only gives faculty empirical grounding for their teaching practices, but also contributes to the literature on effective teaching.

At the same time, the authors are well aware of the challenges of undertaking SoTL. They acknowledge that classrooms are not like the research labs in which many faculty trained. Professors may not be able to randomly assign students to different treatment options as they might do in more discipline-based research. Their sample sizes may be limited to class enrollment. And depending on their teaching assignments, it may not be easy for them to do multiple trials in a timely manner. Additionally, the authors acknowledge that not all institutions value SoTL research when granting research money or making tenure and/or promotion decisions. They caution readers to factor in institutional support in deciding whether to initiate an SoTL project.

*ESTL* is not for everyone. Seasoned SoTL researchers will no doubt already be familiar with the history, processes, and resources in this book. But for faculty and graduate students trying to launch their first SoTL project, this book offers highly useful support. It supports faculty trained in a variety of research methods, explaining how to do both qualitative and quantitative SoTL studies.

In recent years, institutions of all kinds and at all levels have encouraged their faculty not only to improve the quality of their teaching, but also to engage in scholarship. Faculty can do both by engaging not only in scholarly teaching (that is, grounding their teaching practices in research) but also in the scholarship of teaching and learning. *ESTL* tells novice faculty how to engage in SoTL in a simple, straightforward way.

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Being Different
Is the Difference


*Nick Lebredo, DeVry University, College of Business & Management*

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*Zero to One* was authored by venture capitalist and co-founder of PayPal, Peter Thiel, with co-author and former student, Blake Masters. The book offers many novel thoughts on the theory of competition and the importance of independent and contrarian thought. Any current or aspiring business person can benefit from the keen insights of this highly successful entrepreneur and his devoted student. The fundamental premise of this book is that it is much easier to copy or go from 1 to n than it is to create something new or go from nothing or zero to one (p. 1). According to the authors, technology rather than globalization is the key to transformational progress. Going from “zero to one” is associated with vertical progress and enabled by technology while “going beyond one” is related to horizontal progress and a consequence of globalization (p. 7). The authors believe that the U.S. view of the world currently remains optimistic but that we have lost faith in our ability to influence outcomes and, consequently, end up leaving too much to chance (p. 68). The authors address what they refer to as the “founder’s paradox” and conclude that there is an important lesson for both businesses and founders (p. 173). Businesses need to be somewhat more tolerant of eccentric founders, while founders need to be watchful of becoming so narcissistic they begin believing they should be worshiped. “The single greatest danger for a founder is to become so certain of his own myth that he loses his mind” (p. 189).

Throughout the book, the authors offer the reader abundant guidance on what it takes to be a successful start-up or entrepreneur. One essential element for success is to recognize the benefits of being different. The authors claim that a goal of every business should be to become a monopoly. Although intense competition is often exalted as a desired state in capitalist economies, competition and capitalism are shrewdly positioned as opposites, with the author claiming that only businesses that successfully elude the trials of competition can ultimately thrive. Businesses in highly competitive industries are overly burdened with the daily struggle to survive while businesses that have greater monopolistic power have the latitude to act more strategically to promote long-term growth (p. 34). Businesses that become monopolies, according to the authors, develop the four defining characteristics of proprietary technology, network effects, economies of scale, and branding (p. 48). Although many entrepreneurs look to start their businesses in a large market, monopolies are best started with a big share of a small market (p. 53).

Conventional thinking is frequently challenged in the book. One such defiant belief is the notion that being a last mover is preferable to being a first mover. The authors believe that successful businesses and entrepreneurs need to be astute students of the end game to be the last one standing, rather than the pioneer who is subsequently upstaged (p. 58). Throughout the book, the importance of self-determination and deliberate planning are emphasized. The authors address seven critical questions that all successful business plans must answer. First, the “engineering question” deals with the capacity to develop breakthrough technology.
Second, a new business must begin by affirmatively answering the question of whether the timing is right to start the business. Third, the “monopoly question” addresses whether the new business will begin in the optimal position of being a major player in a small market. Fourth, the business needs to have the right people on board. Fifth, the business requires an effective distribution system in place. The final two questions address whether the proposed business plan has a secret or is privy to something that others don’t see and has the potential to develop monopolistic power so that it can endure and become a lasting venture. Tesla, the premium electric car company, is presented as an example of a business that satisfactorily addresses all seven questions (p. 153).

