Ladders and Escalators: Examining Advancement Obstacles for Women in Instructional Design

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Careful analysis of survey data from Bond and Dirkin (2018) indicate the possible presence of a phenomenon known as the glass escalator, first put forth by Williams (1992; 2013), in instructional design. The glass escalator effect surfaced in female-majority professions, indicating that advantages are experienced by males due in part to their tokenism and social standing. The degree to which these factors are present varies from study to study and is impacted by the continuing evolution within the professions selected for investigation. The findings in this study note more significant experiences in leadership and more frequent involvement in functions extending beyond a traditional instructional design scope among male instructional designers, despite their minority status in the field. Though some factors that could account for the disparity are present, in other cases, conditions are contradictory or inconclusive. This analysis presents an area of research thus far absent relative to instructional design but a more common investigation into other similarly female-dominated fields. As the importance of instructional design increases, the need to more fully understand the field and areas affecting its practice likewise increase in importance.

Introduction

Instructional design is recognized simply as “the systematic process of translating principles of learning and instruction into plans for instructional materials and activities'' (Smith & Ragan, 2005, p.2). The Cambridge Business English Dictionary (n.d.) defined instructional design as “the design of systems, computer programs, etc. to help people learn more effectively.” Particularly in a higher education environment, they have served a foundational role in the shift away from brick and mortar institutions to blended and online delivery. Despite these relatively simple definitions, practitioners – the instructional designers – are often called upon to serve in additional capacities, from media designers to faculty developers, faculty themselves, and very often as project managers and team leads (Sharif & Cho, 2015). In fact, considerable literature from the field of instructional design indicates that practitioners should be prepared to serve as leaders in their organizations (Ashbaugh, 2013; Bean, 2014), perhaps even at the executive level in specific settings, such as community colleges (Boyle, 2011). In addition, pertinent studies also commonly find that instructional designers are called upon to function in a variety of other ways, in and beyond the scope of their traditional role (Bond & Dirkin 2018; Gibby et al., 2002; Intentional Futures, 2016; Sharif & Cho, 2015). So prevalent is the diversification of the instructional designer’s role, it is often only a small minority of professionals who are actually investing a majority portion of their time in actual instructional design work (Bond & Dirkin 2018; Gibby et al., 2002; Sharif & Cho, 2015). This leads to instructional designers being known for working in a “meta” field, making it incredibly cumbersome to define and place their work in a particular box (Bodily et al., 2019; Wingfield, 2009). These themes of role diversification and leadership responsibilities indicate potential opportunities within instructional design for career growth, variety, and advancement.

The demand and diversification of roles for instructional designers within higher education institutions have steadily increased, with universities, such as Utah State University (USU) completely rebranding their Instructional Technology Department to include the learning sciences, “a change so dramatic that it warranted an article explaining the rationale” (West et al., 2017, p. 870). USU is not the only university to undergo such a dramatic change to their instructional technology department, creating new departments ultimately to provide space for instructional designers to work (West et al., 2017). The field at large is projected to grow at a rate of seven percent well into the next decade (U.S. Bureau of Labor and Statistics, 2019). Presumably, with these notions in mind, Bond and Dirkin (2018) conducted an in-depth investigation of the current state

of instructional design practice. The research included inquiry related to leadership functions and role diversification occurring among instructional designers.

In January of 2018, Bond and Dirkin distributed a survey (see Appendix) soliciting responses from instructional designers. Recipients of the invitation to participate included a state-by-state reference of individuals serving in teaching and learning/e-learning/instructional design leadership roles, as well as subscribers to the email lists of the Michigan Blackboard Users Group (MiBUG), University Professional and Continuing Education Association (UPCEA), Arizona State University Blackboard Users Group, and the Professional and Organizational Development (POD) Network. Though Bond and Dirkin (2018) initially explored the prevalence of work beyond traditionally accepted definitions of instructional design, the gender of respondents was also solicited in the original survey. The investigation of gender's role relative to certain aspects of the subject pool's experience yielded potentially notable and certainly interesting results. What follows is a concise overview of instructional design's evolution into a female-dominated field, an introduction to a gender-related phenomenon known as the glass escalator (Williams, 2013), and data analysis surfacing differences between males and females in the instructional design role and practice. Discussion and implications of the data analysis findings and recommendations for necessary future research are also included.

Literature Review

Instructional Design's Female Predominance

Instructional design originated in the 1940s and established itself as a separate field independent from those from which it emerged by the 1960s (Reiser, 2001). Though instructional design is predominately female today, this was not always the case. When instructional design emerged from the field of psychology, female predominance was not a hallmark of instructional design or many other fields of the time. While documented cases of women representing a minority stake in instructional design are severely limited, some vignettes are beginning to emerge in books and journals. In her chapter, "Mentoring and the Role of Women in Instructional Design and Technology" in Women's Voices in the Field of Educational Technology , Richey (2016) detailed her career as a woman within the instructional design field, starting in 1971, and her experiences as a minority among men. After graduation, Dr. Richey was the only female faculty member within the instructional technology program in the 1980s (Richey, 2016). Throughout her career, she searched for other female practitioners with limited success. While this is only one individual's experience, it helps paint a picture of how scarce women were in the field only a few decades ago.

