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Contents

Medieval Ways

Vocational Pedagogy in Dante and Chaucer

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Abstract

In recent years scholars have contended with questions surrounding the fate of higher education in the United States. Under economic duress, now intensified with the COVID-19 pandemic, they have made defenses and charted courses of action to make colleges and universities more viable and valued by various stakeholders across the social and political spectrum. One interesting proposal is a renewal of higher education's role in guiding students in thinking about and reflecting upon their vocations and life trajectories. Scholars like Tim Clydesdale (2015) have implored colleges and universities to invest in vocational exploration programs to help assist students in this critical, life-changing endeavor and to foster students' conceptions of purpose and meaning during their undergraduate experience. In adding to these perspectives, looking to the past can offer incisive and nuanced perspectives on vocational exploration as well. Considerations of medieval vocational thought, particularly as portrayed by Dante and Chaucer, provide fertile ground for students to consider more broadly, and more deeply, the nature of their vocations.

Introduction

In the ongoing conversation concerning the crisis facing the status and viability of higher education in the United States, a crisis now intensified by the COVID-19 pandemic, Tim Clydesdale offers a fresh approach. In response to criticisms of higher education involving the

astronomical rise of costs and students' lack of preparation for careers (particularly from liberal arts programs), Clydesdale proposes that American colleges and universities return to what was once one of their central tenets: fostering students' vocations. In *The Purposeful Graduate: Why Colleges Must Talk to Students about Vocation*, Clydesdale explains that in earlier eras, higher education was "marked by a coherent theme of creating a meaningful and engaging life, which lauded public service and contributing to the greater good."[1] In the current crisis, Clydesdale argues that a return to focusing on students' vocation and purpose can revitalize institutions today. Graduates who are afforded the time and space during their undergraduate years to consider and explore their calling in life will be better able to make meaningful contributions in their careers and in public life. As Clydesdale explains, in order "to maintain their autonomy and core structure," colleges and universities need to provide "intentional and systematic assistance to students in identifying talents, clarifying values, and developing the grit that will sustain them on the long path to productive, global citizenship."[2] By engaging students in questions of vocation, institutions in higher education can serve, once again, an integral role in contributing to students' sense of meaning and well-being, helping, in turn, to alleviate current and persistent critiques levied against them.

The conflict in American higher education between liberal and vocational education has been present for most of its history.[3] Today the debate has branched out into a more multi-faceted conception of "vocation" that goes beyond narrow career preparation and into additional realms and responsibilities of students' lives. Clydesdale contends that the "new strategy" he offers is part of a current strand of discourse taking place regarding the crisis afflicting higher education.[4] Other scholars are examining the role of institutions in helping students explore and understand their sense of personal and professional purpose. Many of these scholars, in line with Clydesdale, consider this unique role of institutions particularly important in this tumultuous and troubled era in higher education. Many of these works have been in response to scholars and other stakeholders who have sounded the alarm concerning higher education's vulnerabilities in public perceptions. In *Academically Adrift: Limited Learning on College Campuses*, Richard Arum and Josipa Roksa present strong empirical evidence, through standardized tests, surveys, and transcript information, that college students show no marked improvement in academic skills after two years of coursework.[5] These skills include reasoning, writing, and critical thinking, all skills most people assume are strengthened in college classrooms. These results, naturally, instigated much debate and con-

sternation; if higher education institutions cannot fulfill their primary function, why must they continue to be funded or even exist? Scholars, in response, have offered various proposals aimed at rebuilding institutions' academic responsibilities in light of their perceived feeble performances. Richard Keeling and Richard Hersh, in *We're Losing Our Minds: Rethinking American Higher Education*, also present evidence that institutions are not effectively instilling the academic skills they promise to students.[6] Keeling and Hersh argue that, to rebuild the academic standing of colleges and universities, institutions need to focus more on robust learning experiences outside of the classroom. A more intentional approach to teaching and learning across campus and through co-curriculum programs is vital, argue Keeling and Hersh, for higher education to fulfill its academic promises and potential. In *College: What It Was, Is, and Should Be*, Andrew Delbanco provides a defense of liberal education through its unique ability to ask the questions and provide the space for students to consider what constitutes a meaningful life. Such considerations, according to Delbanco, are critical in a global economy fueled with rapid technological progress.[7] Using a narrower focus, Alexander W. Astin, Helen S. Astin, and Jennifer A. Lindholm, in *Cultivating the Spirit: How College Can Enhance Students' Inner Lives*, present evidence that students who grew both religiously and spiritually during their undergraduate years also had better, more-enriching experiences academically and socially on their campuses.[8] With these results, the authors ask if institutions should place more focus on spiritual growth in order to improve outcomes for students in other components of their undergraduate experience.

As Clydesdale notes, his work contributes to this conversation regarding different approaches that institutions can take to revitalize their purposes and methods. As more scholars proposed that institutions place a more intentional focus on engaging students with meaning and purpose within their undergraduate experience, in the classroom, and elsewhere on campus, Clydesdale embarked on a large-scale, mixed-methods study concerning vocation and purpose-based education on religiously-affiliated colleges and universities across the country. The Lilly Endowment Inc. provided funding to 88 institutions to "develop programming that would foster campus conversations about questions of meaning and purpose, and in particular their religious underpinnings, which is the theology of vocation."[9] Clydesdale and his research team, using a variety of different methodologies, studied 26 of these institutions, ranging from research universities in large cities to small liberal arts colleges in rural areas. The level of religious-affiliation also varied widely: some institutions were religious in name only,

while religious experiences centered student and institutional life on other campuses. Clydesdale finds compelling evidence that these exploration of vocation programs benefited students, faculty, staff, and institutions as a whole. Based on his results, Clydesdale argues that when institutions "meaningfully engage their organizational histories to launch sustained conversations with students about questions of purpose, the result is a rise in overall campus engagement and recalibration of postcollege trajectories that set graduates on journeys of significance and impact."[10] Even though the study only included religious-affiliated colleges and universities, Clydesdale is sanguine about versions of these exploration of vocation programs at state institutions too. These colleges and universities, even under different guidelines, can "begin with engaging questions, with stories of meaningful journeys by individuals and institutions, and keep theological and spiritual content in descriptive and historical forms."[11] It is this "new strategy" that Clydesdale offers to revitalize higher education.

Clydesdale ultimately documents the positive benefits that accrue for various stakeholders when institutions create and foster exploration of vocation programs in a directed way. These exploration programs, like the participating institutions themselves, varied widely in the manners in which they operated and in the support offered by administrators, faculty members, and staff personnel. To help prompt and encourage students to think about questions of vocation and meaning in their lives, some institutions adopted campus-wide initiatives, such as retreats and offices on campus providing time and space to talk with faculty, staff, and other students. Other institutions focused more on classroom instruction by developing seminar courses specifically focused on questions of vocation and also by encouraging all instructors to incorporate content and inquiries involving meaning and purpose into all courses. Some intuitions placed focus on vocation exploration outside of campus through mentored internships and service-learning opportunities. Even with the diversity of these different vocational exploration programs, all ultimately aimed to prompt and encourage students to explore questions of meaning as they began preparing for their lives beyond campus. Students, for the most part, benefited greatly from participation in these programs, particularly in being prompted to identify their own talents and skills and in identifying the needs of others. Many appreciated the time and space, along with acquiring a vocabulary, to reflect on purpose with faculty and staff members who shared stories of their life trajectories in pursuing their own vocations. These vocational exploration programs fostered a sense of community and camaraderie on campus held in common by multiple stakeholders.

Along this line, and perhaps of most interest to those concerned about the economic viability of higher education today, Clydesdale found that these vocational exploration programs "possessed notable retention effects"[12] for students in these participating institutions. He notes that there is "nothing inherently retention-related about purpose exploration," as "its retention effects lie in its community-building effects."[13] Such evidence, though limited, should at least garner the attention of those both inside and outside academia, as student retention plays a major role in the budgetary concerns of colleges and universities.

As Clydesdale admits, providing students this time and space in which to explore questions of meaning and vocation is actually a return to the past, when institutions placed more concerted focus on them. Clydesdale's argument is that this particular return to the past is crucial as students today are facing a dynamically changing world, with seemingly all-encompassing opportunities and challenges. While Clydesdale recommends this specific return to the past in higher education in the U.S. in recognizing the importance of engaging with the concept of vocation, it is also worth considering if other reflections on vocation in the past can add to the conversation about its importance on college and university campuses today.[14] Can other ideas and frameworks concerning vocation from the past assist students, faculty, staff, administrators, policymakers, and parents in thinking about these issues today? We contend that the predominate culture of the western medieval world, so vastly different than today's, yet marked by consistent attention on and examination of vocation and its integral role in leading a meaningful life, offers just such a framework.

In particular, two of the greatest poets of this age, Dante and Chaucer, examine questions of vocation and meaning valuable for higher education today. Dante's *Divine Comedy* and Chaucer's *Canterbury Tales* serve as effective lenses through which to view both medieval and contemporary conceptions of vocation. Largely, both poets are thoroughly "medieval" (and Christian) in their portrayals of vocation, so their vibrant and representative depictions are sufficiently divergent from today's to serve as a fruitful source of comparison of the theoretical and practical differences in conceiving vocation then and now.[15] Despite their orthodoxy, however, the poets are not uncritical of contemporaneous thinking about vocation, nor do they shy away from raising perplexing questions and problems about such thinking. Both their willingness to pry into such issues as well as their success in uncovering significant deficiencies should inspire contemporary scholars both to further investigate contemporary notions of vocation and to consider what medieval insights can be valuable in today's discussion.

Universal Vocation

In what is likely the most "medieval" aspect of their vocational thinking, Dante and Chaucer indicate that all people have a divinely instituted vocation, and their portrayal of this general call takes the form of a metaphor: in their respective poems, Dante and Chaucer (and the other pilgrims the latter depicts) are travelers on their way. The poets are utilizing both the Christian conception of The Way, who in biblical terms is Jesus Christ, and also the well-established notion (at least as old as Augustine) that this life is a pilgrimage. As Egeus puts it, when consoling his son Theseus in Chaucer's Knight's Tale, "This world nys but a thurghfare ful of wo, / And we been pilgrymes, passynge to and fro."[16] One's pilgrimage is not merely to St. Thomas à Becket's shrine at Canterbury Cathedral, but toward the Heavenly Jerusalem, where Dante ends up at the conclusion of the *Paradiso*. While nonetheless admitting, and intricately describing, the multitudinous byways that people use to stray off the true path, both poets indicate that it is a matter of one's vocation that one is to be on the Way. That is, one is *called* to be on the Way. And this is not just true of the pilgrim-Dante and the pilgrim-Chaucer, who are the main characters of their respective poems. All people, Dante and Chaucer claim, are called to be on the way.

In the case of the *Divine Comedy*, Dante depicts himself receiving this call. Though often read in excessively allegorical terms (especially in undergraduate classrooms), the character Dante-the-Pilgrim is clearly a specific individual: he is the Florentine poet who was born in 1265 and is now 35 years old, he is the lover who is enthralled with Beatrice, and he is the patriot who is soon be exiled for the rest of his life. He is a real sinner who has was wandered off the path and who is called to return to it. Nevertheless, Dante-the-Pilgrim is also an everyman figure. The opening of the poem suggests as much: Dante-the-Poet begins, "In the middle of the journey of our life, I came to myself in a dark wood, for the straight way was lost."[17] He is midway on *our* life's [*nostra vita*] journey. This is the journey to Heaven that all people are on, and, as indicated in the poem's second canto, it is a pilgrimage that all, like Dante-the-Pilgrim, though perhaps not quite so spectacularly, are called to supernaturally.

In Dante's specific case, it is a rather exalted chain of command that brings him his marching orders: the Blessed Virgin Mary—St. Lucy—Beatrice—Virgil. The call Dante receives ultimately stems from and leads toward divinity, but this chain of command also reveals that any person's call to pilgrimage is the result of merely human, natural sources as well. Virgil, and all he represents (poetry, pagan philoso-

phy and learning, natural intellect, etc.), is among the means by which Dante is called. Indeed, Virgil is chosen specifically because Beatrice knows the appeal and authority Virgil holds in Dante's eyes. As depicted in the *Comedy*, one's vocation is a universal, supernatural call that utilizes specific natural means.

Chaucer portrays the nature of the universal calling in the first 18 lines of the Prologue to the *Canterbury Tales*:

> Whan that Aprill with his shoures soote
> The droghte of March hath perced to the roote,
> And bathed every veyne in swich licour
> Of which vertu engendred is the flour;
> Whan Zephirus eek with his sweete breeth
> Inspired hath in every holt and heeth
> The tendre croppes, and the yonge sonne
> Hath in the Ram his half cours yronne,
> And smale foweles maken melodye,
> That slepen al the nyght with open ye
> (So priketh hem Nature in hir corages),
> Thanne longen folk to goon on pilgrimages,
> And palmeres for to seken straunge strondes,
> To ferne halwes, kowthe in sondry londes;
> And specially from every shires ende
> Of Engelond to Caunterbury they wende,
> The hooly blisful martir for to seke,
> That hem hath holpen whan that they were seeke.[18]

These famous lines are full of callings, including calls to the sub-human world. May flowers are being called up by April showers. Crops are being called up by the Spring's West Wind. Mother Nature is calling birds to select their mates. These are all natural, normal, seasonal, unconscious callings. These callings are all *ordinary*—in the sense that they are *ordained*—all are following what one might call the Laws of Nature and Nature's God. And it is no different when Chaucer moves from the "when's"—*whan that Aprill*, *whan Zephirus*—to the "then" of line 12. That is, it is merely a normal, ordinary, ordained part of life that folk desire to go on pilgrimages—as normal as flowers growing and birds singing. And every calling described up through line 14 is universal: *all* flowers, *all* crops, *all* birds, and *all* humans. *All* are called. But like Dante, Chaucer moves quickly from the universal calling to the specific individuals called. All people desire to go on pilgrimages. Specifically, though, English people (it does not matter who—from any shire—all of them) journey to Becket's shrine at Canterbury. And even more specifically, after the first 18 lines of the General Prologue, Chau-

cer describes that on a specific day in a specific place—Southwark—in a specific building—the Tabard Inn—a specific group of thirty English pilgrims are gathered. Like with Dante, vocation is a universal, supernatural call that is manifested in specific, ordinary ways.

The frames of both poems suggest that each particular person is called on this pilgrimage. All are specifically called to the universal Christian vocation. All share in this vocational status of pilgrim. While the Middle Ages provided a setting in which at least in one sense vocation was universal and inextricably connected to religion, such an adherence to a ubiquitous, transcendental call to vocation does not exist in today's culture. This lack of a universal sense of vocation serves as Clydesdale's impetus for colleges and universities to fill this void. Without this guidance, college students often find themselves aimless, or, as Arum and Roksa say, these students are "adrift" in the transition between college and the real world. Delbanco explains that today "too many colleges are doing too little to help students cope with this sense of uncertainty."[19] In contrast to the Middle Ages, Clydesdale points out that "while living in this postmodern world offers many advantages, a major disadvantage is the fact that it assigns individuals the task of navigating life's purpose amid ever-churning seas of meaning."[20] With this lack of a transcendental call for many college students, Clydesdale argues that "universities and their graduates have also flooded the globe with knowledge that, absent purpose, has left many adrift in informational seas and lacking purposeful direction."[21] Of course, college students can seek out other avenues in which to consider their own vocations, particularly through relationships and conversations with family members and friends, or from larger movements, such as serving various social justice causes. But, as Clydesdale implores, this search can and should be supported and, if needed, initiated by colleges and universities. While globalization and other economic factors are changing traditional life trajectories, along with fundamental changes to family structures and religious practices, the search for vocations for today's college students is far-removed from the medieval world inhabited by Dante and Chaucer. While for most colleges, certainly public ones, there is no going back to the transcendental call for meaning and purpose provided in the western Middle Ages, such a void should probe us to think deeper about from where and from whom young people are called for vocations today. Without this guidance, Clydesdale, with others, fears that they will consistently lead "lives marked by consumerism, civic disengagement, and anomic morality."[22]

Particular Vocations

Dante and Chaucer, alongside the universal calling to be a Christian, also indicate that each person has a particular vocation or, more likely, vocations. Both poets themselves lived out various additional vocations. Besides following their Christian call, both obviously lived out their poetic calling as well as several others.