Zero to One offers much more than just the usual insights on creativity and innovation. The book is replete with exceptional ideas and sound advice for the aspiring entrepreneur from a proven innovator. At the outset, Thiel indicates that he frequently challenges his students to go against the herd by asking a student to state an important truth that goes against conventional wisdom. As the reviewer, one contrarian thought is that on-going operational execution matters just as much or more than creativity and vision. It may take creativity and vision to start or transform a business, but the resolve and resiliency associated with operating any enterprise on a daily basis is what ultimately can help it scale and give it staying power. The authors, like many of us, are drawn to revolutionary change and less impressed with the discipline of incremental but steady progress. However, it’s worth remembering that many revolutions in politics and business tend to end badly. Continuous, incremental progress remains a worthy best practice and often more demanding of effective leadership for the long-term growth of any enterprise. Yes, the glory will always be in going from “zero to one,” but real, sustainable progress can often be more dependent on possessing the perseverance to expand gradually that initial success well beyond “one” when the excitement of the initial change has long dissipated.

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Captive Audiences


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What happens when someone is taken prisoner, either as an act of war, terror, or crime? What do captives experience between the moment the shackles go on and the moment the ordeal ends? How does the experience make anyone think about the power to prevail under adverse conditions? Does it reveal possible flaws in a personality or culture to make one feel powerless? These are questions to ponder today, given the images from the Middle East flickering across television and computer screens. But capture and captivity aren’t new concepts to Americans, as Susan L. Carruthers (2009) explains in *Cold War Captives: Imprisonment, Escape and Brainwashing*. “From the colonial world onwards,” she says, “captive has occupied a privileged place in the American imaginary” (p. 4). Puritans struggling across the Atlantic in a flight from religious bondage and settlers fighting enslavement at the hands of Indians on the frontier are just a part of the image. Even the new republic’s early encounters with Islam passed through the prism of captivity in accounts of American enslavement on the Barbary Coast. Those fears of captivity, she says, were coupled with worries about mental collapse: the chances captured settlers would adopt Indian ways, or that imprisoned American sailors would “turn Turk,” and embrace Mohammedan religion. The ordeal of capture and its test of national virtue have become, she says, “a staple of American literature” (p. 5). Moreover, Carruthers argues, American interest in captivity stories tend to resurface at times of insecurity and impotence, illustrated by images of US prisoners of war, the Iran Hostage Crisis, and most recently, the tragic ordeals of Americans James Foley, Peter Kassig, and Stephen Sotloff. *Cold War Captives*, even with the shortcomings this review will discuss, adds more historical perspective to the debate regarding questions of American exceptionalism and invulnerability. While Americans are today fixating on the Islamic State’s blood lust, Carruthers points out a previous generation was equally obsessed with the captive experience, and that obsession challenged staples of American life.

Over 6,000 American troops were captured during the Korean War, most of them in 1950. They remained prisoners until 1953, even though the war’s outcome had been settled by late 1951. The delay in repatriation and the ordeals they underwent, asserts Carruthers, stoked multiple national debates. One dealt with the seeming inability of the United States to take care of its own citizens, followed quickly by a dispute over whether US leaders suffered from a lack of will or a failure of nerve. When all prisoners were released, twenty-three Americans rejected repatriation and settled in Communist China while others were suspected of collaboration. The revelations raised suspicions of brainwashing and ignited another debate about the lack of mental toughness among American men. All the debates, says Carruthers, stoked multiple national debates. One dealt with the seeming inability of the United States to take care of its own citizens, followed quickly by a dispute over whether US leaders suffered from a lack of will or a failure of nerve. When all prisoners were released, twenty-three Americans rejected repatriation and settled in Communist China while others were suspected of collaboration. The revelations raised suspicions of brainwashing and ignited another debate about the lack of mental toughness among American men. All the debates, she says, were trumped by an even larger one over gender roles, sexuality, parenting, class, and race (p. 179). Failings in all these areas seemed to have led to the mental collapse of American prisoners and produced inquiries into what an Army psychiatrist referred to as the “rottenness of American character” (as cited in Carruthers, 2009, p. 207). Where would social critics concentrate their fire for maximum effect? Carruthers suggested they painted a bull’s eye on two targets: affluence and motherhood.
Captivity in America would become a condition associated as much with consumerism as with Communism (p. 231). Carruthers draws on the comments of journalists and researchers of the time who alleged that post-World War II existence under the highest standard of living in the world had corroded national character. Prosperity had plumped the flesh, sapped the spirit, and negatively influenced American men’s capacity to endure (p. 208). Mothers were allegedly accomplices to this crime of male emasculation. They became enablers in the areas of pampering, coddling, and cosseting. Instead of shoving kids out the door to toughen their bodies through vigorous play, mom was somehow responsible for allowing them to become couch potatoes, hunkered down in front of a television set, a form of in-home brainwashing. Carruthers quotes Army psychiatrist Colonel Erwin Mayer, who in a 1956 article summed up the criticism of ‘momism’ by saying, “a boy who has been brought up largely by his mother alone, a boy who...we refer to in psychiatry as a dependent character...did not withstand the stresses of captivity at all well” (as cited in Carruthers, 2009, p. 208). It was almost as if Americans had brought this on themselves.