Today, however, a clear female majority exists in the field. Depending upon the source of data one consults, instructional design is approximately 70 percent female, 30 percent male. Bond and Dirkin (2018) found among 254 subjects, 67 percent of practitioners are female, 30 percent male, with the remaining three percent indicating either non-binary gender or abstaining. These gender demographics fundamentally align with Intentional Futures (2016) findings and the U.S. Bureau of Labor and Statistics (2019). The Intentional Futures study of higher education found that "instructional designers are 67% female and their average age is 45" (Intentional Futures, 2016 p. 6). If one looks at the U.S. Bureau of Labor and Statistics, the closest categories are related to the larger field of training and development specialists or managers. They reported a minor discrepancy. Other predominantly female occupations similarly evolved over varying arcs of time with respect to gender composition to become female majority.

Before the U.S. Civil War, for example, men were more likely to be employed as teachers than were women (Hodson & Sullivan, 1990). A number of historical events served as pivots impacting the gender balance of the workforce. The 1870 United States Census was the first to record female engagement in employment, finding at the time that women made up 15 percent of the total workforce. The first and second World Wars likewise created more opportunities for women in the workforce, further transitioning many females into occupations beyond the home (Green, 2000). Despite a relative balance in males and females in the employable populace, instructional design is among several fields known to be gender-segregated. Gender segregation in the workforce was identified decades ago as "one of the most perplexing and tenacious problems in our society" (Williams, 1992, p. 253) but nevertheless persisted. Impacts arising based upon the gender composition within a field may be unexpected and concerning. The following section provides an overview of one such phenomenon related to gender, tokenism, social status, and the collective potential relationship of these factors to affect advancement and opportunity.

The Glass Escalator

In groundbreaking research, Williams (1992) concluded that males generally encounter structural advantages when employed in predominantly female professions. Borrowing some terminology from an occurrence better-known at the time, the glass ceiling, Williams (1992) referred to the advantages experienced by males working in female-majority fields as the glass escalator. Whereas the glass ceiling posits the existence of an invisible barrier that prevents women from reaching top positions

in organizations (Hymowitz & Schellhardt, 1986), the glass escalator indicates there exist "subtle mechanisms [that] seem to enhance men's position in [female-majority] professions" (Williams, 1992, p. 263). The theory indicates that part of the advantage comes from tokenism, which is the relative numeric rarity of a particular group or representative of a group within a larger context (Kanter, 2008). The second component is the token group members; even more so than a numeric rarity, social status "determines whether the token encounters a 'glass ceiling' or a 'glass escalator'" (Williams, 1992, p. 263). In other words, the glass escalator idea suggests that the higher social status of males over females affords them an advantage even when they are a minority in a given profession: "While women climb the ladder in female-dominated professions, their male peers glide past them on an invisible escalator, shooting straight to the top" (Goudreau, 2012, para. 3).

Williams' (1992) work is qualitative and involved interviews with 99 subjects (76 men and 23 women) between 1985 and 1991. At the time of the study, the subjects were employed in one of four fields: nursing, elementary school teaching, librarianship, and social work. Authors described these professions as "…pink-collar occupations because of their higher likelihood of [males] being promoted…" (Dill et al., 2016). These four professional arenas, the female semi professions, occupations that require advanced knowledge and skills but are not widely regarded as a true profession (Hodson & Sullivan, 1990), ranged in their gender composition from just five and a half percent male in nursing to a high of 32 percent males found in social work. The research revealed several thought-provoking findings. Among them, and at the core of the glass escalator phenomenon, were male subjects reporting the belief that being male had made a primarily positive difference in the opportunities they received.

Furthermore, male subjects were cognizant of their tokenism, often indicating their own knowledge of there being relatively few men in their fields. Even in those cases when subjects reported what was initially perceived as internal discrimination against them, later events left them in increasingly advantageous positions, with more authority and increased status (Dill et al., 2016). One subject, when asked if he had considered suing over being transferred out of a job due to how he had been received as a male, responded in part, "I've got a whole lot more authority here. I'm also in charge…and I've recently been promoted" (Williams, 1992, p. 263). Even in pre-service contexts, Williams found advantageous circumstances emerging for men as they prepared to enter female-majority fields. Subjects reported what was perceived as extra encouragement from professors and administrators because they were male and studying in female-dominated disciplines. The glass escalator is presented in hiring practices as well. In neither the case of pre-service experiences nor in the hiring phase were advantages extended to males only by other males.

On the contrary, females were also noted as advancing males in female-dominated fields. Williams (1992) indicated that women were enthusiastic about men entering their fields. Subjects noted their career success having been facilitated in a multitude of ways by women. One subject reportedly recognized being "extremely marketable because I am a man" (Williams, 1992, p. 256); another indicated being told by a hiring manager, "it's nice to have a man because it's such a female-dominated field" (p. 256). Simultaneously, female subjects were noted showing some resentment for the perceived ease in advancement men in higher positions experienced. Also of interest were other ways, in each of the fields explored, men were sometimes treated differently. This was not in the way one might expect, as Williams (1992) suggested, experiencing a "poisoned work environment" (p. 260) as women sometimes do when entering male-dominated fields.