Dante, in his adolescence and early manhood, was a soldier and politician, and he lived out a political calling, even when during the last decades of his life he was exiled from Florence. He continued to serve as a counselor to Florence via letters; he also addressed epistles full of advice to various kings, emperors, and cardinals. During most of his exile, he served in various advisory and ambassadorial roles to the noblemen who served as his patrons. Indeed, his political exile opened up what he conceived as his prophetic calling that is borne out his epistles, his prose and poetry, and his service to his patrons.

Chaucer, also, lived out various vocations beyond the general call of Christian and the particular call of poet. Like Dante, he was a soldier and heavily involved in political life, holding a number of governmental jobs. He was an esquire of the king's household, an ambassador of the king, the controller of customs, justice of the peace, a member of Parliament, the clerk of the king's work (in charge of building and repair at ten royal residences), and a forest official. Add to these various duties both poets' call to married life and fatherhood, though both are rather reticent about family life, especially Dante, who has so much to say about Beatrice, but nothing about his wife, Gemma.

The characters both poets portray are no different in that they possess various and multiple vocations. Dante fills hell, purgatory, and heaven with poets, philosophers, churchmen—especially popes—husbands and wives, monks and nuns, soldiers, kings, politicians, disciples, and angels. Chaucer, as Dryden famously said, displays "God's plenty," by which he meant that Chaucer displays the full range of human types, and this includes a wide spectrum of vocations.[23] Many of the pilgrims' callings can be classified within what were contemporaneously known as the "Three Estates": those who pray, those who fight, and those who dig. For instance, the monk, prioress, friar, and parson are members of the first estate; the knight and his squire the second, and the Plowman representative of the third. But there are plenty of callings that do not easily fit into any of those.[24] The emerging merchant class, for instance, including the miller and the guildsmen are not really members of what was traditionally described as the third estate. And the Clerk, seemingly a sort of perpetual student, and no

doubt, as his title indicates, a cleric, may fit better in what we today would call academia rather than the first estate. Regardless of how one classifies each pilgrim's vocation, after finishing the General Prologue one might have a similar perception of the various particular vocations as one does after completing the *Inferno*: it does not look good for many of them. No pilgrim seems to fare well besides the Knight, Parson, and Plowman, and perhaps the Clerk, and plenty of modern criticism has found fault with even the so-called "ideal" figures.

As both poets portray the spectrum of particular vocations held by all in addition to their general Christian pilgrim vocation, the reader is well-situated to ask if any vocation is better than another. Are some vocations more suited to the heavenly pilgrimage? An obvious medieval answer would seem to be the religious vocations. At times, indeed, we use the term "vocation" today in just this sense, as a special calling to be a minister or priest, or monk or nun, devoted to God's service. In the Middle Ages, a vocation of the first estate was undoubtedly seen as a higher calling. In his portrait of the Parson, Chaucer describes the pilgrim's ideal qualities and actions (and contrasts them to what was apparently more typical of actual priests), and he concludes: "if gold ruste, what shal iren do? / For if a preest be foul, on whom we truste, / No wonder is a lewed man to ruste."[25] Those called to the "religious life" are of more noble metal than the rest of humanity. Clearly, the religious life is a higher calling. Nonetheless, one does not need to read much of the General Prologue to see that holding a religious vocation does not ensure sanctity—witness the Friar and Monk, for instance. And it seems likely that the Canon, a cleric who comes upon the Pilgrims as they are getting near to Canterbury toward the end of the *Tales*, but who shamefully runs off, is the only one for whom the reader has no hope of his salvation, of his arriving at either Canterbury Cathedral or the Heavenly Jerusalem. Though the expectations are higher for those called to the religious life, Chaucer acknowledges that they can rust, and corruption of the best is the worst.

Dante also privileges religious vocations. In fact, this is most clearly seen as he condemns those who hold them.[26] In one of the first poetically fitting punishments he witnesses—that of the avaricious and prodigal clashing against one another—he is amazed by the number of clean-shaven heads he sees, that is, of clergymen. He asks Virgil, "Master, now explain to me what people this is, and if these tonsured ones to our left were all clerics."[27] To which Virgil responds, "These were clerics, who have no hairy covering to their heads, and popes and cardinals, in whom avarice does its worst."[28] This is one of the few sources of wonder that ceases quickly for Dante, as time and time

again in his descent through hell he meets prominent churchmen. The simonists in the third pocket of the eighth circle of hell are a special point of emphasis for those with a religious vocation, as simony is typically a clerical sin. It is the buying and selling of spiritual things, which could include acts such as charging for sacraments or buying church offices and positions. Among the simonists, Dante gives one of his angriest speeches during Canto 19 of the *Inferno*, in which he condemns Popes Nicholas III, Boniface VIII, and Clement V (the latter two before they are even dead). And this condemning speech is echoed later in Heaven by a blushing St. Peter, and even Beatrice becomes pale upon hearing Peter's words.[29] Like Chaucer, Dante nonetheless sees the clerical state as the highest calling. During a conversation with Pope Nicholas III, Dante denounces simonists, claiming that he would "use still heavier words"—how, it is not easy to imagine—but that he is "forbidden by [his] reverence for the highest keys, which [Nicholas] held in happy life."[30] A similar meeting occurs on the fifth terrace of Mount Purgatory. Upon meeting the once-avaricious but now-repentant Pope Adrian V there, Dante bows down to him. Adrian commands him to rise, calling him a "fellow-servant" and quoting Matthew 22:30: "When the dead rise again, there is no marrying and giving in marriage; they are as the angels in heaven are."[31] The notion here is that, likewise, when the dead rise again, there will be no popes, no clergy, no laity. In the afterlife, at least, there will no longer be a vocational hierarchy.

In this life, in which Dante and Chaucer do suggest a vocational hierarchy exists, the vocations and estates other than those who pray are nonetheless afforded dignity. Those not called to the religious life, those who fight and dig, and sell, and build, and teach, and do everything else, they too are instruments for God, though of a different, and baser, metal—iron, not gold. As the Wife of Bath explains in a slightly different context: "For wel ye knowe, a lord in his household, / He nath nat every vessel al of gold; / Somme been of tree, and doon hir lord servyse"[32]; in other words, a wide variety of lay vocations are useful and necessary, and all fit within the universal hierarchy of the three estates, all ideally serving the universal Christian vocation. As such, all types of particular vocations are nonetheless susceptible to corruption. All estates and vocations can rust, as we witness the miller, reeve, and shipman of the General Prologue, and as Dante depicts the corruption among poets, soldiers, and kings besides clerics. All that being said, however, one should not lose sight of what was mentioned earlier—that corruption of the best is the worst—so any debasement of a lay vocation will never be as perverse as that of a religious vocation.

Dante and the blessed in heaven show particular disdain for sinful clerics, especially popes.

A hierarchy of particular vocations different than that illustrated by Dante and Chaucer exists today. In fact, it is probably more accurate to say that hierarchies of particular vocations exist, as there is no universal, general vocation that would provide a standard by which to judge the relative merits of particular vocations (as there was in the medieval Christian worldview of Dante and Chaucer). A few different vocational hierarchies appear to be in place for students to consider today. In all likelihood, economics determines the most prevalent contemporary hierarchy. Many students choose a life trajectory devoted to preparing for lucrative careers, often in business or medicine. Such a choice makes financial sense, particularly in an era of economic upheaval and the rising cost of a college education. What might be termed a social justice hierarchy is also prevalent, as students assess the merits of prospective careers, in non-profits, education, and in other service organizations, based on the level of impact they will have on their local and global communities, and, in fact, many may gain more interest due to recent events in the U.S. Though less often considered, a religious hierarchy is still viable for some students, particularly in religious institutions, as they can prepare for different ministerial roles. Of course, based on the aforementioned concerns raised by Clydesdale and others about the lack of value and meaning guidance provided by colleges and universities, we may question how much guidance students receive within their navigation of the different vocational hierarchies. It is important to recognize that these vocational hierarchies are often implicitly chosen by students and/or externally imposed on them, whether by parents or societal pressures to conform to a certain kind of lifestyle. Looking to the past for other considerations of vocational hierarchies, such as through Dante and Chaucer, supports Clydesdale's plea for colleges and universities to offer intentional exploration of vocation programs to make these often implicit decisions more explicit.

Even though the sense of vocation is larger than a person's career path, careers still play a significant role in a person's search for meaning and purpose. Most individuals in the Middle Ages had little agency in choosing a career path: for the most part, males would take up the trade of their fathers, and females would learn the domestic arts from their mothers. The notable exception is religious vocations, which, largely, could be pursued by all (and which may explain Chaucer and Dante's frequent depictions of clerics who are not dispositionally suited to their religious callings). Today, however, college-age students have much more freedom in starting down a career path of their choosing.

As we often tell elementary students, they can be anything they want to be. Concomitant with such seemingly-limitless possibilities is the angst of making these decisions. Today's college students are presented with a plethora of options, and pressures, to choose a career path. Some college students may feel pressure from parents to choose a career path that is well-paying, others may choose a profession that fits their social justice inclinations, others may choose based on a religious calling, while others still may choose a profession that is glorified in television shows and movies. Though restrictive, the medieval conceptions of general and particular vocations were clearly defined and painstakingly defended. At the very least, colleges and universities can do more in providing guidance on career paths that fit students' dispositions and personalities, in particular by encouraging students to identify the possibly-implicit standards by which they are evaluating their future careers, and to acknowledge other standards by which they could so.

Such guidance is critically needed on today's university and college campuses, as examples abound of individuals who pursue career paths because of their financial rewards but are miserable within them. Likewise, we often encounter individuals in careers who do not fit their dispositional qualities. These seemingly endless choices and pressures were not faced by individuals in the Middle Ages, illuminating a critical void that needs to be filled intentionally by colleges and universities. If, as scholars maintain today, colleges and universities need to guide students in considerations of what constitutes an "informed and enriched human life,"[33] then guidance on career-choices, centered on vocational considerations, needs to be offered as well. As these scholars at present warn, the void in purpose exploration education on college campuses potentially creates dire consequences. Without a serious consideration of vocation, meaning, and life trajectories, students may find themselves pursuing careers and ways of life that do not fit their values or skill sets.

Avocations

As suggested above, Dante and Chaucer indicate that all vocations can be corrupted, that, as the Wife of Bath knows, there are various ways of "wandrynge by the weye."[34] There are various ways to vacate—to vacation—from one's vocation. What is the cause of such vacations? The easy medieval answer is fallen humanity. But Dante offers an additional answer in the voice of Charles Martel, whom he meets in the Sphere of Venus in heaven. When answering Dante's question about

how good fathers can beget evil sons, Charles comments on the diverse nature of vocations as well as mis-pursued vocations, their avocations. He begins by noting that there could not be citizens if "people d[id] not live differently through different callings."[35] Deducing from this (Aristotelian) principle, he goes on to argue, "your different effects must have different roots: hence one is born Solon, another Xerxes, another Melchisedech, and another the one [Daedalus], who flying through the air lost his son."[36] Nonetheless, Charles laments, in Dante's day, people "force into religious life a man born to gird on the sword" and "make a king of one who prefers words: therefore your course strays from the path."[37] Charles assumes that a distribution of labor is necessary for a functioning society, with people called to various vocations, such as rulers, priests, and artists. He also assumes that some are forced or persuaded into pursuing calls they are not fit for. Such are more prone to corrupt a legitimate and good calling if it is not truly their calling. What Charles describes still seems frequent for today's students, particularly when their parents encourage them to pursue fields of study that will yield them lucrative jobs, but jobs that they are not dispositionally suited for. Certainly, there can be dire social ramifications of the young being led to avocations. Dante describes numerous wolves in prominent church positions who jeopardize their flocks because they are not suited to be shepherds. Nonetheless, Dante indicates that pursuing an avocation is not sufficient to merit hell. In the third canto of the *Paradiso*, Dante meets two nuns—Piccarda Donati (Dante's sister-in-law) and the Empress Constance—both of whom were called to be nuns but later left religious life—more and less willingly. Both, nonetheless, were saved and are now blessed in heaven.

We suspect that some of Chaucer's pilgrims are not dispositionally suited for their vocations. For instance, neither the Monk nor the Prioress seem fit for a religious vocation. Nonetheless, especially given Chaucer-the-Pilgrim's live and let live attitude in the General Prologue, it is difficult for us readers to despair of the salvation of either one. The general call of Christian pilgrim (and repentance and God's mercy), both poets seem to conclude, trumps any particular vocation or avocation. Of course, without such a general call today, many students face much angst in choosing and pursuing different life trajectories and vocations. Today's decisions on vocations and careers, of course, are nowhere near as final as those in the Middle Ages, as many individuals change careers multiple times. Such decisions today, too, are not often thought to produce the eternal consequences that marked vocational paths in the Middle Ages. Even so, students face much angst and worry in choosing which life trajectories and vocations to pursue,

especially in tumultuous social and economic climates. Mental health concerns are gaining increasing attention on college campuses, as students seem to be struggling, in part, with handling these pressures.

Likewise, once students graduate and enter the "real world," we can also consider the results of their vocational choices. As mentioned before, examples abound of individuals who are in careers and professions that do not fit their dispositional characteristics[38] or their sense of purpose. Many may look back on their college experiences and lament the choices made there that set them on this particular life trajectory. Such examples of unfulfilling and/or poorly-chosen vocations should increase our urgency in guiding students through this thought-process during their college years. This urgency drives Clydesdale's call for the creation and cultivation of exploration of vocation programs on today's college and university campuses. In contributing to Clydesdale's call, we offer that looking to the past, particularly to the Middle Ages, can provide students and other stakeholders on campuses additional, nuanced ways in which to consider and reflect upon these urgent and critical considerations of vocations. Whereas we have focused on the Western Christian Middle Ages, explorations and intersections of other cultures' conceptions of vocation can also be fruitful. Clydesdale notes from his research that "Coursework was the most direct avenue for introduction of purpose exploration texts" for students to consider.[39] Dante and Chaucer, along with poets of other cultures and ages who vibrantly portray vocational issues, have much to say regarding life trajectories and career-choices for today's undergraduate students, and it is worth considering their reflections on this momentous subject, if only as a means of encouraging students to recognize their own, possibly implicit, conceptions of vocation.

Notes

[1] Tim Clydesdale, *The Purposeful Graduate: Why Colleges Must Talk to Students about Vocation* (Chicago: University of Chicago Press, 2015), 25.

[2] Ibid., xvi.

[3] Much has been written concerning this dualism in American higher education, particularly in the early decades of the 20th century. For representative accounts of this debate, see Alexander Meiklejohn's *The Liberal College* (1920), *Freedom and the College* (1923), and *The Experimental College* (1932), and John Dewey's *The Problems of Men* (1946).

[4] Clydesdale, *The Purposeful Graduate*, xvi.

[5] Richard Arum and Josipa Roksa, *Academically Adrift: Limited Learning on College Campuses* (Chicago: University of Chicago Press, 2010).

[6] Richard P. Keeling and Richard H. Hersh, *We're Losing Our Minds: Rethinking American Higher Education* (New York: Palgrave Macmillan, 2011).

[7] Andrew Delbanco, *College: What It Was, Is, and Should Be* (Princeton, NJ: Princeton University Press, 2014).

[8] Alexander W. Astin, Helen S. Astin, and Jennifer A. Lindholm, *Cultivating the Spirit: How College Can Enhance Students' Inner Lives* (San Francisco: Jossey-Bass, 2010).

[9] Clydesdale, *The Purposeful Graduate*, 3.

[10] Ibid., xvii.

[11] Ibid., 218.

[12] Ibid., 97.

[13] Ibid., 98.

[14] William C. Placher (ed.), *Callings: Twenty Centuries of Christian Wisdom on Vocation* (Cambridge: Eerdmans, 2005), 3, 9-10, begins his anthology of texts discussing Christian conceptions of vocation with just such a claim: "One reason to read passages on vocation from the history of Christianity is thus to encounter a range of different options," including those that "challenge present assumptions" and that enable us to "gain richer perspectives on our own time."

[15] Though, as we argue below, the western medieval world was more unified in its conception of vocation than we are today, variance of opinions certainly existed. For a good overview of such thinking, see Section 2 of Placher (ed.), *Callings*.