Blaming motherhood for masculine mental failings during the Korean War constitutes a large part of the picture Carruthers assembles to explain why US soldiers either collaborated with or defected to the Communists. But others suggest that picture is incomplete. Matthew Dunne has argued in A Cold War State of Mind: Brainwashing and Post War America Society that corporate America and Madison Avenue bear some responsibility. The post-war workplace was no place for independent thinkers, he claims. Advertising, which sought to channel behavior and Organization Man indoctrination were all used to convey a simple message to workers: Accept. Another area Carruthers might have emphasized more was the run up to Korea: World War II. Americans in the millions traded in their identities for look-alike uniforms and look-alike ration books. If the message from Madison Avenue was “Accept,” then the wartime message from Uncle Sam was “Obey.” Both messages go a long way to help explain the corrosive environment, which produced weak American minds.

Shortcomings aside, Carruthers concludes that from a contemporary perspective, no one can know with certainty the details of the lives Americans led while in the hands of Islamic State militants, or if the experience of captured soldiers even compares. Nor can anyone know with certainty the specific reasons for their deaths at the hands of a group whose depravity seems to know no boundaries. But Carruthers closes her work by mentioning that after Korea, the US determined that American soldiers should never again quail in captivity. It adopted many of the interrogation techniques used by their Cold War Communist adversaries, including sweatboxes, electric shocks and sleep deprivation. Their uses have apparently been perfected over time: A 2005 Amnesty International report dubbed Guantanamo Bay as the “gulag of our times” (as cited in Carruthers, 2009, p. 235). Faced with the Islamic State’s preferences for knives, machetes, and scimitars, the learning curve this time might be shorter.

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CALL FOR PAPERS, DECEMBER 2015 ISSUE

For the December journal, we continue to solicit scholarly articles (3000 to 5000 words) that have not been published elsewhere but are “working papers.”

Papers of all types are welcome including theory papers, empirical or case studies, methodology papers, literature reviews, and the like, from both positivist and naturalistic traditions. We would prefer papers that emphasize practical relevance that resonate with our readers, though papers must be research-based. Also, please note that these submissions will be considered “working papers” that can be submitted to other journals.

Each submission will be coded before being sent for review. Submissions will go through a blind review by two peer reviewers (thanks to all of the faculty who have volunteered to help with this in their area of expertise). Final selection of articles for this edition will be made by the editorial board.

There are two templates to be used for submission along with two APA reference source materials. They are available through the DeVry Commons intranet community site, DeVry University Journal of Scholarly Research:

– Guide to APA Research Writing and Formatting Template Revised Nov 2013
– Guide to APA Research Writing and Formatting Revised Nov 2013
– DeVry University APA Handbook
– APA 6th Guide to Citing Sources

Submission deadline is September 1, 2015.

Authors who have previously submitted papers for past issues are encouraged to re-submit their revised papers. Papers should be sent with an additional document that includes comments showing how Reviewers’ and Editors’ feedback was addressed.

All papers and reviews can be submitted to Managing Editors Sarah Nielsen and Deborah Helman via the following email address:

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For the December journal, book reviews continue to be a regular feature. Under the direction of Dr. John Morello, colleagues may submit reviews of both fiction and non-fiction work which adhere to the following publication guidelines:

1. Reviews should be between 500-1000 words in length, double spaced and include the following: author, title, place of publication, publisher, year, price, page length (including introduction and text) and International Standard Book Number (ISBN).

2. Reviews should include a brief summary of the scope, purpose, content of the work and its significance in the literature of the subject. They should evaluate the strengths and weaknesses of the work and also pay attention to the use of sources (including documentation), methodology, organization and presentation.

3. Reviews should be fair, balanced and treat authors with respect.

Book Review submissions will observe the same deadline as paper submissions: September 1, 2015.

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