Conversely, male subjects in the study reported no instances of sexual harassment. The differences noted were more closely related to what was asked of them on the job. Specifically, male nurses were more likely to be asked to assist with male patients' procedures or lift heavy patients. Similarly, male librarians believed they were called upon more often when boxes of books needed lifting. Within the teaching field, however, something beyond the scope of the job was noted as one subject indicated "…teaching with all women, and that can be hard sometimes" and went on to share "if somebody gets a flat tire, they come and get me… there are just a lot of stereotypes" (p. 260). Some subjects, in each profession, shared being bothered by the various forms of special treatment; others indicated that no distress was caused by it. A third group felt more valued by what they saw as appreciation and an opportunity to contribute to the profession in other ways with "special traits and abilities (such as strength)" (p. 261). Williams concluded that more work would be needed to integrate men and women into the labor force. From this early work, several other related studies have sprung, some of which brought the work up to date, built upon it, or both.

In a study that both expanded upon and updated William's (1992) research, Budig (2002) examined three different populations to determine whether male advantage is the same in differently composed settings: female-dominated, gender-balanced, and male-dominated. The research focused on wage levels and wage growth, and found males, with respect to wage growth, had an advantage across all three groups. Though wage growth advantage was maximized in male-dominated fields, it was also present in female-dominated fields. In the latter

case, the difference is interpreted as a systemic devaluation of a field due to its female majority (England, 1992; Kilbourneet et al., 1994 as cited in Budig, 2002). Overall, males experienced wage growth three percent faster than females, though this research does not necessarily support the existence of the glass escalator in the way posited by Williams (1992). Instead, though the advantage was noted in female-majority fields, the most significant advantage was not found there for men but in male majority fields.

Further, more recent quantitative tests of the glass escalator have produced varying results, supporting the glass escalator hypothesis, introducing mitigating factors, and other research offering evidence to the contrary (Smith, 2012). Huffman (2004) illuminated an additional nuance, concluding that the effect of gender composition on wage inequality increases with job rank. In other words, as males move up in a female-majority field or organization, so does the magnitude of their advantage. In a related, earlier study Hultin (2003) investigated advancement opportunity in a longitudinal investigation and found men who work in fields typically viewed as female occupations have much greater opportunities for internal promotion than female counterparts. Hultin controlled for possible differences in gender-specific preferences and ambitions (e.g., premarket career preference, attitudes toward upward movement). In this way, men and women included by Hultin were even more equivalently compared. Ultimately, results were found, which further indicate the disadvantage to women is a gender-specific effect, thereby offering additional support for the glass escalator concept.

Smith (2012) introduced employer-sponsored benefits as an area for exploration and found additional support for the glass escalator, concluding it is both “gendered and racialized” (p. 168). Additionally, Smith (2012) found that “white men experience a double advantage based on the fact that they possess two socially valued statuses” (p. 168), being white and male, faring better in terms of career advancement and when compared with female colleagues at similar levels. These findings further support William's (1992) claim that the social status of the token’s group, their rarity alone, creates conditions for the glass escalator.

Snyder and Green (2008) conducted a qualitative investigation into glass escalator phenomena among registered nurses and found contrary evidence. Specifically, while gender segregation or concentrations in certain horizontal specializations existed, males were not disproportionately represented in higher-level administrative positions. However, it may be worth noting that male representation in the nursing field also grew considerably over the period encompassing the work of Williams (1992) and Snyder and Green (2008). The proportion of male registered nurses more than tripled from just 2.7 percent in 1970 to 9.6 percent in 2011 (Landivar, 2013). This growth may signal factors that served to level the playing field in the profession. Nevertheless, and despite some mixed findings, the literature overall tends to support the existence of a glass escalator and collectively supports the notion of male advantage in various settings, particularly those that are predominantly female (Alegria, 2019; Snyder & Green, 2008; Williams, 1992).

Alegria (2019) built upon the original concept of the glass escalator but looked more closely at how women, particularly white women, are given slightly more advantages in technology-based industries over women of color. During the 1990s, the role of women within the technology field had reached a peak and has since declined as it has returned to a primarily male-dominated occupation (Alegria, 2019). More specifically, “women of color remain numerical minorities,” which makes the study of tokenism within technology-based occupations fruitful for those looking to better understand the concept of the glass escalator (Alegria, 2019, p. 2). During her study and literature review, Alegria (2019) found that women tend to move into technical roles, and of those who do, white women more regularly move into managerial level positions, similar to their male counterparts. Is it possible that the tokenism experience among males within instructional design, and other fields, is similar to tokenism that white women may experience in relation to their non-white female counterparts? Alegria's research draws attention to the notion there are many levels of the glass escalator that move beyond gender and include race. King et al. (2017) focused heavily on this intersectionality within the glass escalator through literature review and analysis. The effect of this intersectionality within the glass escalator varies by industry, but race appears to be the most prominent in its effects following gender. While the work conducted by Bond and Dirkin (2018) does not focus on intersectionality within the glass escalator, it is essential to be cognizant that there are many layers related to identity groups that can be affected and should be further researched.

Instructional Designers and the Glass Escalator

As noted earlier, multiple sources align instructional design with other gender-segregated fields. Specifically, its characteristic female majority of about 70 percent (Bond & Dirkin 2018; U.S. Bureau of Labor and Statistics, 2019; Intentional Futures, 2016) makes it similar in that regard to nursing, social work, librarianship, elementary and special education. Among the fields addressed thus far, instructional design aligns most closely with social work (Williams, 1992), wherein males account for

approximately 30 percent of individuals in the field. While considerable research exists investigating the varying impact of instructional design products among learners of different genders, very limited study of gender's role in instructional design practice has occurred. Though questions have been asked in the literature with regard to instructional design over the past few decades (Gray et al., 2015), lack of understanding persists (Smith & Boling, 2009). Particularly concerning gender impact, the analysis offered by Bond and Dirkin (2018) addressed an arena ripe for additional research and exploration.