[16] Chaucer, *Canterbury Tales*, I.2847-8. All quotations of the *Canterbury Tales* are from Larry D. Benson (ed.), *The Riverside Chaucer* (Boston: Houghton Mifflin, 1987) and are cited by fragment and line numbers.

[17] Dante, *Inferno*, 1.1-3. Translations of the *Divine Comedy* are Robert M. Durling's: *The Divine Comedy of Dante Alighieri* 3 vols. (New York: Oxford University Press, 1996-2011).

[18] Chaucer, *Canterbury Tales*, I.1-18.

[19] Delbanco, *College*, 148.

[20] Clydesdale, *The Purposeful Graduate*, 21.

[21] Ibid., 172.

[22] Ibid., 204.

[23] For a comprehensive examination of the particular vocations depicted in the General Prologue (and Chaucer's criticisms of them), see Jill Mann, *Chaucer and Medieval Estates Satire: The Literature of Social Classes and the General Prologue to the Canterbury Tales* (Cambridge: Cambridge University Press, 1973).

[24] For a discussion of the malleable and permeable boundaries between the three estates in the Tales, see Peggy Ann Knapp, *Chaucer and the Social Contest* (New York: Routledge, 1990).

[25] Chaucer, *Canterbury Tales*, I.500-2.

[26] For a clear and detailed examination of Dante's critique of the abuses of religious vocation as well as Dante's conception of his own poetic and prophetic vocation, see Nick Havely, *Dante and the Franciscans: Poverty and the Papacy in the "Commedia"* (Cambridge: Cambridge University Pres, 2004).

[27] Dante, *Inferno*, 7.37-39.

[28] Ibid., 7.46-48

[29] Dante, *Paradiso*, 27.31-66.
[30] Dante, *Inferno*, 19.100-3.
[31] Dante, *Purgatorio*, 19.134-8.
[32] Chaucer, *Canterbury Tales*, III.99-101.
[33] Clydesdale, *The Purposeful Graduate*, 220.
[34] Chaucer, *Canterbury Tales*, I.467.
[35] Dante, *Paradiso*, 8.118-9.
[36] Ibid., 8.122-6.
[37] Ibid., 8.145-8.
[38] For an interesting perspective on dispositions and career-choice, see Matthew B. Crawford, *Shop Class as Soulcraft: An Inquiry into the Value of Work* (New York: The Penguin Press, 2009).
[39] Clydesdale, *The Purposeful Graduate*, 291.

Quality, Cost, and Time

The Iron Triangle of International Postsecondary Programs in Ontario

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Abstract

This study examines complexities related to the program quality of an in-bound International Student and Staff Mobility (ISSM) program (Knight, 2018) at a university in Ontario, Canada. The paper considers the perspectives of three chief stakeholders—students, faculty, and administrators—within the context of international programs and adopts the iron triangle (Adams, 1981; Blaich & Wise, 2018) comprising cost, time, and quality as its framework to examine the sustainability of academic programs and ways to enhance program quality. The authors argue that quality is a critical part of the prestige of a program and even the institution, and high quality programs can be delivered in a myriad of ways depending on context. The authors raise thought-provoking questions corresponding to the competing interests of the three chief stakeholders and posit that solutions catering solely to international students' interests will not be sustainable. Support for international students, albeit essential for their overall adaptation to cultural and academic norms, requires closer vigilance so that the program costs do not become unsustainable and raises questions about quality. The paper concludes by inviting all stakeholders to engage in honest discussions to ameliorate raised issues.

Introduction

As of 2019, Canada had the third-highest international student population globally (behind the United States and Australia) with 642,480 international students in various levels of study, representing

a 185% increase from 2010 (Canadian Bureau for International Education, 2020). International program and provider mobility (IPPM) programs offered in students' home countries have gained in popularity (e.g., see Niagara College KSA, 2019), with up to 40% of international students accessing some form of higher education in their own jurisdictions through IPPM (Knight, 2018). The majority of international postsecondary programs rely on international students leaving their home countries to study in the host country, in what is termed international student and staff mobility (ISSM). With its long history compared to IPPM, ISSM boasts higher numbers of students and remains attractive to postsecondary institutions, particularly from a financial standpoint due to government funding reductions.

Although postsecondary institutions have sought out private and public partnerships to relieve funding deficits (Altbach & Knight, 2007), such agreements risk compromising educational institutions' research and teaching activities (e.g., see the Oliviere case in Thompson et al., 2005). The situation is further exacerbated in Ontario where the provincial government has capped the annual increase of tuition of domestic students at 5% (Norrie & Lennon, 2011). Consequently, postsecondary institutions have turned to international student fees, which remain unregulated (Crawley, 2017), as a way to resolve universities' underfunding predicament. In short, universities aggressively recruit international students and charge them higher tuition fees to increase revenues in the face of reduced public funding (Canadian Federation of Students, 2015; Crawley, 2017; Hegarty, 2014; Ibbitson, 2018; Macrander, 2017; Maru, 2018; Norrie & Lennon, 2011; Rhoades, 2016). This situation is further worsened by the ongoing pandemic because international student participation in some programs has been curtailed due to travel-related bans, thus augmenting universities' financial challenges (Canadian Broadcasting Corporation, 2020; Friesen, 2020).

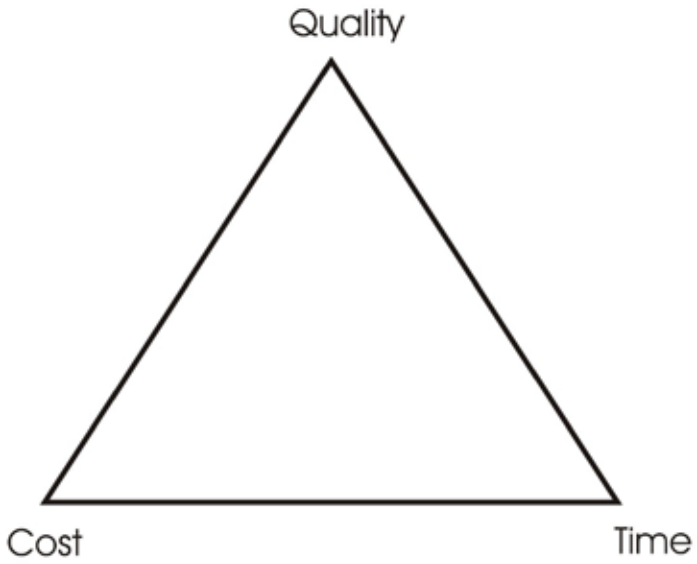
Despite international programs' emergence as the apparent solution to postsecondary institutions' fiscal shortfalls, a new set of complications arises pertaining to cultural differences, a need for greater student support services, and the question of academic integrity. In this paper, we focus on program quality because (a) it most closely matches our own experiences in planning and delivering international programs, and (b) it is an aspect of the program over which universities have the most direct control. Our experiences suggest that the challenges facing international programs' students, faculty, and administrators have not been addressed adequately. We examine this gap and demonstrate the complexities of postsecondary international student programs from these stakeholders' perspectives concerning program

quality. While we acknowledge that international program stakeholders' motivations, aspirations, and intentions may differ individually and collectively, we focus on issues pertinent to each stakeholder group. We do so using our institution's case as an exemplar and through the theoretical framework of the iron triangle. As our analysis demonstrates, stakeholders are aligned in their belief that higher-quality scholarship is likely to occur when international students receive greater academic and non-academic support, enhancing program quality.

Theoretical Framework: The Iron Triangle

Findings from the literature examined in this study are underpinned by the theoretical framework of the iron triangle (also called the project management triangle), a concept initially proposed by Gordon Adams in 1981 for use in political analysis and subsequently modified to suit the context of education and higher learning (e.g., Blaich & Wise, 2018; Daniel et al., 2009; Lane, 2014; West et al., 2012). The following section explains the three interconnected central concepts of international programs' length (i.e., time), quality, and cost (as shown in Figure 1) to illustrate the iron triangle's contextual validity.

Figure 1
Relationship of Program Time, Quality, and Cost



The use of a triangle is significant: Although any two of the three concepts can be treated as independent variables, altering them would affect the third. We contend that the iron triangle encapsulates international postsecondary programs and helps us understand the complexities of relationships among stakeholders in such programs in Ontario.

We deviate from the depiction by Daniel et al. (2009) of the iron triangle—in which the three vertices are access, cost, and quality—because access, when applied to international programs, can be seen as a function of many things:

$$Access = f\begin{cases} -\ Financial\ resources \\ -\ Time \\ -\ Geopolitical\ relations \\ -Travel\ arrangements \\ -\ Admission \end{cases}$$

Access encompasses students' financial resources for various expenditures; duration of time needed to earn the degree or certification; ease of obtaining travel documents from the home country and permission (often in the form of a student visa) from the host country; and fulfillment of admission requirements. In short, access is negotiated almost exclusively from the students' perspective. In the case of international students, access centrally rests on the cost of the program they enroll in. More broadly, the cost can be examined from student, faculty, and administrative perspectives and focuses our analysis. Cost can be conceptualized as follows:

$$Cost\ = f\begin{cases} -\ Delivery\ of\ the\ program \\ -\ Cost\ of\ acquiring\ credential \\ -\ Cost\ of\ teaching\ and\ learning\ supports \end{cases}$$

The costs are those borne by administrators, students, and faculty members, respectively. Often access to the programs is determined by the associated costs for the international students.

Time can be represented as follows:

$$Time = f\begin{cases} -\ Duration\ of\ the\ program \\ -\ Duration\ of\ supports \\ -\ \ Length\ of\ faculty\ commitment\ (workload) \end{cases}$$

Time represents both the duration of the program and also when it begins and ends. For instance, a student undertaking a four-term program in fall/winter terms will finish the program in two academic calendar years but can accomplish the same degree in one year in

consecutive terms—a critical detail in attracting students. The distribution of yearly workload and the longevity of commitment to the program also must be factored in, however subtly, in the development of the academic programs and affect faculty and administrator considerations.

Quality is often referenced by various stakeholders but is difficult to operationalize, hence the proportional sign in the following equation:

$$Quality \propto \begin{cases} -\ Academic\ background \\ -\ Reputation \\ -\ Knowledge\ and\ skills\ acquired \\ -\ Prospects \\ -\ Internal\ processes \end{cases}$$

Within the context of international educational programs and this paper's scope, we define the quality of programs based on five components listed in the equation above. The academic background of incoming students determines what can be taught and what previous knowledge base can be relied upon and leveraged. An institution's reputation attracts students of a certain calibre, and that contributes to the ongoing program quality. The competencies acquired by the graduates further enhance the reputation of the program and are a direct indication of its quality. The evidence of quality is also indicated by the graduates' economic success or prospects of future studies. Within the program's management, various internal processes of self-study, accreditation, senate oversight, multiple forms of assessment of students, preservation of academic integrity, and length of the program (among other things) are meant to enhance the program quality.

In the international programs, the issues of cost, time, and quality are discussed holistically across all stakeholders. However, there are three chief and distinct stakeholders in the mix: students, faculty, and administrators. Much like cost, time, and quality are interlinked in the iron triangle, so, too, are these chief stakeholders. Their interests, goals, and aspirations sometimes align with each other and sometimes not. Figure 2 illustrates the heterogeneity of stakeholder members' mindsets, agendas, and goals. The many fractures within the stakeholder orbs represent a frequent lack of consensus between members in specific stakeholder groups; that is, there are noticeable differences within each group on any single issue, and those must be acknowledged.

Using program quality, we examine the interrelationship among the three stakeholder groups related to cost, time, and quality of the international programs.

Program Quality

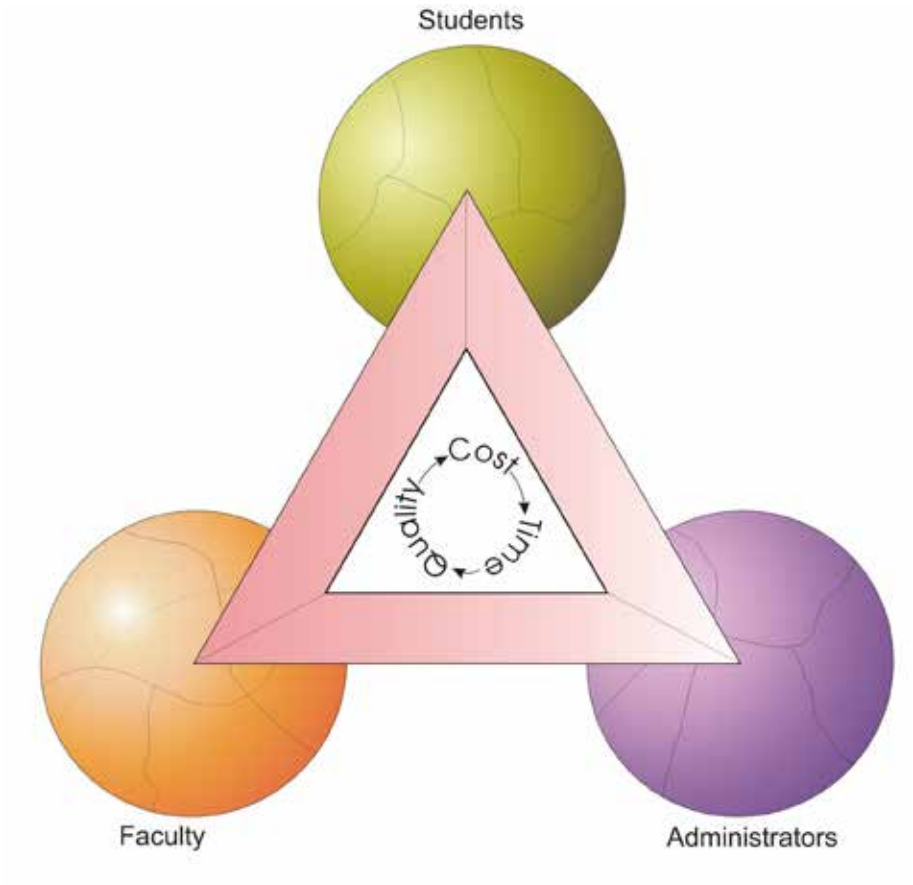
Although program quality influences prospective students' choice of programs (Chaguluka et al., 2018; Nicholls, 2018), it is difficult to pinpoint quality accurately and objectively. Measures used to assess quality include institutional, program, and faculty reputations as well as media reports—issues or variables that shape people's perceptions of a program.

Length of Program

A longer program helps international students acquire greater academic, social/cultural, and employment skills, as well as language

Figure 2

Stakeholder Groups in Relation to Time, Quality, and Cost



fluency (Alqarni, 2017; Bodycott, 2009), which is particularly useful if students choose to stay in the host country post-graduation. Yet Fitzsimmons et al. (2013) found that some international students opt for shorter duration programs, primarily to reduce expenses. McFadden et al. (2012) similarly identified time-to-degree as an instrumental program characteristic (ranked second only to student–faculty ratio) influencing international students' choice of program.

In Li and Tierney's (2013) study of one international Master of Education (MEd) program (listed as a 14-month program but most often completed in 12 months), students and administrators alike preferred a shorter-duration program. Administrators favoured shorter-duration international programs because it lowered operational costs and made the programs less complicated, especially when bracketed within one academic year cycle. International students preferred shorter duration programs because it meant that students could potentially enter the workforce in Canada (or in their home country) sooner (Li & Tierney, 2013). Bista and Dagley (2015) also identified employment opportunities in the host country and permanent residency as equally essential considerations among international students' choice of program. Yet its direct impact on the quality of the program delivered cannot be ignored.

The Canadian government requires full-time international students to be registered for a minimum of one year to meet immigration eligibility criteria (Government of Ontario, 2020). In Ontario, students who graduate from an accredited master's program can apply for permanent residency through the Masters Graduate Stream under the Ontario Immigrant Nominee Program (Government of Ontario, 2020). Fast-tracking to permanent residency through the shorter program is an attractive characteristic of the international MEd program.

Yet, a shortened program could have a detrimental effect on program quality, as it reduces students' time to master (or indeed acquire) the academic content and sociocultural skills that may improve their prospects for employment or further studies. Moreover, when the congruence between the earned degree and the matching skills is compromised, the awarded degree fails to convey the degree holder's knowledge or skills, thus undermining the degree's quality—and hence the international program.

A university should ensure its student candidates possess the requisite skills before awarding the certification/degree to preserve the program's quality. Doing so requires methodical repetition and students' prolonged exposure to concepts, ideas, and practices, requiring adequate time for teaching, learning, and assessment. When the pressure to reduce the duration of time within which one acquires the degree becomes a critical factor, program quality can be diminished.

Postsecondary institutions' increasing reliance on international student tuition and related fees to offset funding shortfalls puts them in a business transaction with students. In return, the international students demand the acquisition of their degrees in minimal time, which compromises quality as it limits what can be covered during the program. Unless the calibre of students entering the program is relatively high, some content is omitted or not covered in sufficient depth to merit the granting of a degree or certification in the given subject. We can infer that the desire to shorten international programs is also a consideration for university administrators under pressure to shepherd students quickly through programs to reduce the amount of time and money spent on them. In terms of the iron triangle, we, therefore, have competing objectives:

short time + minimal expenses = possibly compromised quality
short time + minimal expenses = possibly larger profit margins

Academic Awards

Although an inexact measure of a program's quality, academic awards are indicators of comparatively higher achievement amongst recipients than their peers, thus conferring prestige to the individual and the program. Academic honours, like bursaries and scholarships, also motivate students. In a survey of international students, Wu and Myhill (2017) found that scholarship availability was the second biggest influence for international students selecting an institution (low tuition was the first). Because international students pay a substantial (not subsidized) amount for their education, academic awards become a means to subsidize their total expenditures.

Faculty members, too, perceive academic awards positively (Bista & Dagley, 2015). Awards are a mechanism to recognize students' scholarly achievements and a variable used in institutions' international and national ranking systems (van der Wende & Marginson, 2007). In turn, faculty members reap the benefits of working in highly ranked institutions. The challenge for faculty members is to balance the criteria of award and ability of students. If standards are too stringent for students to achieve, then the award fails to deliver positive effects; too lax measures create many eligible candidates, reducing the award's monetary value and its impact and significance. The adverse effects of awards also can compromise the quality. Exline et al. (2004) state that unhealthy competition amongst students vying for prizes can create a climate not conducive to high-quality performance.

The administrative position is somewhat aligned with other stake-

holders on student awards. On the one hand, student awards help advertise the program and attract students, yet on the other hand, they can be perceived as a superfluous expenditure that supports only a few select students. Ultimately, administrators proceed with caution regarding student financial awards, as they may also reduce programs' profit margins. The pros and cons can be summarized as follows:

Student awards = recognitition of quality + augmenting student program cost
Student awards = increased competition + higher administrative program costs

Diversification

Diversification refers to the student body's cultural and national diversity in international programs and is linked to program quality. Li and Tierney (2013) noted a consensus among students, faculty, and administrators with regards to having greater cultural and national diversity in the classrooms: When a particular cultural, ethnic, or linguistic group is overly represented in a program, the in-class (and hence program) dynamics are adversely affected. All stakeholder groups consider this negative outcome as a factor affecting the overall educational experience.

Allport's (1954) intergroup contact theory suggests that students' prejudices and negative attitudes are reduced if they have sustained interactions with people of other groups. When diversity in groups does not exist, there is dissatisfaction amongst students and faculty (Belkin & Jordan, 2016; Li & Tierney, 2013), and the potential benefit of diversification is unrealized. Allport's approach precludes sporadic interactions between the groups because, in that scenario, each group attempts to establish dominance over the other. Schweisfurth and Gu's (2009) study of international students raised serious concerns about whether the duration of a series of classes in a program was sufficient to achieve the positive outcomes identified by Allport; they questioned whether such strategies reproduced the stereotypes and divisiveness they were designed to challenge.

Overall, students' cultural diversification within a program holds the promise of achieving the goal of internationalization and the potential for creativity in problem-solving contemporary issues. These positive outcomes are summarized as follows:

diversification → *better learning*
better learning → *better quality*
positive effects of diversification → *more time*

Segregated Versus Integrated International Cohorts

There are two distinct and popular ways to deliver programs to international students: The first is alongside their native counterparts (i.e., the integrated model), and the second is separated from their native peers into parallel sections (i.e., the segregated model). In the segregated model, the instruction is given at a reduced pace and sometimes even using a different (or differentiated) curriculum, tailored resources, and revised pedagogical practices (de Jong & Howard, 2009). It is also a common practice that international students receive additional academic support from tutors. The segregated model is quite similar to Knight's (2018) IPPM model of internationalization.

Li and Tierney (2013) found that some international students expressed frustration for being segregated from their native peers, and this separation also produces tensions across faculty and support staff groups. Sometimes, however, students want segregated programs, as do some faculty members. Some faculty members perceive that most international non-native English speakers (NNES) students are ill-equipped to study alongside their domestic counterparts without modifications to course content, pace, rigour, pedagogy, assessment, and learning outcomes. Sometimes, international students, too, admit their shortcomings when placed the same classes as their domestic peers. Worthington et al.'s (2019) and van Onselen's (2019) findings also suggest this happens in many other universities.

Academic accommodations owing to deficits in English language fluency result in a different delivery of the program. Skyrme and McGee (2016) note that different curricula and pedagogical practices lead to different student learning outcomes, and these disparities in student learning and employment prospects create tensions between stakeholder groups. Concerns arise over the perceived lack of rigour and low quality associated with programs targeting international NNES students (Chiose, 2016; Todd, 2017). Still, some international students are satisfied with a segregated model that leads to the acquisition of the same degree because they feel vulnerable in classrooms with English-speaking domestic students (Su & Harrison, 2016; Trilokekar & Kizilbash, 2013; Washburn & Hargis, 2017). International NNES students identify the fast pace of delivery and the inclusion of culturally dependent and local cultural references into teaching as primary reasons they struggle to understand the content, do not actively participate in the classroom, and feel isolated (Belkin & Jordan, 2016). While some domestic students desire opportunities to interact with their international counterparts, others find it taxing to interact with

international students and engage with their cultural idiosyncrasies (Redden, 2013).

Administratively, the segregated model is beneficial because it reduces the number of potential complaints by faculty and students corresponding to academic support and program delivery. International NNES students also require extensive academic support to meet the degree's high standards. This demand for additional supports is not different from what other students might need too. But expenditure spanning across the entire student body for all programs is regarded as excessively expensive and unnecessary, and hence supports are only offered to international NNES students. One way to achieve this is by restricting the course-bank offered to international NNES students. Understandably, according to Li and Tierney (2013), this imposed separation displeases some international students because it reduces their course options and ability to interact with native or domestic students.

Administrators estimate costs and revenues of program delivery well in advance of their commencement. This planning determines and targets the number of students to be admitted. A tension emerges between meeting the admission quotas and adherence to the admission standards. If admission quotas are not fulfilled, programs close; if admission standards are compromised, quality suffers. Such a focus leads to the following relationship:

$$* \ segregated \ \& \ integrated \ programs \xleftrightarrow{affect(s)} program \ quality$$

Academic Integrity

Academic integrity underpins any educational system, but sometimes there is a disjunction between faculty and international students regarding its importance and meaning (Isbell et al., 2018; Skyrme & McGee, 2016; Su & Harrison, 2016; van Onselen, 2019). Todd (2017) reports that faculty members at a university in British Columbia "feel pressure to wave through the full-fee-paying foreign students" (para. 6); that is, they feel pressured to pass the high tuition-paying students regardless of their performance. Cook (2019) highlights similar concerns among university faculty members in Australia who admit they issue passing grades to students' work that previously would have been considered inadequate and unacceptable. Likewise, Worthington et al. (2019) assert that some administrators relax (if not at times ignore) institutional admission criteria for international students to meet enrollment targets and sustain both tuition revenues and a substantial application pool for subsequent years. The perceived pressure to pass substandard work could lead to practices that contravene general

academic principles associated with high standards, which in turn can compromise program quality for international and domestic students alike (Todd, 2017; van Onselen, 2019).

Isbell et al. (2018) maintain that different academic integrity perceptions may lead to increased infractions in students' work. Such violations may include unreferenced sources, copying, translating the text into English (e.g., through various translation programs), recycling papers from past students, and acquiring documents from online commercial sources (Bradshaw & Baluja, 2011). All of these undermine teaching and learning and, by extension, program quality, which can be expressed in the following equation:

$$\textit{academic integrity} \propto \textit{program quality}$$

In sum, program quality remains a concern amongst all stakeholders, with administrative support staff caught between faculty concerns and student frustrations. Even potential employers eager to employ newly minted graduates express dissatisfaction with the skill-set of graduates from programs in which program quality has been compromised, and academic integrity sacrificed in favour of shortened program (Baird & Parayitam, 2017). The perennial problems in our systems laid bare by an increased number of international students—and now by pandemic models of education—have no easy solutions. Kumar (2020) states, "The solutions that are to emerge in the higher education space have to balance propositions from the ardent supporters and the vehement critics of new, burgeoning forms of teaching, learning, and assessing in the COVID-19 shaped world" (p. 40). Preservation of quality is not only needed for the sustainability of the existing programs, it is imperative for the success of ISSMs. According to Schulte and Choudaha (2014), to preserve program quality and retain or elevate institutional prestige and reputation, more significant academic supports have been demanded by international students and deemed necessary by administrators to support students through the programs.

Discussion

Blaich and Wise (2018) noted that a maximum of two components out of cost, time, and quality could be treated as independent variables in the iron triangle. If one or two of these independent variables are altered, the remaining component(s) act as dependent variables and change to preserve the triangular shape (i.e., retain a sustainable configuration). Table 1 represents the relationship amongst cost, time, and quality to show which configurations are sustainable and which are not.

We acknowledge differences in expectations, approaches, and general views on international programs within the three stakeholder groups.

Suppose we assume low-quality programs are non-starters and not a viable goal. In that case, we can eliminate that configuration between quality, time, and cost and ignore the lower half of the table. Table 1 also demonstrates that various configurations of quality, time, and cost are perceived differently by different stakeholders and affect their impressions of sustainability. The only constellation that remains sustainable for all three groups is when a high-quality program is delivered at a reasonable pace and cost. Student costs include those expenses that their university can regulate and control (such as tuition fees, ancillary fees, textbook fees, on-campus meal plans, and residence costs if applicable) and those that they cannot control directly (lodging and transportation fee, health-related expenses, clothes, entertainment, inter alia). It is true that, from a student's perspective, they need to spend money on all aspect—those within the control of the universities and those that are not. Ultimately, it is the total cost that bears into students' decision-making, but within the context of this discussion, we are concerned with costs that universities can control. The faculty's cost is to be understood as the investments in educating international students (e.g., language support, writing support, additional tutorials, inter alia), often viewed as the effort required by faculty members. For administrators, cost means the resources they must allocate to deliver the program as advertised.

Our discussion and variations presented in the paper's body demonstrate where and how the three primary stakeholder groups' perceptions differ, and we want the reader to consider these variations.

Table 1

Various Permutations of Cost, Time, and Quality, and the Relationship to Sustainability

			Sustainability		
Quality	*Time*	*Cost*	*Student*	*Faculty*	*Administrator*
High	More	High	NS	S	NS
High	More	Low	S	S	S
High	Less	High	NS	S	NS
High	Less	Low	S	NS	S
Low	More	High	-	-	-
Low	More	Low	-	-	-
Low	Less	High	-	-	-
Low	Less	Low	-	-	-

Note. S = Sustainable; NS = Not Sustainable

Intuitive solutions to attend to the problems that might emerge by ignoring the intricacies are likely to miss the mark. For instance, some students are motivated to earn a degree with no intention of pursuing a career in the field and may primarily view a graduate degree as a viable pathway to permanent residency (Bista & Dagley, 2015; Esses et al., 2018). Other students may aspire to continue in the field and pursue doctoral studies. Programs that ignore one kind of student's aspirations are unlikely to remain successful and sustainable in the long run, especially under their current configuration. Likewise, there may be considerable differences in program administrators' and faculty members' outlooks. Some may perceive themselves as shepherding students to succeed, while others may believe their responsibilities end after a class, course, or program and are unencumbered by non-academic issues affecting international students. We contend that in these times of uncertainty and new modalities of catering to students, this is an opportunity for all three stakeholder groups to come together and creatively re-envision international programs to ameliorate these and other issues.

Recommendations

There are misalignments between and within stakeholder groups regarding what an appropriate student support model should look like, and consensus remains a challenge. A possible solution is to increase incoming English language proficiency qualifying scores for students. The consequences of raising the language scores most directly affect the NNES international students; however, administrators too would be disconcerted by the concomitant reduction in the pool of qualified applicants. Of course, administrators may be appeased by such a change if the elevation of language scores translated into a reduction in program operating costs.

The iron triangle model sheds light on possible configurations to offer a high-quality, sustainable academic experience to NNES international students. If an academic program is to remain viable, it needs to maintain a high level of quality among its instructional faculty, administrative support staff, and the students it admits. Admitting students who may be unprepared due to academic or non-academic issues is not a good position—pedagogically or bottom line. Said another way, admitting underqualified students into an academic program can be an economic boon to a specific unit or faculty; however, such a decision is unethical and unsustainable. The equation for our recommended model is as follows:

increased student English language competencies
→ *higher quality scholarship*

increased student English competencies
→ *lower program operational costs*

increased student English language competencies
→ *potential for minimal program duration*

Conclusion

Our underlying assumption with international programs, or any programs for that matter, is that they exhibit high quality to remain viable; if the quality is not sufficiently high, the programs will not be sustainable. We have established that quality means different things to different people, and there may not be a consensus amongst people within the same stakeholder groups. But one thing that is less controversial is that the quality of the program gives the program its prestige. In turn, prestige is socially recognized, and therefore, quality becomes a critical component for sustainability.

A program's quality is preserved by attention to its internal processes. That is, the curricula, the faculty members involved in the program, the contact hours, the assessment, and the grading criteria, amongst other aspects, are used to establish and preserve the high quality of the programs delivered. Periodically, these internal processes are examined either internally or through external agencies, depending on the program and its accreditation process. Unlike external factors (such as prestige) that are shaped by many elements beyond the purview of the university, internal processes allow for control over aspects of the program that govern quality. For this reason, most analyses of international programs focus prominently on the internal processes related to quality control. One revelation for us has been that different programs—indeed, various institutions—have adopted different models of program delivery to bolster quality. In other words, there is no singular way to deliver a high-quality program.

There is a nuanced difference in the perceived value attributed to academic support intensity amongst stakeholders. Some faculty members caution that excessive support given to students may obfuscate the authenticity of students' academic work. Nevertheless, for the most part, students and faculty are aligned to provide educational support to international students. More academic supports translate into the potential for generating higher-quality scholarship from international students. Therefore, academic support is considered an important, if not essential, component of a viable and sustainable quality academ-

ic program for international students. Ultimately, stakeholders align in their belief that the potential for high-quality scholarship is more likely to occur when international NNES students receive extensive academic and non-academic supports.

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Untapped Potential

Makerspace as Conduit for Talent Development

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Abstract

This article explores how makerspaces, a quickly growing development in schools, museums, public libraries, and other community spaces, may act as a conduit for talent identification and development for all students. The purpose of this paper is to provide an exploration of recent questions asked within gifted and talented scholarship in alignment with current research on makerspaces and maker style learning to suggest that the study of makerspaces may illuminate novel opportunities and new strategies for identifying and nurturing gifts and talents in all students to solve current and future societal problems.

Keywords: makerspace, talent development, talent identification, giftedness, creativity, best practices, inquiry learning, problem-based learning, society

Introduction

> *Talents and skills are ubiquitous. Education should be designed to reveal the talents and skills of every child.*
>
> —Pamela Cantor (2021, p. 15)

Cantor (2021) is not the first to recognize that schools are not designed to reveal the gifts and talents of all students. For decades scholars have called attention to the shortsightedness of traditional schooling. Among others, Treffinger and Feldhusen (1996) point out that schools should be designed to give every student the opportunities

and tools to develop to their own best ability; that utilizing a talent orientation rather than a giftedness lens "represents a new educational orientation that is concerned with the development of talents at all levels of ability, not just the highest or most precocious levels" (p.182).