In her autoethnography, Campbell (2015) shared her personal experiences as an individual who identifies as a woman and an instructional designer and intertwines those experiences with literature review and academic research through a feminist lens. She stated that instructional design, which is currently categorized as a "science," causes unintended gender-based stereotyping, a theme common in STEM-related fields (Campbell, 2015). Campbell's feminist approach to instructional design is that it is "process-based, relational, and transformative," similar to the same feminist approaches in other forms of design-based fields such as architecture (Campbell, 2015, p. 233). Campbell claimed that one of the barriers to female instructional designers is that the field itself has "long been masculinized by language, by discourse, by metaphor," and by "the tools [we] have chosen to use" (Campbell, 2015, p. 233). To illustrate this point, Campbell highlighted the frequency in which instructional design created/based workshops utilize language that focuses more on the act of "doing" rather than the act of "thinking," which can be interpreted as masculine (Campbell, 2015). This use of masculine language could be a clue to why and possibly how the glass escalator exists within the field of instructional design. While Campbell shed light on language and feminism within instructional design, her work does not fully illuminate how this lens can be focused on higher education, but rather, the field as a whole. Bond and Dirkin (2018) use Campbell's experiences and study to be more cognizant of the feminist lens while focusing on instructional design within higher education and its potential relationship to the glass escalator.

Similar to Campbell (2015), Romero-Hall et al. (2018) used a critical autoethnographic approach to examine the female experience within the field of instructional design. Many of the stories within the article featured women who have faced discrimination while in their roles as instructional designers for issues related to the demands of being a mother (Romero-Hall et al., 2018). Another issue identified within Romero-Hall et al.'s (2018) research was that several of the women interviewed experienced isolation and depression due to an identity crisis caused by perceived sexism. These feelings could also impact instructional designers who identify as women view themselves and their own success in the field, affecting whether the glass escalator is present. While the number of women in instructional design has grown significantly, the feelings of being alienated or dismissed appear to still be present in the field, even within traditionally liberal environments, such as universities (Romero-Hall et al., 2018).

Educational institutions focus on growth in online course and program offerings, student retention, and effective teaching and learning practices. These factors increase instructional designers' importance as they are charged with preserving and improving the integrity and quality of instruction (Ross & Morrison, 2012). Recent research consistently situates instructional designers' contributions as critical factors in the success of higher education (Tate, 2019; Ross & Morrison, 2012; Campbell et al., 2009). The consideration Bond and Dirkin (2018) gave the question of gender in instructional designers' role is unique. Exploring gender with respect to designers' potential areas of specialization, perceptions of design process ownership, autonomy, and other aspects of instructional design practice is likewise novel.

Methods

In January of 2018, Bond and Dirkin distributed a national survey (see Appendix) soliciting responses from instructional designers regarding perceptions of their roles. This paper examines the same dataset obtained by way of the original survey. The web-based survey, created with and hosted on Qualtrics®, was adapted with permission from surveys conducted previously by Intentional Futures (2016) and Sharif and Cho (2015). Themes were also adapted from the previous work of Miller (2007) and Gibby et al. (2002). The authors examined the data for general trends in role diversification and leadership among instructional designers and connections between these and gender.

Participants and Procedures

In January of 2018, Bond and Dirkin distributed a survey (see Appendix) soliciting responses from instructional designers. Recipients of the invitation to participate served in various capacities related to teaching and learning/e-learning/instructional design leadership roles. However, all participants were asked if they worked in an instructional designer capacity before beginning the survey. Participants were recruited to participate through listservs of professional organizations, including Michigan Blackboard Users Group (MiBUG), University Professional and Continuing Education Association (UPCEA), Arizona State University Blackboard Users Group, and the Professional and Organizational Development (POD) Network. These listservs cater to instructional designers in public and non-public

institutions. Prior to distribution to the target population, the survey was piloted among the instructional design management and staff of a Midwestern university's teaching and learning center, a cohort of doctoral students and faculty. After implementing a series of suggested edits, the link was distributed to subscribers of various email lists, including the Michigan Blackboard Users Group (MiBUG), University Professional and Continuing Education Association (UPCEA), Arizona State University Blackboard Users Group, Professional and Organizational Development (POD) Network, and another list which included a state-by-state reference of teaching and learning/e-learning/instructional design leaders. The survey instrument consisted of four question blocks and used conditional branching to assure that individuals who met specific criteria were exposed to a particular set of questions.

Data Analysis: Gender and Instructional Design Practice

For data analysis, to effectively address the role of gender relative to various aspects of instructional design practice, Bond and Dirkin (2018) limited gender to binary inputs of male or female-only (n = 248). Data gathered via the aforementioned survey (Appendix A) were used to generate a new variable, leadership score, calculated, as shown in Table 1.