Gifted and talented education in the United States has a long tradition of identifying students based on intellectual ability, typically using an achievement or aptitude test, to provide learners with opportunities to achieve more, to reach a higher level of giftedness. It has been suggested that traditional identification of gifted students misses a large number of those who do not perform well on standardized assessments, including some minorities (Andreadis & Quinn, 2017; Coronado & Lewis, 2017; Hodges et al., 2018). Despite decades of scholars calling attention to the weaknesses in identification of gifted and talented students, and proposals of alternative practices (Bloom & Sosniak, 1981; Gardner, 1983, 1995; Renzulli, 2012; Sternberg, 1984, 2015; Subotnik & Coleman, 1996; Treffinger & Feldhusen, 1996), IQ scores and academic achievement are still the most frequently used criterion for determining gifted and talented status in the United States public school system, and programs offered still focus on academic domains (National Association for Gifted Children & The Council of State Directors of Programs for the Gifted, 2015). As Dai and Renzulli (2008) explain, "a gifted program that only identifies high achievers in a conventional manner (relying on standardized achievement or aptitude tests) as gifted is destined to miss a big chunk of the innovative side of gifted potential" (p. 12). This may be critical as we move deeper into the 21st century.

Subotnik, Olszewski-Kubilius, & Worrell (2011) call attention to the importance of studying giftedness and talent development to address societal needs such as generating innovative products, services, and ideas as solutions for current and future problems related to the environment, economic, and social needs. Psychosocial skills development may be one of the most important focuses for talent development in the 21st century (Olszewski-Kubilius et al., 2016). With the need for identification of gifts and talents, but the potential of missing the very talents needed in the 21st century, how can educators identify and cultivate talents in all students? One possible solution may be makerspaces.

First, makerspaces provide opportunities for all students to engage in a wide variety of activities and domains learners may not typically explore on their own or in a school setting, so they may be one way to *identify* students with untapped gifts and talents. Second, makerspaces provide opportunities for learners to practice in new domains, as well as an environment that encourages psychosocial growth, and may support the *development* of talents.

This article is organized into four sections. The first section provides a brief review of literature on giftedness and talent development. The second section presents an explanation of what a makerspace is, what may happen in a makerspace, and some of the empirically identified outcomes from participating in makerspaces. The third section explores how makerspaces and gifted and talented education intersect. The final section explores and how this intersection may be an opportunity for further research.

Gifted and Talented Identification and Development

Recent models and theories of giftedness and talent development have embraced gifts and talents as multifaceted, with less focus on cognitive or academic abilities alone, and increased attention to other areas including creativity (innovation) and problem solving. Current theory recognizes that innate ability (nature) is only one factor in the development of gifts and talents, and that environment (nurture), as well as psychosocial factors play a role (Barbot et al., 2015; Barron, 2006; Bronfenbrenner & Ceci, 1994; Ceci et al., 2016; Dai, 2017; Stoeger et al., 2017; Subotnik et al., 2011). Scholars Subotnik, Olszewski-Kubilius & Worrell define giftedness and talents as follows:

> Giftedness is the manifestation of performance or production that is clearly at the upper end of the distribution in a talent domain even relative to that of other high-functioning individuals in that domain. Further, giftedness can be viewed as developmental, in that in the beginning stages, potential is the key variable; in later stages, achievement is the measure of giftedness; and in fully developed talents, eminence is the basis on which this label is granted. Psychosocial variables play an essential role in the manifestation of giftedness at every developmental stage. Both cognitive and psychosocial variables are malleable and need to be deliberately cultivated. (2011, p. 7)

Identification

Although some state and local educational agencies recognize domains of gifts and talents such as creativity, performing arts, and leadership, it appears that a majority of educational institutions in the United States still utilize ability and achievement tests to identify gifted and talented students (National Association for Gifted Children & The Council of State Directors of Programs for the Gifted, 2015). There is a high probability that using such measures for identification miss many students who could benefit from gifted and talent development programming. In fact, a recent meta-analysis of identification practic-

es (Hodges et al., 2018) indicates that there are still disparities in the identification of gifted and talented students among underrepresented (Black, Hispanic, and Native American) and represented (Asian and White American) populations, with variation in these disparities based on geographic region of the United States and the identification methods used. Included in the meta-analysis were identification practices such as portfolios and checklists, as well as tests that focus on problem solving, reasoning ability, and observation skills such as the RAVEN test and the Naglieri Nonverbal Abilities Test (NNAT), as well as the Cognitive Abilities Test (CogAT) (Hodges et al., 2018).

One additional model of identification worthy of consideration is Sternberg's (2015) augmented model of successful intelligence, also known as WICS (wisdom, intelligence, and creativity, synthesized), which identifies intelligence based on creative, analytical, practical, and wisdom-based skills to determine the potential for later success because, as Sternberg explains:

> In almost any life pursuit, people need to think (a) creatively to generate new and valuable ideas, (b) analytically to judge whether their ideas and the ideas of others are worthwhile; and (c) practically to implement their ideas and to convince others of the value of those ideas. People also need (d) wisdom to help to ensure that their skills are utilized to achieve a common good that balances their own (intrapersonal) interests with other people's (interpersonal) and institutional (extrapersonal) interests over the long term, not just the short term. (Sternberg, 2015, p. 77)

While domain general abilities like problem solving, analytic capacity, and creativity are accounted for in many models of identification, the domain specific talents necessary to address 21st century needs are not. Domain specific talent needs of today and for the future are vastly different from those in previous centuries, or even previous decades. Olszewski-Kubilius, Subotnik, & Worrell (2016) predict a growth in the need for talent in domains including "entrepreneurship, technology (robotics, artificial intelligence, nanotechnology), the environment (clean energy), and health care (genomics)" (p.142) to address societal needs. Over-reliance on existing ability assessments are likely to miss talents in new and emerging domains because it is difficult to identify talent in a new domain, and impossible when a domain does not exist yet.

Development

In a review of existing theories and models of giftedness and talent development, Subotnik, Olszewski-Kubilius & Worrell (2011) devel-

oped a mega-model of talent development which proposes that there are two sets of factors that enhance talent development – psychosocial, and external and chance. Included in the psychosocial factors are optimal motivation, opportunities taken, productive mindsets, developed psychological strength, and developed social skills. External and chance factors include opportunities, financial resources, and social and cultural capital (Subotnik et al., 2011).

Despite a multitude of theories about how talents develop (and the agreement amongst most scholars that gifts and talents extend beyond academic prowess) in practice, services for gifted students are often still focused on academics, with only limited focus on other domains. The majority of schools surveyed in the *National Association for Gifted Children State of the States in Gifted Education Report* (2015) indicate that programs and services are most often offered related to gifts in general academic areas, visual/performing arts, intellect, specific academic areas, creativity and leadership—though none of the constructs are clearly defined in the report. Further, the report indicates that the service delivery models rely most often on academic interventions such as self-contained classrooms, telescoped learning, cluster classrooms, subject acceleration, honors/advanced coursework, Advanced Placement (AP) programs, dual enrollment in college, and International Baccalaureate programs. Renzulli (2012) questions why, if we are concerned with developing gifts and talents that result in creative problems solvers, programs for gifted and talented students still focus on the acquisition of content specific knowledge.

Olszewski-Kubilius, Subotnik, & Worrell (2016) explore how the needs of 21st century society intersect with the components of talent development. The authors identify two things as necessary for talent development in the 21st century—exposure to a wide variety of domains, and development of psychosocial skills such as resiliency, positive attitudes, communication, and growth mindsets. Inarguably, for a talent in any domain to develop one must: (a) be exposed to the domain; (b) believe they are capable in the domain; (c) practice in the domain; and (d) not give up if faced with setbacks or challenges.

When identifying potential areas for study in gifted and talented education, Subotnik et al. (2011) pose three important questions: "What kind of programming would best cultivate talent and reveal interest and motivation in early and middle childhood? How can this be infused into pre-school and early elementary-school education?" and, "Can programs be crafted that develop skills and competencies but simultaneously also boost the psychological characteristics needed to sustain commitment and persistence in challenging learning environ-

ments?" (p. 38). Olszewski-Kubilius et al. (2016) adds two additional questions: "How will schools ensure that all students have equal access to the new basics, such as programming and technology courses, thereby opening pathways to talent development in those critical domains?" and "How will we identify talent for newly emerging transdisciplinary domains?" (p143). The answer to these questions may be to develop makerspace programs in PreK-12 schools.

To better understand what a makerspace is, the next section defines makerspace, explains the activities occurring in makerspaces, the components of makerspaces, and some potential outcomes as a result of participation in a makerspace.

What is a Makerspace?

In 2005 Dale Dougherty launched *Make: magazine*, and used the term "maker" to describe the individuals who partake in creating items (Dougherty & Conrad, 2016). Broadly defined, a makerspace—sometimes also referred to as a FabLab, hackerspace, or tinkerspace – is a shared space where people, tools, and problems are brought together, and individuals use the tools to solve problems (Dougherty, 2012; Dougherty & Conrad, 2016; Martinez & Stager, 2013). Making is the creation of new knowledge and products (physical or digital), using available tools and materials. Making involves solving problems—real or imagined—alone or in collaboration with others. Makerspace participants are sharing ideas, testing theories, making mistakes, and trying again. Making and makerspaces have ties to centuries of educational theory and practice, including the work of Dewey, Piaget, Vygostky, Montessori, and others. (For one review of the historical and theoretical roots of the maker movement, see Halverson and Sheridan, 2014). Makerspaces are often a place where learners can be exposed to new ideas, new tools, new people, and new talents.

The Variability of Makerspaces

There are several variations in the composition of makerspaces, which makes them difficult to define and make generalizations about. Makerspaces may be open access, where users have free reign to do as they wish with available tools and materials; curriculum based, where users participate in activities aligned to a curriculum; scripted, where users participate in activities designed by a program director or makerspace member, however not necessarily tied to a curriculum; or any combination of these arrangements (Burke, 2013; Chu et al., 2017; Gierdowski & Reis, 2015). In makerspaces participants may work indi-

vidually, collaborate in small groups, attend workshops, or help to host community events. Although often associated with science, technology, and engineering and math (STEM) learning and outcomes (Chu et al., 2015, 2017; Davis & Mason, 2016; Fields et al., 2018; Holbert, 2016b, 2016a; Kafai et al, 2014; Marshall & Harron, 2018; Papavasopoulus et al, 2017) making also involves, tinkering, crafting, woodworking, fiber arts (Clapp & Jimenez, 2016), as well as combinations of these domains and others. The objective of a maker activity may be to solve a problem, to help another maker, to create a product, or to figure out how a particular tool works.

Participants in makerspaces often create objects to solve problems or to explore concepts. Some examples of physical objects created include marble machines, wind tubes, and circuit boards (Bevan et al., 2015), wind turbines, pipes for home plumbing repair, welded bike chain sculptures (Sheridan et al., 2014), toys for neighborhood children (Holbert, 2016b, 2016a) and artifacts to help conduct science experiments (Chu et al., 2017). Activities run the gamut from designing transportation or food solutions, to working with digital tools and electronics, exploring design, fabrication, music, art, bike repair, woodworking, electronics, silk screening, or computer programing (Sheridan et al., 2014). Participants may be working with 3D printers to design prosthetic devices, creating scaled models to explain conic principles, or designing rocket noses to explore physics concepts (Mersand, 2018). The items created may also be more experientially focused such as community events and partnerships with other organizations like soup kitchens, churches, neighborhood groups, and nonprofit organizations - working to strengthen relationships and meet community needs by solving real world problems (Sheridan et al., 2014).

Makerspaces provide multiple entry points; innovative combinations of traditionally separate disciplines allow for novel approaches to problem solving and design of solutions. In a makerspace multiple activities occur in the same space, and components of different activities often cross-pollinate the work being created. For example, designing a flashing safety vest for bicycle riders combines sewing, computer programming, and electric circuitry; robots are created with a combination of computer programming, physical computing components, cardboard, and LEGOs (Blikstein et al., 2016); a working portable hydroelectric generator is created with plastic cups, plastic spoons, corks, magnets and copper wire (Mersand, 2017). Makerspaces can facilitate opportunities for people to work together in a shared space allowing ideas and skills to comingle, resulting in new ideas and directions that may not happen if working in isolation.

Makerspaces: Tools and Materials

It is not surprising that the availability of tools and materials will vary between spaces given the description of what is created in them. From costly equipment—such as 3D printers, laser cutters, and Computer Numerical Control (CNC) mills—to graveyards of old technology, toys, piles of cardboard, and shelves of scraps that can be repurposed into new things, the tools and materials in a makerspace can be virtually anything.

Items for exploring circuitry include circuit boards, wires, light bulbs, buzzers, generators, doorbells, batteries (Bevan et al., 2015), circuit blocks, paper clips, motors from old toys, speaker cables, voltmeters, soldering irons, oscilloscopes (Sheridan et al., 2014), battery-operated motors, LED lights, and soldering irons (Bowler & Champagne, 2016). Participants explore concepts like light refraction and shadows using littleBits, Arduinos, conductive ink, Snap4Arduino, craft materials, straws, cardboard, and paperclips (Bekker et al., 2015).

Non-digital fabrication tools and materials include sewing machines, thread, needles, pins, bolts of fabric and fabric scraps, foot pedal operated looms (Sheridan et al., 2014), as well as items such as glue guns (Bowler & Champagne, 2016), pre-drilled boards and bolts for building, tools for construction and woodworking, kilns, recycled materials, bits of paper, cellophane, welders, iron pouring tools (Sheridan et al., 2014), pipe cleaners, cardboard tubes, and tape (Bevan et al., 2015).

As noted previously, makers may have access to tools for digital fabrication such as 3D printers and laser cutters (Benjes-Small et al., 2017; Sheridan et al., 2014), as well as digital tools for drawing images, editing photos, remixing video clips, composing music, animating stories (Benjes-Small et al., 2017; Bowler & Champagne, 2016), and creating stop-motion animation (Sheridan et al., 2014). Users may have access to tools and materials to explore computer programming such as wooden blocks for object-oriented programing (Sheridan et al., 2014), computers (Barron, 2006; Benjes-Small et al., 2017), and robots and robotics materials including microcontrollers (Bowler & Champagne, 2016).

Such variability in materials can change the types and purposes of activities users participate in, as well as the learning outcomes.

Learning Outcomes from Participation in Making Activities

Learning outcomes are often broadly categorized into three domains: cognitive outcomes deal with knowledge and the development of understanding; psychomotor outcomes deal with specific physical skills; and affective or psychosocial outcomes deal with attitudes, beliefs, and

feelings (Anderson & Krathwohl, 2001). Due to the array of activities, materials, and objectives in a makerspace, there are a multitude of opportunities for growth in knowledge in and across multiple domains, as well as a multitude of ways to document evidence of learning.

Cognitive and psychomotor learning outcomes. Cognitive and psychomotor outcomes are those most often measured in educational contexts. Existing research has focused very little on cognitive outcomes from participation in makerspaces, however some research has measured cognitive outcomes as expressions of realization, offering explanation(s) for a strategy, tool or outcome, application of knowledge, and striving to understand a particular problem or concept (Bevan et al., 2015). Litts, Kafai, Lui, Walkder and Widman (2017) measured growth in understanding of how circuits work by the ability to sketch a functional circuit, as well as the ability to understand, debug and remix code.

Psychomotor skills in a makerspace may include music editing, bike repair, video creation and editing, silk-screening (Sheridan et al., 2014), as well as mastery of the use of a tool or set of tools (Wilson & Gobeil, 2018). Due to the variations in availability of tools and materials as well as objectives of the projects, participants in a makerspace may learn to solder, knit, draw, balance objects, measure, sculpt, or design. While cognitive and psychomotor outcomes are important, perhaps more important when considering 21st century needs are psychosocial outcomes from participation in such spaces.

Psychosocial learning outcomes. Research on makerspaces has identified diverse psychosocial learning outcomes from participating in maker style learning. Many of the outcomes identified are related, and some are used interchangeably. They are presented here using the terminology from the original authors. Psychosocial outcomes include the development of self-sustained learning practices (Barron, 2006), dispositional shifts in interest in a subject, confidence in a skill (Sheridan et al., 2014), and development of positive self-concept and self-image (Norris, 2014). Psychosocial outcomes also include engagement in terms of motivation and investment in projects and the makerspace (Bevan et al., 2015; Bull et al., 2017), collectively formed interests (Barton et al., 2016), and engagement in projects based on personal connections (Wilson & Gobeil, 2018). Users in a makerspace may demonstrate initiative and intentionality—including goal setting, seeking and responding to feedback, persisting to achieve goals in the problem space, taking intellectual risks and/or showing intellectual courage, as well as requesting or offering to help solve problems, in-

spiring new ideas or approaches, or connecting to others' work (Bevan et al., 2015). Users may also demonstrate growth in areas of empowerment in social competencies, confidence, self-regulation, and empathy (Bar-el et al., 2016), as well as the ability to embrace failure as a learning opportunity (Bowler & Champagne, 2016).

The previous two sections explored gifted and talented identification and provided a brief overview of makerspaces. The next section explains how the features and affordances of makerspaces may intersect with gifted and talented identification and development to uncover untapped talents.

The Intersection of Giftedness, Talent Development, and Makerspaces

Returning to questions posed in Subotnik et al. (2011) and Olszewski-Kubilius et al. (2016) this sections explores how making and makerspaces may be the answer to some of the identified queries:

> What kind of programming would best cultivate talent and reveal interest and motivation in early and middle childhood? How can this be infused into pre-school and early elementary-school education? (Subotnik et al., 2011, p. 38)

> Can programs be crafted that develop skills and competencies but simultaneously also boost the psychological characteristics needed to sustain commitment and persistence in challenging learning environments? (Subotnik et al., 2011, p. 38)

> How will schools ensure that all students have equal access to the new basics, such as programming and technology courses, thereby opening pathways to talent development in those critical domains? (Olszewski-Kubilius et al., 2016, p. 143).

> How will we identify talent for newly emerging transdisciplinary domains? (Olszewski-Kubilius et al., 2016, p. 143).

Cultivating Talent and Revealing Interests

Subotnik et al. (2011) identified four categories of gifted and talented individuals based on opportunity and motivation: high opportunity and high motivation, high opportunity and undetermined/low motivation, low opportunity and high motivation, and low opportunity and low/undetermined motivation. Olszewski-Kubilius et al., (2016) explain that "[e]arly exposure to a wide variety of domains is critical to ferret out interest and observe exceptional potential" (p. 141). Carefully designed and operated makerspaces can offer that exposure, thereby

revealing interests and potential for development. As explored in the previous sections, makerspaces offer entry points into a variety of domains, including those which are important in the 21st century such as robotics and computer programming. Makerspaces may be one way to address identification of individuals in the low opportunity and undetermined/low motivation category because they offer opportunities for students to work with new tools, new people, and new ideas. The opportunities allow for new interest formation, as well as for practice in areas where interest has been uncovered.

Emerging Transdisciplinary Domains

The cross-pollination of activities and ideas that often happens in a makerspace is what Olszewski-Kubilius et al. (2016) refer to as boundary crossing, or transdisciplinary domains. Due to the variety of activities that may be occurring at the same time in a makerspace, users often experiment with multiple domains to solve the problems before them. Many examples of transdisciplinary activities are found in research on makerspaces. For instance, sewable circuits combine sewing, circuitry, and computer programing as participants create circuits with conductive thread, LEDs, and programmable lilyPad Arduino boards (Litts et al., 2017). The Bots for Tots program (Holbert, 2016b) challenges participants to design a toy for a younger child—providing free reign of materials available including repurposed toy parts, laser cut acrylic, sensors, sewn fabrics, and electronic components. As the students work on their designs, they share ideas and offer advice to each other. A third example of a cross-disciplinary project is the design and creation of a solar powered heated and lighted sweatshirt. The participants creating the project work with mentors who teach them to sew, how to understand electricity usage, and simultaneously receive fashion advice from other makers (Barton et al., 2016). These types of cross overs, and the advice and skill sharing between participants and mentors may help to prepare students for emerging and transdisciplinary domains important to meet the needs of the 21st century.

Infusion and Equal Access

As previously noted, makerspaces offer users opportunities to explore domains such as computer programing, robotics, engineering, and other technology related domains (among others); they offer opportunities to engage in problem solving, creative thinking and inquiry. Makerspaces are currently being created in schools and school libraries in the United States and throughout the world. A preliminary analysis of

the prevalence of makerspaces in PreK-12 school libraries in New York State during the 2016-2017 school year indicates that 30% of schools in the sample (n = 541) already have a makerspace in the school building, with 83.4% of those makerspaces (136/163) located in school libraries (Mersand, 2019). Because school libraries serve all students, in all classrooms, at all grade levels, the creation of an open-to-all makerspace in the school library may be one way to cultivate interest in new domains for talent development and ensure equal access to the resources and programs offered. In fact, the creation of makerspaces in school libraries may also meet a need identified to transform competency into expertise—"[b]eing an 'organized knower'—knowing what you need to know, what is important to know, how to get it, store it, and retrieve it efficiently" (Olszewski-Kubilius et al., 2016, p. 146)—these skills are a substantial part of the standards school librarians are tasked to teach (American Association of School Librarians, 2018a, 2018b).

Development of Skills in Conjunction with Psychological Characteristics

Psychosocial skills identified as important to talent development include motivation, productive mindsets, psychological strength, social skills, resiliency, positive attitudes, communication and growth mindsets (Subotnik et al., 2011). As noted in the previous section, makerspaces can offer opportunities to develop skills such as problem solving, as well as domain specific skills. In conjunction with such skills, makerspaces encourage students to take risks, and embrace failure; students build a sense of community, and collaborate to solve problems through design (Sheridan et al., 2014). The collective nature of a makerspace allows for the development of collaboration skills, and keeps participants engaged when they hit roadblocks, helping them to persevere through problems and setbacks by providing encouragement and advice (Barton et al., 2016; Holbert, 2016b).

Research on making and makerspaces has found the potential for makerspace participation to positively affect the psychosocial skills identified as important for talent development:

- Motivation
    - motivation (Bevan et al., 2015; Bull et al., 2017; Chu et al., 2015; Hughes, Fridman, & Robb, 2018)
    - self-sustained learning practices (Barron, 2006)
    - self-directed learning (Flores, 2017; Wilson & Gobeil, 2018)
    - goal setting (Bevan et al., 2015)

- Motivation
  - motivation (Bevan et al., 2015; Bull et al., 2017; Chu et al., 2015; Hughes, Fridman, & Robb, 2018)
  - self-sustained learning practices (Barron, 2006)
  - self-directed learning (Flores, 2017; Wilson & Gobeil, 2018)
  - goal setting (Bevan et al., 2015)
- Opportunities taken
  - initiative (Bevan et al., 2015)
  - empathy (Bar-el et al., 2016)
  - interest (Chu et al., 2015; Hughes et al., 2018; Sheridan et al., 2014)
- Positive attitude
  - self-efficacy (Chu et al., 2015; Davis & Mason, 2016; Sheridan et al., 2014)
  - self-image (Norris, 2014)
  - attitudes toward learning (Bevan et al., 2015)
  - confidence (Bar-el et al., 2016; Flores, 2017; Hughes, et al., 2018; Sheridan et al., 2014)
- Resiliency/growth mindset
  - persistence (Bevan et al., 2015; Hughes, et al., 2018)
  - ability to embrace failure as a learning opportunity (Bowler & Champagne, 2016).
  - risk taking (Bevan et al., 2015; Flores, 2017)
- Communication/social skills
  - empowerment in social competencies (Bar-el et al., 2016)
  - leadership (Sheridan et al., 2013; Hughes, et al., 2018)
  - collectively formed interests (Barton et al., 2016)
  - collaborative skills (Hughes, et al., 2018)

Olszewski-Kubilius et al. (2016) note that online communities of practice such as out-of-school learning can be important in the development of talent domains because of the social support and the interest driven, self-initiated learning that occurs. Olszewski-Kubilius et al. indicate that educators should "leverage the enthusiasm and creativity of work being done through these communities of practice for increased commitment of achievement in school" (p.144).

Lave (1991) explains that communities of practice rely on apprenticeship models, where mastery in a trade is achieved through interaction with others. Lave (1991) describes peripheral participation as the means by which knowledge is acquired, not necessarily through direct teaching, but by observing, taking note, and becoming involved. Lave (1991) explains that situated learning and communities of practice allow for the formation of identity, not just the acquisition of knowledge and skills.

Makerspaces are often described as communities of practice, and participants may shift roles depending on the project and skills required. Makerspaces have been compared to gyms, with members, trainers, and spotters who guide one another as they work to build a repertoire of skills (Sheridan et al., 2014). Each member may at any point be a learner, a trainer, a teacher, or a workshop facilitator, depending on their expertise in any given area, but not necessarily their chronological age (Sheridan et al., 2013). Participation in such an environment may be key in the development of the psychosocial skills necessary for talent development, and to solve emerging societal problems.

Conclusions and Recommendations

As society's needs increase in complexity, how do we foster a citizenship able to imagine the solutions? As Cantor (2021) asserts "[t]alents and skills are ubiquitous. Education should be designed to reveal the talents and skills in each child" (p. 16). School based learning is frequently language based and taught out of context; students read from textbooks and listen to teachers lecture, rendering subjects like science and math irrelevant. Students are taught facts about a topic, but they aren't typically taught how the concepts relate to actual practice.

> Imagine a textbook that contained all of the facts and rules about basketball read by students who never played or watched the game. How well do you think they would understand this textbook? How motivated to understand it do you think they would be? (Gee, 2007, p. 22)

Martinez and Stager (2013) make a similar argument in *Invent to learn: Making, tinkering, and engineering in the classroom*. Students are not learning through hands on projects as they will need to learn in the field. Programs and services focused on students' academic abilities diminish the opportunity to identify and develop talents in other domains. Makerspaces may provide a new opportunity structure, a way for learning to become contextualized. Makerspaces, if designed with intention, may provide a context in which learning is necessary and tied to real-world problems.

Makerspaces can function as an enrichment opportunity or be incorporated within the traditional curriculum. Research supports that makerspaces benefit all students by developing what Olszewski-Kubilius et al. (2016) identify as the talents necessary to contribute in the 21st century. A school based makerspace can and should operate in a manner that allows all students to use them in a variety of ways: of their own free will, in connection to the curriculum, and in conjunction with clubs and activities. Makerspaces provide opportunities for

students to interact with tools, problems, experts, and peers on any number of skills in any number of domains. Students may learn how to use a screwdriver or soldering iron from a peer, they may learn to knit a row on a scarf from a community member, and they may come to realize a new interest through exposure to new tools, ideas, and ways of looking at the world. Makerspaces have the potential to afford everyone the opportunity to develop both domain-general and domain-specific talents. They may be a means by which learners can be exposed to new ideas, domains, and communities.

At the same time, they may be a way to help develop students' civic orientation. Living labs, community-based co-creation spaces similar in composition and ethos to makerspaces, have been identified as a potential intermediary of public innovation (Gascó, 2017). Living labs bring together citizens, governments, private industry, and community organizations to solve societal problems—relying on collaboration and recognition of each member's talents and skills. Makerspaces in schools may be designed in such a way that students are working with policy makers and other stakeholders to solve problems local to their schools and communities. They may be a way to develop the "wisdom to help to ensure that their skills are utilized to achieve a common good that balances their own (intrapersonal) interests with other people's (interpersonal) and institutional (extrapersonal) interests over the long term, not just the short term" (Sternberg, 2015, p. 77).

A Research Agenda

Makerspaces, if intentionally designed and implemented, can be an environment where students engage in activities alone or in groups, with peers or with adults, and offer opportunities to interact with materials and tools that are not always available in schools or homes. They can allow for transdisciplinary learning opportunities that break the typically siloed mold of education. They may be a way to develop communities of practice around shared goals and interests in schools and communities to develop solutions to 21st century problems.

Although research on making and makerspaces is a growing area, studies are needed to investigate:

- What opportunities, risks, and challenges are associated with the formation of school-based makerspaces to address 21st century societal problems?
- What barriers and enablers exist regarding the formation of communities of practice in school-based makerspaces?

- How and to what extent do school-based makerspaces foster identified 21st century talent needs?

- How and in what ways are psychosocial constructs operationalized, observed, and measured in school-based makerspaces?

The study of makerspaces may illuminate novel opportunities and strategies for identifying and nurturing the gifts and talents of students, as they provide opportunities for students to: (a) be exposed to new domains; (b) believe they are capable in the domains; (c) practice in the domains; and (d) not give up if faced with setbacks or challenges.

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Turning Public Schools Upside Down

Stranger Things as Allegory for the Birth of Neoliberal Education Reform in the United States[1]

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Introduction

The Netflix series *Stranger Things* opens with four young boys—Mike (Finn Wolfhard), Dustin (Gaten Matarazzo), Lucas (Caleb McLaughlin), and Will (Noah Schnapp)—sitting around a table playing the classic tabletop role-playing game *Dungeon & Dragons*. The show's musical score is performed almost entirely on a synthesizer, and the opening credits feature stylized words that move in and out of the screen, both reminiscent of films from the 1980's; indeed, from its opening moments, *Stranger Things* could not be more 80's in its setting or tone. Stranger Things is set in 1983 in a fictional small Indiana town. The story centers around the disappearance of a young boy named Will and the efforts of his family, friend and members of the community to find him. The show depicts a group of kids desperately looking for their friend, their quest is disrupted by their encounter with an odd young girl with strange powers and their battle against mysterious supernatural beings. The show has won many plaudits for so accurately encapsulating the period. Created by brothers Matt and Ross Duffer, as the series progresses much of the action takes place at the local schools which become sites of struggle for the young protagonists, both from their peers (through bullying) and from outside forces; the first season's denouement takes place inside a school. As schooling is so integral to the series, it fits that the show can be used as an allegory for the changes that swept the public schools beginning in the mid 1980's,

particularly those that gave rise to neoliberal reform efforts in the public schools.

The Duffer Brothers have granted numerous interviews since the show premiered; while they have explained at length that their own experiences growing up in an America suburb in the eighties have been the main inspiration in developing *Stranger Things,* they did not indicate why they chose to set the action in November 1983. However, 1983 is a pivotal year in the development of schooling in the United States (U.S.). With the election of Ronald Reagan and the publication of 1983's *A Nation at Risk* (ANAR), the public schools of the U.S. became swept up in a neoliberal wave that rose with the passage of America 2000 and Goals 2000 crested with the passage of 2001's No Child Left Behind Act, and spread with the 2009 formulation of the Common Core standards and subsequent passage of Race to the Top.

This article uses the first two seasons of *Stranger Things* to allegorically explore the reforms that swept the public schools of the 1980s. Allegories are intended to illuminate a conversation in some way; we argue that just as the dark forces within the Upside Down completely reformed the lives of the show's protagonists and the town in which it was set, so too did ANAR reform the nation's views of public schooling, creating a sense of fear regarding the institution of schooling. The article begins with contexts through which the allegory can be understood. It explores the notion of public pedagogy in the current "Golden Age" of television, and presents a brief history of major periods of educational reform in the U.S. It then details Reagan's anti-education agenda and the publication of ANAR. Once this background is presented, the article explores the crux of the allegory: defining neoliberalism, how major characters and other elements from the show can be seen as metaphors for educational reforms of the 1980s. It concludes with a discussion of how this has impacted the current state of schooling in the U.S.

Media as Allegory: Public Pedagogy in the New Golden Age of Television

When *Stranger Things* premiered in the U.S. in July 2016, Netflix was praised for channeling the eighties the same way the AMC drama *Mad Men* did for the sixties. These two shows are emblematic of a new era in television programming started approximately ten years ago in the United States and dubbed the new golden age of television. Scholars in television studies and popular culture argue that this new wave of television programming has also brought a new kind of shows that make viewers think; according to Johnson (2006):

> Some narratives force you to do work to make sense of them, while others just let you settle into the couch and zone out…Narratives that require that their viewers fill in crucial elements take that complexity to a more demanding level. To follow the narrative, you aren't just asked to remember. You're asked to analyze. This is the difference between intelligent shows and shows that force you to be intelligent. (pp. 63-64)

The success of the show has also been attributed to the unique ways in which the Duffer brothers paid tribute to major players in 80s popular culture such as Steven Spielberg, John Carpenter, and Stephen King to name a few. Therefore, in many instances, the action in the show is a clear reference to another iconic movie. For example, in several episodes the Duffer brothers pay tribute to Steven Spielberg's *E.T the Extraterrestrial* (Spielberg, 1982) imitating the famous flying bicycle scene.This practice is known as intertextuality. French philosopher and semiotician Julia Kristeva coined the word intertextuality in 1969 in *Word, Dialogue and Novel* (reprinted in Moi, 1986). Allen (2005) gave a useful working definition of *intertextuality* "the fundamental concept of intertextuality is that no text, as it might like to appear so, is original and unique-in-itself; rather it is a tissue of inevitable, and to an extent unwitting, references to and quotation from other texts" (Allen, para.1).