Table 1

Leadership Score Calculation

Item Number	Summary	Value/Notes
10	**Do you manage others?**	**+1 for yes, informally; +2 for yes, formally; +3 for yes, informally and formally; +0 for no**
11	How many employees do you manage?	+1 for 1-2 +2 for 3-4 +3 for 5-6 +4 for more than 6
14	Functions served in addition to Instructional Design	+1 for committee work +1 for personnel management +1 for project management
17	Design model ownership/autonomy	+1 for creating the model(s) in use +1 for authority to change the model
Max		12
Min		0

Once a leadership score was calculated, t-tests and descriptive statistics were conducted to determine the significance of the various dimensions of leadership related to their position. Specifically, descriptive statistics were used to determine the number of males and females involved in committee work, personnel management, and project management. Additionally, descriptive statistics such as cross-tabulations were used to identify, relative to gender, the size of teams they managed, and areas of specialization. Independent samples t-tests were conducted using leadership scores, team size supervision, education level, and years of experience to determine whether differences between the two groups were statistically significant.

Considering further one's involvement in additional functions as a potential area of significant difference between genders, Bond and Dirkin (2018) created another variable from subject responses to survey item 14 (functions other than instructional design). The new variable, Diversification Score, represents a total based upon one point for each of the ten additional functions a respondent selected in item 14. A minimum value of 0 and a maximum of 10 were possible. While the initial purpose of the diversification score was to assist in quantifying typical additional duties of an instructional designer, grouping scores served as a final look into gender's relationship with other aspects of instructional design practice. An independent samples t-test was used to determine if there was a significant difference between genders regarding the diversification score.

Results

The data analysis looked at multiple areas of leadership within the role of an instructional designer. These include leadership functions such as committee work, personnel management, and project management. In addition, researchers examined other leadership responsibilities such as team management and job diversification. T-tests were conducted to determine whether a significant difference existed between the groups to understand mediating factors such as education and experience level.

Education and Experience

An additional independent-samples t -test was calculated to compare the mean level of education between males and females to examine the disparity between genders. Here again, values were assigned to each level of the ordinal variable, level of completed education. This test found no significant difference ($t(245) = -1.889$, $p > .05$), though it was noted that females, on average, possessed more education than males, education level across both groups was comparable. The mean education level of females ($M = 4.38$, $sd = .644$) was not significantly different from the mean among males ($M =$

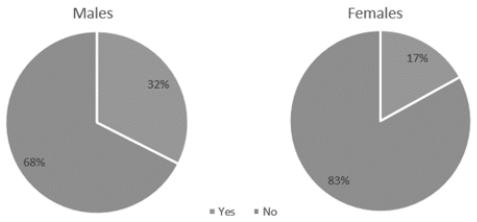
4.21, sd = .732). Another test was calculated comparing mean years of experience between males and females (t (245) = 1.998, p < .05) to assess whether time in the field may have played a role. Statistically, a significant difference was found in the mean years of males' experience level (M = 2.83, sd = 1.271), which was higher than among females (M = 2.44, sd = 1.483). It should be noted that these means were calculated based on the selection of an option associated with a range (e.g., less than five years, six to ten years). Consequently, the difference between the means (0.39) equates to approximately 1.95 years of additional experience, on average, among men.

Leadership Functions

Male subjects more frequently indicated involvement than female counterparts in committee work (68 percent, vs. 58 percent), personnel management (39 percent, vs. 27 percent), and project management (78 percent, vs. 68 percent). Additionally, males were nearly twice as likely to indicate involvement in all three leadership functions (Figure 1).

Figure 1

Involvement in Committee Work, Personnel Management, and Project Management



A Pie Chart Comparing Males' and Females' Involvement in Committee Work, Personnel Management, and Project Management

An independent-samples t -test was calculated comparing the mean Leadership Score of males and females to investigate the overall role of gender in leadership. A significant difference was found between the means of the two groups: (t (246) = 2.361, p < .05). The mean among males was significantly higher (M = 6.2208, sd = 2.0623) than that of females (M = 5.5731, sd = 1.9701). To unpack this finding, additional testing was done on a key component of the Leadership Score, the size of the respondent’s team.

Team Management

Subject responses to survey item 11, the approximate number of employees managed, n = 248, were grouped by gender. A cross-tabulation of this data appears in Table 2.

Table 2

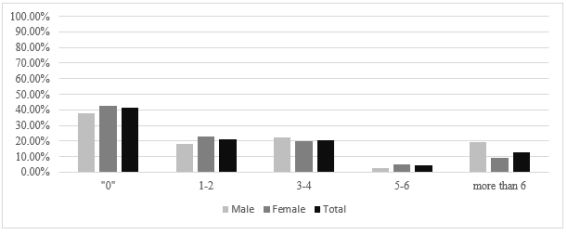
Number of Employees Managed by Gender

		Approximately how many other employees do you manage, formally and informally?					
		0	**1-2**	**3-4**	**5-6**	**More than 6**	**Total**
Male	Count	29	14	17	2	15	77
	%	37.7%	18.2%	22.1%	2.6%	19.5%	100.0%
Female	Count	73	39	34	9	16	171
	%	42.7%	22.8%	19.9%	5.3%	9.4%	100.0%
Total	Count	102	53	51	11	31	248
	%	41.1%	21.4%	20.6%	4.4%	12.5%	100.0%

Figure 2 displays team size by gender. Each of these representations demonstrates that male subjects are considerably more likely to be managing large teams of six or more persons.

Figure 2

How Many Managed Versus Team Size



A Bar Graph Comparing How Many Managed Versus Team Size

As the size of one’s team indicates a progression with a true zero point and a meaningful order between levels, team size was treated as an ordinal variable (Cronk, 2017), with numeric values assigned for each level for analysis comparing the genders. An independent samples t- test found (t (246) = 1.731, p > .05). While the mean value for males on item 11 (M = 1.48) indicated the supervision of larger teams among males, the difference between males and females (M = 1.16) was not statistically significant.