Tillman and Trier (2007) emphasized the role the media play in our cultural discourse and argued for the use of popular culture in education:

> The media play a major role in the construction of popular cultural "texts," such as films and television programs. These media forms are conceptualized as "public pedagogies"-i.e., as texts that have great potential to teach the public about a wide range of educational issues" (p. 121).

Following Tillman and Trier's lead Carpenter and Sourdot (2010) explore the learning opportunities film and television programming offer viewers:

> We see public pedagogy as being concerned with, and taking place within the discursive spaces of public issues, situations, and events that surround television and film. That is, viewers of film and television public pedagogy can encounter meaningful learning opportunities through critical engagement within this form of visual culture. This form of public pedagogy requires the active participation of viewers to make meaning of the complex nature of the narratives they experience on multiple levels. (p. 446)

In sum, Tillman and Trier (2007), Carpenter and Sourdot (2010), and Johnson (2006) tell us that studying popular culture is critical in help-

ing viewers and scholars alike to make sense of the world we live in. Indeed, popular culture provides informal education that is as prevalent as any more formal, systematic form of education.

A Brief Periodization of Educational Reform[2]

Throughout its history, the public schools as an institution of formal education have gone through several significant periods of reform. From the earliest days of the nation, public schooling was of paramount interest to the nation's political leaders; indeed, early federal legislation set aside lands to be used in support of the public schools. However, in the earliest years, schooling was left to the states and municipalities to determine what was best for the highly localized populations. Thomas Jefferson proposed a blueprint for the public schools in his "Bill for the More Common Diffusion of Education"—a state divided into districts, each of which would provide both elementary and secondary schools freely available to top performing students based on their performance on high-stakes accountability measures. While Jefferson's home state of Virginia never adopted his proposal, many other states quickly adopted variations of Jefferson's model.

If the blueprint of the public school system as we know it today was provided in the Early National Period by thinkers such as Jefferson, it was Massachusetts Secretary of Education Horace Mann's vision of common schools provided the foundation. During the Common School Era, roughly from the 1830s to the 1860s, schooling moved much closer to the public school system as we know it today. Buildings were standardized, the curriculum was formalized, and pedagogy was detailed. The normal school movement began the idea of a formal teacher training process, which eventually gave rise to colleges of education. The pedagogy was softened, appearing much more similar to what is still used in elementary schools across the U.S. today rather than the "spare the rod, spoil the child" mentality of previous generations.

By the mid-1800's, though, there was concern about the state of the nation due to the rising tide of immigration. Accordingly, the nation turned to its public schools to help "Americanize" these citizens. Due directly to the rhetoric of reformers such as Mann, public schools developed a messianic purpose—the schools became seen as the saviors of all social ills. The U.S. wanted to create a national unity, so the schools were put squarely in charge of doing so. Leaders—so the civil religion in the classroom came about via the public school creed. As there was an increasingly diverse group of people flooding into the U.S, the schools became the primary instrument of social control. U.S.

society wanted to reduce strife between these peoples, many of whom were mixingfor the first time, so the schools were called upon to create one culture. Of course, this one culture was based almost exclusively in pan-protestant notions, perpetuating the religious purpose of schooling. This messianic legacy would increase exponentially with the passage of time—particularly when the group of progressive reformers swept into political, social, and educational power.

The Progressive Era (1890's through 1920's) of schooling brought forth a wide variety of reforms. There was a tremendous amount of legacies of the era on all levels of schooling. Schools took to expanding their curricula to meet all students' needs; the schools were perceived as the primary means of educating children in all facets of their lives. Schools engaged in "new" techniques in education such as curriculum tracking, ability grouping, vocational schools, and mainstreaming students with special needs. Schools expanded their missions greatly by adding extracurricular activities (sports, social clubs) as another level of effort to develop the "whole child" and noncurricular activities such as vaccinations, supporting the war effort, school breakfasts, hygiene, and medical screenings. Schools increased in complexity—there emerged separate elementary, middle, secondary schools at the public school level, while postsecondary education formed junior/community colleges in addition to the established university system. Overall, there was less sameness in the treatment of students; schools offered a broader curriculum, including vocational education, but was still often limited to students who were white, middle to upper class, abled, and often male. Finally, under the guise of efficiency, states implemented teacher certification and state accreditation programs.

The Era of the Five E's (1950's through the 1970's) marked kaleidoscopic educational reform. The first E was excellence, marked by the nation's desire to produce a generation of rocket scientists in the aftermath of the launch of Sputnik. To this end, the schools experimented with "new math" and "new science" curricula. The second E was equality, sparked by the 1954 *Brown vs. Board of Education* decision which desegregated the schools. In its aftermath, the public schools worked towards desegregation, integration, bilingual education, Title IX/sex equity, and the mainstreaming of students with special needs, lofty goals which are arguably still unmet. Indeed, even in the post-*Brown* era public schools have not always worked towards desegregation, such as the seventeen Jim Crow states and also many in the north that still fight equality of educational opportunity. The third E is expansion, spawned by the baby boomer generation entering the schools *en masse*. Economically, schools became recognized as growth indus-

tries with larger budgets, buildings, and administrations, as well as school supply and textbook companies becoming profitable. The fourth E is expertise; as schools increased in size and scope, so too did they increase their administration. Locally, districts moved to fragmented centralization and site-based management. The fifth E is emancipation, launched by the increase in Supreme Court decisions and creation of the U.S. Secretary of Education as a stand-alone cabinet position. The general public wished to emancipate the schools from provincial, local control; as such, federal involvement in schools from both the legislative and judicial branches increased tremendously, paving the way for the ensuing neoliberal period.

After years of trying to get politics out of education, schooling became extremely political and "ground zero" for the emerging culture wars. Due to declining requirements and standards there was a back to basics movement; when schools were perceived as being too elitist, there was course proliferation and a migration to the general track. Most remarkably, the public began to have questions about the validity of public schools as an entity—research set out to prove that schooling makes little difference in achievement of life chances, if not oppressing children. This led to much criticism of schools along almost all lines: among other critiques, the schools were seen as being sorting machines, and that there was too much choice in curriculum. The general public was ready for a significant change, and the election rhetoric of Ronald Reagan encapsulated that desire.

1983 As Pivotal Year

On November 13, 1979 Ronald Reagan announced his intent to seek the Republican nomination for President of the United States. Reagan only briefly mentioned education at the end of his speech. However, on the campaign trail and his interactions with members of the news media, he repeatedly expressed his disdain for the federal government. Once nominated, Reagan's platform was very specific on education:

> The Republican Party supports deregulation by the federal government of public education, and encourages the elimination of the federal Department of Education… Federal education policy must be based on the primacy of parental rights and responsibility. Toward that end, we reaffirm our support for a system of educational assistance based on tax credits that will in part compensate parents for their financial sacrifices in paying tuition at the elementary, secondary, and post-secondary level. (Republican Party Platform, para. 108)

Once in office Reagan charged Secretary of Education Terrell H. Bell

to create the National Commission on Excellence in Education and directed it to produce a report on the quality of education within 18 months. Chaired by David P. Gardner, then president of the University of Utah, *A Nation at Risk* was made public on April 26, 1983; it sent shockwaves throughout schools across the land because of its bold tone and sweeping call for reforms of the American education system. As a former teacher and Commissioner of Higher Education in Utah, Bell understood that Education reform would not take place in the United States without a significant event that would impact the American consciousness. In his memoir, Bell explained that he was looking for what he called a "Sputnik-like" event to focus people's attention and energies on education.

On April 26, 1983 the National Commission on Excellence in Education delivered its final report to President Reagan. Its full tile was *A Nation at Risk: The Imperative for Educational Reform*, however it was subtitled *An Open Letter to the American People*. Bell achieved his goal of creating a significant event. While there had been some texts noting the challenges and problems facing the public schools prior to this report, they were mainly academic in tone and did not capture the nation's attention. As soon as the report was released, several major news outlets published stories and analyses about the report.[3] The extensive news coverage for a report about education was unprecedented. The amount of attention the report received is in part due to the alarming tone of the report and its equally troubling findings. It is worth noting that *A Nation at Risk* was the first significant document published by the Department of Education, giving the agency instant legitimacy. That is why the alarmist, fear-inducing tone of the report sent shockwaves throughout the nation:

> Our Nation is at risk…The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people…If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war…We have, in effect, been committing an act of unthinking, unilateral educational disarmament. (p. 9)

In his analysis of *A Nation at Risk*, Holmes (2012) identified several major frames that have driven education reform in our country for decades. The first frame used in *A Nation at Risk* is mediocrity in education. This argument was clearly articulated by the Commission who highlighted the achievement gap between White, Black, and Hispanic students and the need to raise educational standards to allow

America's youth to compete on the International stage. Another frame, prominent in the report, is the dire consequence of a lack of action on the issues facing the education field in the U.S. The report makes an explicit connection between America's educational system mediocrity and the country's national security.

According to *A Nation at Risk*, some of the most notable indicators of the risk facing our nation were the fact that twenty-three million American adults were functionally illiterate (inability to achieve everyday reading, writing, and comprehension) and the lack of ability of seventeen-year-old Americans to achieve specific academic achievements in reading comprehension and science. Another troubling spot for the Commission was the data provided by the military, specifically the department of the Navy, indicating that one-quarter of its recent recruits were not able to read at the ninth-grade level, the minimum needed to understand written safety instructions. The report mentioned that both business and military leaders complained of having to spend millions of dollars every year to provide remedial education to bring new recruits up to speed.

The rhetoric and the reality did not match up: a reading of ANAR reveals that the recommendations made therein were actually reasonable and achievable compared to the alarmist rhetoric it spawned. ANAR included several specific recommendations under five areas: content (increasing high school graduation standards), standards and expectations (raising expectations in PreK-16 including increasing university admission standards), time (increased school day and lengthened school year), teaching (raising standards for teacher preparation and increasing rewards for teachers to attract stronger candidates to the field), and leadership and fiscal support (holding educators and elected officials equally responsible). These were not a blame game; these were not darkness and fear. However, the media-generated headlines and political talking points focused on the alarmist rhetoric of the beginning of ANAR, not the balanced approach of the end.

All in all, in 1983 the report shocked America and its people; however, the reality of the nation's public schools did not conform to the rhetoric. It appears that in *Stranger Things*' 1983-set Hawkins, Indiana, schools and teachers did not seem to live and work in the Upside Down of education as described in *A Nation at Risk*. The fictional middle school and high school of Hawkins so integrally portrayed in the show reflected what many Americans in reality noticed in their local schools: dedicated teachers, a clean and organized environment, and preteens and teenagers doing what kids have done for generations while walking in the halls. Indeed, scholars produced much work dis-

proving much of the alarmist rhetoric and trying to tone down the national conversation around schooling. Most notable was David Berliner and Bruce Biddle's 1995 *The Manufactured Crisis*, however, criticism arose as well from scholars ranging from John Goodlad to Linda Darling Hammond and Alfie Kohn. However great the academic efforts, *A Nation at Risk* caused many Americans to question the very validity of their public schools and after years of reforms, were ready to look to the Reagan-led federal government to help provide solutions to "fix" the "broken" school system, thus opening the door for neoliberal reforms in education.

Neoliberalism in Education

In the allegory of *Stranger Things* as educational reform, the Upside Down created by Hawkins Lab represents neoliberal ideology in education. Broadly speaking, neoliberalism refers to a complex set of ideologies, values, and practices that impact the economic, cultural, and political spheres. In general, it is a free-market ideology that favors private enterprise, consumer choice, and entrepreneurial initiative. Government intervention is seen as deleterious to these outcomes. Core assumptions that undergird neoliberal beliefs include the notion that all individuals are self-interested and rational; that given complete information, individuals will make the choice that is in their best interest; and that individuals must be given a variety of options in all transactions (social, economic, and political). Main points shared by many neoliberal thinkers include the belief in absolute free market rule, a total freedom of movement for capital, goods and services; that social services such as education and health care should be eliminated; that deregulation is key, as government regulations inhibit progress and profit; and that privatization is the key to increasing efficiency, including turning over state-owned enterprises. There is a fundamental tension between neoliberals and progressive liberals because neoliberals believe in the elimination of concepts such as public good and community as core values, to be replaced by individual responsibility, individual liberty, and entrepreneurship.

The Reagan years marked an ideological adoption of neoliberalism as mainstream thought. While not using the term "neoliberal" to describe Reagan's rhetoric and the media culture around it, Douglas Kellner's description mirrors the definition:

> Reagan, in turn, redefined "common sense"…: government must be limited and taxes reduced; businesses must be strengthened to create jobs and increase national wealth; government and "red tape" (and

> thus regulatory policies) must be eliminated; individual entrepreneurialism is the best road to success and producing a strong society, therefore government should do everything possible to encourage such businesses enterprise; life is tough and only the fittest survive and prosper. (1995, p. 59)

Of course, as neoliberal ideology has come to dominate much of the U.S.' economic and political structures, two unintended and wholly unfortunate consequences have emerged: that a handful of private interests control the majority of social and political life in order to ensure their personal profits; and that a small number of wealthy investors have come to define sociopolitical and economic policy for the nation as a whole. While the 20th Century marked a time in the U.S. when the government believed it was its purpose to protect its citizens' rights and assist them meeting their fundamental needs, in the 21st that belief has been limited to the rights and needs of a select few. Institutions established during 20th century to ensure the common good—public utilities, health and welfare agencies, cultural institutions, courts and prisons, police and firefighters, the military, and schools and universities—are now being increasingly eliminated and privatized.

Public schooling has not been lost in these conversations; indeed, as public education is a multi-billion dollar per year endeavor, corporate America and its political lackeys have been drooling at the opportunity to encroach into what was hitherto a sacrosanct world.[4] Further, neoliberal proponents rightfully recognize that the public schools and universities mark one of the last lines of resistance to their takeover of the nation—and as such, the public schools and universities have come under increasingly virulent and frequent attacks since 1983.

Within the existing public schools, neoliberal reforms have taken on many forms, often with bipartisan political support. These include increased corporate presence (fast food restaurants in cafeterias, major athletic brands sponsoring teams) in the name of reducing the financial footprint of the schools; decreased tax support (particularly for public universities) in the name of economic efficiency; increasing a standardized curriculum (Race to the Top and Common Core) in the name of increasing academic performance of students; and increasing accountability for teachers (state mandated testing and public report cards) in the name of improving performance on international comparisons. The report was deeply rooted in fear. As described by David Hursh:

> In the same way that the Bush Administration and other neoliberals and neoconservatives have used the fear of terrorism to promote a war on Iraq and to restrict civil liberties, they use the fear of losing jobs to economically competitive countries to promote high-stakes testing, ac-

> countability, markets and privatization in education. In 1983, during the depths of an economic recession…the Reagan administration…released A Nation at Risk explicitly blaming the recession and nations's economic problems on schools and calling for improved educational outcomes through increased efficiency." (2008, p. 23)

While the notion of creating an environment of fear around the nation's public schools was not unique, *A Nation at Risk* moved the conversation to the foreground of national conversation.