Specialization of Practice

As growth in demand for online learning design and expanding technology toolsets are often connected to the expansion of instructional design (Allen & Seaman, 2016; Kim et al., 2007), gender was also explored relative to specialization. Cross-tabulation was generated based upon an indicated area of practice (item 15) and gender (Table 3).

Table 3

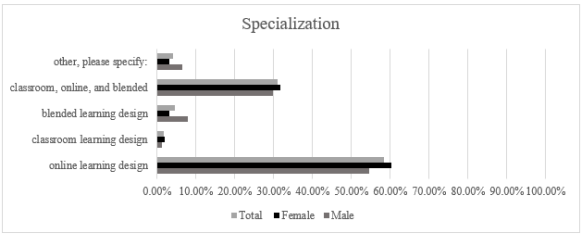
Crosstabulation of Areas of Practice

		Which of the following best describes your area of specialization in your current instructional design role?					
		Online learning design	Classroom learning design	Blended learning design	Classroom online and blended	Other, please specify	Total
Male	Count	42	1	6	23	5	77
	%	54.5%	1.3%	7.8%	29.9%	6.5%	100.0%
Female	Count	97	3	5	51	5	161
	%	60.2%	1.9%	3.1%	31.7%	3.1%	100.0%
Total	Count	139	4	11	74	10	238
	%	58.4%	1.7%	4.6%	31.1%	4.2%	100.0%

Further analysis (e.g., Chi-Square) was not possible, as more than 20 percent of cells have expected counts less than five. Despite this finding, one can observe in the cross-tabulation relative equity in areas of specialization between genders. The cross-tabulation in Table 3 and Figure 3 demonstrate that gender difference in an area of specialization is prevalent only among those in blended learning design. Additionally, the largest area of specialization is, not surprisingly, in online learning design. Six respondents did not respond to the specialization question; four others indicated other/please specify, but did elaborate further or offered an unusable reply and were therefore excluded from the data reflected in Table 3.

Figure 3

Areas of Specialization



A Bar Graph Comparing Males' and Females' Areas of Specialization

An independent-samples t -test was calculated to compare the mean diversification score between males and females. The test found significant differences ($t(245) = 3.391$, $p < .005$), with a mean value among males (5.2632, sd = 2.119) significantly higher than that among females (4.2749, sd = 2.112).

Discussion and Implications

It is relatively clear that instructional design bears similarities to other predominantly female professions (Milner et al., 2018; Shen-Miller & Smiler, 2015; Ridgeway & Kricheli-Katz, 2013; Williams, 1992; 2013). For example, the female majority emerged over time out of an era wherein practice was generally dominated by males (Yellen, 2020). As a female majority field and, therefore, a gender-segregated field, instructional design is a logical context for gender-specific research (Alegria, 2019). However, as noted earlier, limited research on gender and professional practice exists outside of a minimal collection of articles. Instead, research involving gender tends to focus on the instructional design process results as applied to learners of different genders. In other words, while the study of learning differences between the genders, relative to different instructional approaches, is available in the literature, investigation regarding gender's role within instructional design in the higher education profession is lacking. This gap in research serves to create a lack of understanding within instructional design practice. For example, knowledge of whether instructional design is subject to phenomena such as the glass ceiling or escalator, more specifically, what is causing it and how such a situation might be improved upon, is difficult to ascertain (Alegria, 2019; Williams, 2013). Therefore, despite the clarity with which instructional design's gender composition aligns with other fields, related questions are not so quickly answered. Suppose more research was done and knowledge gained by answering these questions. In that case, results may lead to possible action steps that could be taken to ensure more equal opportunity sharing for all instructional designers, regardless of their identified gender (Dewan & Gebeloff, 2012).

The data analysis certainly suggests that male instructional designers are positioned differently than female counterparts and, perhaps, the way males are situated is advantageous relative to function. However, one cannot conclude from this alone that the structural advantages noted by Williams (1992) in some fields, such as elementary school teaching, nursing, and social work, also exist in instructional design. Nevertheless, the results of this analysis do point to elements of the glass escalator phenomenon as males consistently fared better in some of the areas investigated (Alegria, 2019; Friedman, 2015). Specifically, significant differences between male and female instructional designers were identified by analyzing aggregate data surfaced by the leadership and diversification scores and years of experience. Had the former two variables not been created from the data, these significant and potentially essential differences would not have been identified. Despite what the data collected shows, it is still best practice when conducting these types of studies to remember that correlation does not necessarily equate to causation, and data found by Bond and Dirkin (2018) is no exception. More statistical analysis may still be necessary, however, as the sample sizes were unequal and therefore increases the likelihood of type I errors.

Considering management functions collectively, based on calculated leadership scores, male designers were significantly more involved in oversight activities ranging from the supervision of others to committee membership, project management, and autonomy over process. As specialization was also investigated, it was found that involvement in practice more broadly encompassing a spectrum of learning design, rather than specific areas such as online or classroom learning design only, did not appear to occur along gender lines. A more comprehensive look at diversification of roles did, however, yield significant results. Based on the diversification score analysis, male subjects engage in instructional design practice, which is significantly more diverse than their female peers. What may be causing this imbalance between male and female instructional designers is still unclear, and further investigation will be needed.

The conditions under which all of the advantages noted above occur are worth noting here. Comparison on demographic characteristics, specifically which one might associate with expected differences (e.g., level of education) in their experience and opportunities as practitioners, actually yielded counter-intuitive results. The level of education between males and females was not found to be significantly different, and female subjects had on average somewhat more education than males. Male respondents were found to have more experience in the field than females, an interesting finding, but one that did prove to be statistically significant. Further quantitative and qualitative research would need to be done to better illuminate the possible causes for these differences related to on-the-job experience and education levels.

Males exercising supervision among these survey respondents were outnumbered by females, more than two to one. This finding hints further at the presence of the glass escalator, as it is often the case even in those fields where a female majority is present, in management, the token male experiences certain advantages. Nevertheless, the absence of additional information in this data presents challenges to aligning outcomes with other research. As wage and rank were not included, nor were pre-employment preferences and attitudes regarding advancement assessed, the findings herein neither confirm nor refute those of earlier studies, including Budig (2002), Huffman (2004), and Hultin (2003). In contrast, certain fundamental elements present in this data or instructional design at large – a significant female majority and the resulting possible tokenism of males in the field, do indicate some consistency with elements of Williams (1992) and Kanter (2008). In summary, the data present in Bond and Dirkin (2018) posited an observably advantageous positioning for male instructional designers, despite male subjects not necessarily being better qualified. Overall, male designers indicated exercising more supervision authority and report more diverse roles than female counterparts. However, no strong correlation pointing to causation was revealed during this study, which emphasizes the need for future investigation in this topic as the field continues to expand and educational technology continues to rise in higher education.

Recommendations for Future Research

As alluded to earlier, further research is necessary to determine or refute whether instructional design may be among those fields subject to a glass escalator effect. These additional studies would be well-advised to collect more data than earlier investigations of instructional design, which, while focusing on role and aspects of practice, did not address gender (Bond & Dirkin, 2018; Intentional Futures, 2016; Sharif & Cho, 2015). For future quantitative approaches, soliciting information regarding income, rank, and perspectives, and attitudes on advancement opportunities would be tremendously valuable. Insights gained from these data points would not only enable additional analysis but also position the research to be compared more effectively with prior quantitative glass escalator research, including Huffman (2004) and Smith (2012). Moreover, it may also be advisable to repeat this research with a mixed-methods approach or an exclusively qualitative model as this could illuminate factors that would facilitate comparison with William's (1992) original study. The higher average leadership and diversification scores among males, which essentially translates into their possibly being asked to engage more frequently in management and involved in more widely varying functions, could be a function of more experience in the field. More research into this aspect is also needed to make such a determination.

Interviews with male and female instructional designers alike could be the only approach that yields insight into whether males are the recipients of subtle mechanisms advancing their careers, not on merit, but rather potentially on privileges associated with maleness. Here too, one might discover, as Williams (1992) did, that men were cognizant of their advantage. Additional study in this direction could also explore the existence of industry-specific stereotypes discovered in other fields. For example, are there instructional design practice equivalents to the male nurse being asked to assist with lifting a heavy patient or a male elementary school teacher being called upon when a tire needs changing? Conversely, the discovery of counter-evidence could occur. Research may find that something else, besides tokenism, social standing, and structural mechanisms, accounts for male advantage.

Tightening the scope on why males may experience privileges associated with their gender within the field of instructional design may require additional research and study on the language used both in on-the-job situations as well as in the recruitment and hiring processes. As mentioned earlier, some academics argue that much of the language associated with this field is masculine in nature, which can have unintentional or intentional effects on the perceptions and performance of female instructional designers (Campbell, 2015). Can the language used to describe expectations, and thus define success within the role, create barriers for women to have equitable opportunities for success in relation to their male-identifying counterparts? This type of study would require a broad literature review on the nature of language and gender in addition to research on a large sample size of both hiring literature and performance evaluations with regard to instructional design for various higher education institutions. A study of this nature could prove valuable in better understanding how language can be intertwined with the glass escalator within instructional design and how it can be utilized to create equitable opportunities for all designers regardless of self-identified gender.

To further deepen the understanding of how gender plays a role in instructional design and whether or not the glass escalator exists therein, it may be necessary to also look at how race may cause different responses among women. Intersectionality appears to play a role in workplace advantages and disadvantages, as shown in various research (King et al., 2017). Such layers of identity could assist in further understanding the effects of tokenism as it relates to those who identify as female, in addition to male tokenism explored in this study. Is it possible that a white instructional designer that identifies as a woman experiences a sort of tokenism compared to women of color who are in similar roles? Do those women recognize this possible tokenism, and if so, how do they feel about it? To seek out this type of data, a much larger participant pool will be needed to decrease the occurrence of data collection-related errors and ensure equal representation. The data collected on a study of this nature could be used to find gaps in support for those who identify with groups that may be experiencing the effects of a glass escalator and allow for possible solutions and increased advocacy to come forward.

Regardless of the outcome, the increasing importance of instructional design, as indicated by Ashbaugh (2013), Bean (2014), Boyle (2011), and many others, is impetus enough for continued investigation. Even as gender equality and equity remain at the forefront of workplace issues, instructional design's own shroud of obscurity (Sharif & Cho, 2015) may contribute to a lack of investigation in this area. While the focus has been understandably placed on research pointed at online learning growth and technology, learning science, and organizational impacts, to understand instructional design practice fully, it should be investigated in a more holistic manner, consistent with that found in other fields. Whether doing so surfaces the presence or lack of challenges similar to those found in other professional arenas, valuable insight will likely be gained.