This media friendliness was absolutely intentional. Zane C. Wubbena explains that ANAR "gained widespread popularity throughout the United States through the mainstream news media." A group of journalists were convened to revise the report which "helped to translate a bulky and technical report about public education into something that was news media friendly…In brief, while the U.S. Department of Education provided the sourcing, the news media helped to concretize the perception of a nation wide crisis based on the failure of public education" (2016, pp. xix -xx). Further writing about ANAR, Beta Carela argues:

> With this indictment of education and the implication that our students are the nation's enemies, a wave of education reforms has been put into effect, calling for state and government interventions through reform policies and financial support that continue to shape our education landscape…The embedding of these mythos into our policies, teaching practices, and subconscious has resulted in the adoption and internalization of a free market construct of education that leads to… a hegemonic, neoliberal education agenda. (2019, pp. 75-76)

The notion that ANAR was the catalyst for neoliberal reforms has become widespread. For example, in an *Edutopia* article Tamim Andsary described the collective reforms as "a single set of take-'em or leave-em initiatives" and "a political movement that grew out of one seed planted in 1983" (2007, n.p.). An Association of Supervision and Curriculum Design "Policy Points" referred to ANAR as "the catalyst for standards-based, testing-focused education reform at the federal, state, and local levels for three decades" (2013, n.p.). In an article for the *American Educational Research Journal*, David Hursh notes that "Neoliberal ideas, although rarely explicitly stated, form the basis for most of the educational reform proposals since *A Nation at Risk*" (2007, p. 498) and that ANAR "initiated the reforms that were to follow: first standards, then standardized testing, and eventually high-stakes standardized testing and accountability combined with efforts…especially under No Child Left Behind (NCLB), to convert public education into a partially or fully privatized market system" (2008, pp. 23-24). Or, as described by Wubbena:

> Thereafter, the policy solution proposals for addressing the public education crisis coalesced to form the foundation of the current neoliberal education reform system. This system combines both government—the standards-based reform movement (i.e. curriculums, standards and high-stakes testing)—and business-market-based reform movement (i.e. school choice, including: charter schools, school vouchers, and tax credits/deductions). (2016, p. xx)

There is a direct line of neoliberal reforms from the release of *A Nation at Risk* to the passage of No Child Left Behind and the formulation of the Common Core State Standards. Even programs such as Teach for America can trace their ideological roots back to ANAR (Gautreaux, 2015, pp. 2-3). Indeed, the while many looked on in anger with the appointment of Betsy DeVos as arguably the most neoliberal secretary of education, many of her predecessors in office had similar bent. Arne Duncan, nominated by President Barack Obama and served 6 of Obama's 8 years, argued for the elimination of colleges of education, pushed for the adoption of Common Core, and implemented Race to the Top, which spread federal dollars to public, charter, and private schools in the name of increased competition.

Exploring the Allegory

What follows is an explanation of the allegory. In the interest of those who have not watched the series as of yet, the authors are intentionally remaining vague on specific events from the show, unless necessary; we seek to avoid spoilers as much as possible, but a few are included in the following.

Hawkins National Laboratory: Darkness Spreading

Just as *A Nation at Risk* was the impetus for neoliberal impact in the public school, so too in *Stranger Things* was Hawkins National Laboratory the origin and focal point of much of the show's conflict—the origins of the Upside Down (an alternate dimension existing in parallel and representing of a post-apocalyptic human world). In Season One, the Lab (a facility connected to the U.S. Department of Energy which came to existence to pursue scientific research in the post-World War II/Cold War era) was headed up by the character Martin Brenner (Matthew Modine) who unintentionally released the Upside Down; similarly, David Gardner, the chair who directed *A Nation at Risk* unintentionally created neoliberalism in education in its wake in the interest of national security.

Season Two's Lab director of operations, the character Sam Owens

(Paul Reiser), resembled Ronald Reagan: both are affable, charismatic characters who really didn't have the best interest of the public at heart but instead were more interested in protecting their own legacy. Indeed, just as the Hawkins Lab was finally taken down in public fashion by the end of Season Two, so too must we remember that the Reagan administration had a historically high number of its members actually imprisoned for a variety of offenses.[5]

The Children: Lost in the Neoliberal Tide

Calling themselves "The Party" after their favorite game, the four boys at the core of the story stand for the youth of the nation who are buffered along by these changing trends outside of their control. Jonathan Byers (Charlie Heaton) is the older brother of Will Byers, the most sensitive of the youth almost gets destroyed by the new system. He remains linked to the upside down throughout both of the first two seasons, and twice almost becomes subsumed by the Upside Down. Similarly, many youths lose themselves and their love of learning in the neoliberal educational landscape. They become subsumed by the push for better test scores and are fully indoctrinated into the false neoliberal doctrines of "learn more, earn more" and other manifestations of the meritocracy myth.

The other boys—Dustin, Mike, and Lucas—band together in their resistance of the mainstream. They find creative outlets that allow them to maintain their true selves—the audio-visual club, playing Dungeons and Dragons or video games, dressing up as Ghostbusters for Halloween, and reinforcing an abandoned bus to defeat a Demogorgon. So too do some schools, and some children, find ways of perpetuating creativity in spite of the neoliberal push towards literacy and numeracy at the expense of all other things. Often these take the shape of extracurriculars, particularly when it comes to the arts, but they still exist in our schools in spite of the reformer's work.

Other children are impacted as well. Barb Holland (Shannon Purser) represents all schoolchildren who are swallowed by the movement, cast out and almost forgotten. One of the first to become a victim of the Upside Down in Hawkins, the work of Barb's friends fighting to preserve her memory drives much of the plot forward throughout both of the first two seasons.

In contrast Steve Harrington (Joe Keery) is a child of wealth and influence who therefore has means to resist the worst of the action, as children of middle to upper classes likewise have the tools to resist neoliberal education reforms. It is interesting to note that Steve chooses

to transcend his somewhat elitist background in order to help the boys of the party throughout the series. Steve uses elements of his privilege to support those who are marginalized, and often pays physically, psychologically, and emotionally for his support. Similarly, those who work to assist the marginalized against neoliberal oppressions often face retribution of many forms by mainstream society.

Season Two introduces a new antagonist to Steve, one Billy Hargrove (Dacre Montgomery). Clearly depicted as troubled and violent, Billy represents the worst of what can happen from an abusive household; he is so focused on his own survival, his own needs, that he ignores the evidence of the Upside Down throughout the season. Billy has needs that are not being met; so too do millions of students have needs that neoliberal educational programs leave unmet in the interest of improving test scores. Just as Billy becomes self-serving to the point of narcissism or sociopathy, so too have many of the Millennial generation adopted these character traits. Yes, there is a direct line between the neglectful selfishness of neoliberalism and a generation's selfie obsession.

Hopper: Public Schools Standing Strong

The town's local chief of police, Sheriff Hopper (David Harbour), is a man over his head trying to protect his town from the strange happenings taking place. It is evident that he is not without trauma in his background, but that he works to overcome this on a daily basis. Initially, he resists believing in the darker, more fearful elements coming into play; however, he eventually is confronted with facts he can no longer ignore.

He, like the public schools of the 1980s, is the public face of the drama; he is the one many turn to with hope and blame. He, like the schools, is trying to maintain order in light of the new reality that flips his world, and he winds up ultimately hurting and damaged by the end. At times he becomes subsumed by the new trend, but finds a way to fight his way out.

Eleven: The Charter School Movement

The most powerful of the children protagonists, the character named Eleven (Millie Bobby Brown) was a product of the Hawkins Lab who goes on to lead resistance to it throughout both seasons. She wields enormous psychic powers; however, her use of them always inflicts some personal harm (ranging from nosebleeds to collapse). She is tracked by her creators as she was considered too dangerous for the

outside world. When the children first realize her powers, almost all are terrified of Eleven and realize that their world view—and their place in the community—has been forever altered. Her actions are explicitly to benefit her friends; however, they also often have unforeseen repercussions. Arguably, Eleven can represent the charter school movement - a movement born out of the greater neoliberal impulses of the period that were beloved by some, hated and considered dangerous by others, who has the best intentions but causes chaos. Charter schools are public schools; however, just as Elevens' use of powers comes at a personal cost, so too does the great expansion of charter schools cost the public schools in terms of enrollment and the ensuing financial support.

Eventually, Hopper takes in Eleven, adopting her as his own daughter but refusing to allow her to use her powers for her own safety. Similarly, the public schools have started coming to terms with the charter schools but not really allowing them to be used to their full potential. This comes as a result of fear: in Hopper's case, it is fear that Eleven will be found by the government and taken away. In the public schools' case, it is fear that they will be rendered obsolete by the charters, or that their existence is threatened by loss of funding and other governmental support.

The Parents: Resistance and Absence

Sherriff Hopper is not the only adult portrayed on the show; the mother of two of the boys central to the plot, Joyce Byers (Winona Ryder), features heavily in the series. She is initially presented as a flawed character. However, as the tragic events of Season 1 unfold, she is the only one to keep faith in her son. She successfully finds ways to overcome obstacles, maintain communication, and ensures as happy an outcome as could be considering the events that transpired, even though her actions are perceived as erratic by the general public. During Season 2, while she has a distrust and dislike of Hawkins Lab, she also has to work with it.

In many senses, Joyce is similar to teacher's unions. Like Joyce, they find themselves often the only voice in support of her son (the nation's children). Like Joyce working with Hawkins Lab, they have to overcome their dislike of many neoliberal reforms in order to support the nation's teachers. The actions they take, and the public stances they hold, are often met with skepticism from the general public; however, they have historically served an essential role in the ongoing well-being of the nation's schools.

Beyond Hopper and Joyce, viewers do see occasional moments involving the other parents. Unfortunately, these parents are portrayed

as ranging from absent, to uncaring, to ineffectual, to abusive. Similarly, the general public went along with the anti-public school narrative of the time; they bought into the false narrative spun by *A Nation at Risk* and supported it through laws such as No Child Left Behind and support of policies such as Race to the Top. Just as the parents in *Stranger Things* for the most part spend their time wholly ignorant of the Upside-Down in spite of its increasing presence in their town, so too do most citizens of the nation remain willfully ignorant of the true nature of schooling and the damage being done in the name of reform.

Mr. Clarke: Gardner's Multiple Intelligences

At Hawkins Middle School, one teacher stands out: Mr. Clarke (Randy Havens) is depicted as a smart, supportive and dedicated educator, who serves as the advisor to the Audio Video club. Throughout the first two seasons, Mr. Clarke appears as the only fully developed adult character. Other educators and paraprofessionals appear briefly, most of the parents hold cameo roles, but the only constant meaningful educational presence in the children's lives is Mr. Clarke.

There are several examples of this: Mike, Lucas, and Dustin turn to Mr. Clarke to ask about his knowledge of other dimensions.[6] He entertains questions from his students as he delivers a mini-lesson about a flea and an acrobat on a wire to describe the theoretical existence of parallel universes using a paper plate to the delight of his captive audience. Mr. Clarke is also called upon in "Chapter 7: The Bathtub," when Dustin contacts him after hours to inquire about building a sensory deprivation tank which is used to allow Eleven to get to the other side and find Will. In season two, Mr. Clarke's continues to inspire his students in the classroom, using unconventional approaches to teach his students about the mysteries of the human brain.[7]

Again arguably, Mr. Clarke is a perfect representation of a movement started at the same time: applying Howard Gardner's book *Frames of Mind: The Theory of Multiple Intelligences* to our educational settings. Also published in 1983, at its heart, Gardner's work was applied by demanding educators stop asking students how smart are they and instead asking how are they smart? Mr. Clarke allows his students, particularly the protagonists, to develop their own skills and explore questions in their own unique ways. Just as Mr. Clarke is a sense of stability to the boys, so too did educator's explorations of applying Gardner's work provide students a sense of meaning and accomplishment in their Upside Down neoliberal school experiences.

Conclusion: Neoliberalism as the "Upside Down" of US Schools

From 2016 to 2020 the Secretary of Education (and 17th in line of succession to the President) was Betsy DeVos, arguably the ultimate neoliberal education officer. In a 2015 speech, DeVos made the following comments:

> We are the beneficiaries of start-ups, ventures, and innovation in every other area of life, but we don't have that in education because it's a closed system, a closed industry, a closed market. It's a monopoly, a dead end. And the best and brightest innovators and risk-takers steer way clear of it. As long as education remains a closed system, we will never see the education equivalents of Google, Facebook, Amazon, PayPal, Wikipedia, or Uber. We won't see any real innovation that benefits more than a handful of students… many Americans rightly admire entrepreneurial pluck. Shouldn't the intelligence and creativity of Silicon Valley's markets be allowed to cascade down over public education, washing the system clean of its encrusted bureaucracy? (Blakely para. 4)

However, as article author Jason Blakely points out, DeVos represents the latest in a "decades-long struggle between two models of freedom—one based on market choice and the other based on democratic participation" (para. 6). There are many reasons for caution when applying neoliberal principles to education: failure of a school is a significant public loss, it creates educational deserts, it most significantly negatively impacts the poor and creates a never-ending cycle of failure for low-performing communities. This leads to the growing inequalities between classes and the shrinking middle class in this nation.

Just as neoliberal experiments with education have a profound effect on society as a whole, so too in *Stranger Things* does Hawkins National Laboratory and the experiments conducted there had a profound effect on the town and its inhabitants. However, it is Hawkins middle and high schools that are at the heart of *Stranger Things*. In the first episode Hawkins Middle School is depicted as a regular middle school, where Dustin, Lucas, and Mike are subjected to bullying as they make their way to school. Dustin is especially targeted because of his medical condition (cleidocranial dysplasia, missing his adult teeth). Hawkins High School is the site of several significant events, such as when Steve approaches Nancy Wheeler (Natalia Dyer) near her locker to invite her to his party. Schools and schooling are depicted as a site of suffering (bullying), comfort (the assembly in Will's honor), resource (thanks to its dedicated educators), struggle (where good defeats evil), and hope (the school dance).

We know from the interviews they gave since the show premiered that the Duffer Brothers used their own upbringing in suburban North Carolina when writing *Stranger Things*. However, the school in *Stranger Things*, appears to be so far removed from the depictions of schools and education in America as described in *A Nation at Risk*. Could Secretary of Education Terrell Bell have been wrong? What about the report produced by the Commission on Excellence in Education? Was it accurate? Is our nation still at risk? Was it ever at risk in the first place? Scholars and education observers are still divided on the issue. However, current neoliberal rhetoric around the perceived failings of public schools and insistence on various forms of privatization as being the only solution ignore the reality that the public schools can be, and are well worth, preserving in the national interest. Indeed many of the recommendations found in ANAR, never before implemented, still warrant discussion today. Like the show, the 1980s are back.

Through *Stranger Things* the Duffer Brothers allowed its audience to dive back into the 1980s, they shared with the viewer their take on Hawkins, Indiana, its people, schools, institutions, welcomed and uninvited guests in 1983. They also gave us an opportunity to reexamine the Upside-Down of education reform through their work. Just as the Party ultimately overcame the Upside-Down, can our current public schools overcome the neoliberal attacks and begin improving themselves once again? Stranger things have happened…

Notes

[1] This article builds and extends upon the following: Ludovic Sourdot, "The Upside-Down of Education Reform during the Reagan Era: A Re-Examination of Education Policies through Stranger Things," In K. J. Wetmore (Ed.). *Uncovering Stranger Things: Essays on Eighties Nostalgia, Cynicism, and Innocence in the Series*, pp. 205-214 (McFarland, 2018).

[2] For a more nuanced examination of these periods, see Edward Janak, *A Brief History of Schooling in the United States: From the Colonial Era to the Present* (Palgrave Pivot, 2019).

[3] For more information on this see Alyson Leah Lavigne & Thomas L. Good, *Teacher and Student Evaluation: Moving Beyond the Failure of School Reform* (New York: Routledge, 2013).

[4] For more on this see Joel Bakan, "Chapter 5: Corporations Unlimited," *The Corporation: The Pathological Pursuit of Profit and Power* (New York: Free Press, 2005), 111-138.

[5] After 8 years in office, there were 138 Reagan officials convicted, indicted, or the subject of official misconduct or criminal violations. See "List of Reagan Administration Convictions", Dailykos.com, https://www.dailykos.com/stories/2005/10/17/157477/- (retrieved January 3, 2021).

[6] *Stranger Things*, "Chapter 5: The Flea and the Acrobat."

[7] Mr. Clarke tells the story of Phineas Gage, a railroad construction foreman who suffered a traumatic brain injury and whose case was critical in helping the medical community in beginning to understand brain functions. *Stranger Things* Season 2, Episode 3.

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