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Appendix: Instructional Designer Survey

Q1 By continuing, you grant consent for your responses to be included in reporting and data analysis. Any identifiable information provided will be removed prior to compiling results. Do you wish to continue?

- o Yes (1)
- o No (2)

Skip To: Q2 If By continuing, you grant consent for your responses to be included in reporting and data analysis... = Yes

Skip To: End of Survey If By continuing, you grant consent for your responses to be included in reporting

and data analysis... = No

Q2 Are you currently working in an instructional design role (including management of instructional design staff)?

- o Yes (1)
- o No (2)

Skip To: End of Survey If Are you currently working in an instructional design role (including management of instructional... = No

Skip To: Q3 If Are you currently working in an instructional design role (including management of instructional... = Yes Page 2 of 8

Q3 Please indicate your current level of employment

- o Full-time (40 hours/week, 10 months or more per year) (1)
- o Three-quarter time (30 hours/week, 10 months or more per year) (2)
- o Half-time (20 hours/week, 10 months or more per year) (3)
- o Less than half-time ((4)
- o Other, please specify: (5)

_____

Q4 Please indicate your gender:

- o Male (1)
- o Female (2)
- o Non-binary/third gender (3)
- o Prefer not to say (4)
- o Prefer to self-describe: (5)

_____

Q5 Do you have formal instructional design education (e.g., a degree in instructional design or a closely related field)?

- o Yes (1)
- o No (2)
- o Other, please specify: (3)

_____

Skip To: Q7 If Do you have formal instructional design education (e.g., a degree in instructional design or a clo... = Yes

Skip To: Q6 If Do you have formal instructional design education (e.g., a degree in instructional design or a clo... = No Page 3 of 8

Q6 My formal education prepared me for work in the field of instructional design in:

- o All aspects
- o Most aspects
- o Some aspects
- o Only a few aspects
- o Other, please specify:

_____

Q7 Approximately how long ago did you complete your formal education in instructional design?

- o <5 years (1)
- o 5-10 years (2)
- o 11-15 years (3)
- o 16-20 years (4)
- o 21-25 years (5)
- o >25 years (6)

Q8 Please indicate your highest level of completed education:

- o High School
- o Associate’s Degree
- o Bachelor’s Degree
- o Master’s Degree
- o Doctoral Degree
- o Other, please specify:

_____

Q9 Please select the option which best indicates your years of experience in instructional design:

- o <5 years (1)
- o 5-10 years (2)
- o 11-15 years (3)
- o 16-20 years (4)
- o 21-25 years (5)
- o >25 years (6)

Q109 Do you manage other employees?

- o Yes, formally. (1)
- o Yes, informally (the other employee(s) do not report to me, but I assign work to them) (2)
- o No (3)

Skip To: Q11 If Do you manage other employees? = Yes, formally.

Skip To: Q11If Do you manage other employees? = Yes, informally (the other employee(s) do not report to me, but I assign work to them)

Skip To: Q13 If Do you manage other employees? = No

Q11 Approximately how many other employees do you manage?

- o 1-2 (1)
- o 3-4 (2)

- o 5-6 (3)
- o more than 6 (4)
  Q12Which of the following best describes the function(s) of the employees you manage (select all that apply)?

▢ Instructional Design

▢ Audio/Video/Graphic Production

▢ Coding/Programming

▢ Technical Support

▢ Administrative/Clerical

▢ Project Management

▢ Other, please specify:

Q13 About how much of your time at work is invested in instructional design activities, not including management of other instructional designers?

- o (1)
- o 21 percent-40 percent (2)
- o 41 percent-60 percent (3)
- o 61 percent-80 percent (4)

- o >80 percent (5)
  Q14 In addition to instructional design work, which of the following functions do you also perform (select all that apply)?

▢ Audio/Video authoring/editing or Graphic design (1)

▢ Coding/Programming (including HTML) (2)

▢ Committee work (e.g., assessment/accreditation councils, oversight groups, etc.) (3)

▢ Faculty development (e.g., designing and/or conducting workshops/training) (4)

▢ Instructor (e.g., teaching one or more courses on a regular basis) (5)

▢ Personnel management (e.g., hiring, performance review, etc.) (6)

▢ Scholarly activity (e.g., research, publishing) (7)

▢ Server administration (e.g., LMS, database, web server) (8)

▢ Technical Support (9)

▢ Other, please explain: (10)
_____

Q15 Which of the following best describes your area of specialization in your current instructional design role?

- o online learning design (1)
- o classroom learning design (2)
- o blended learning design (3)
- o general learning design, including classroom, online, and blended (4)
- o other, please specify: (5)
  _____

Q16 Which of the following best describes the design model in use in your current setting?

- o The same design model is applied to each project (i.e. a template is used) (1)
- o The design model varies slightly, project by project, based on needs (2)
- o The design model varies greatly, project by project, based on needs (3)
- o No formal design model is used (4)
- o Other, please specify: (5)
  _____

Q17 Which of the following describes ownership of the design model in your current setting (select all that apply)?

▢ I created the model/models my team and I use (1)

▢ I was given the model/models I/my team use(s) (2)

▢ I do not have authority to change the design model(s) (3)

▢ I have authority to make changes to the design model(s) (4)

▢ I and others have authority to make changes to the design model(s) (5)

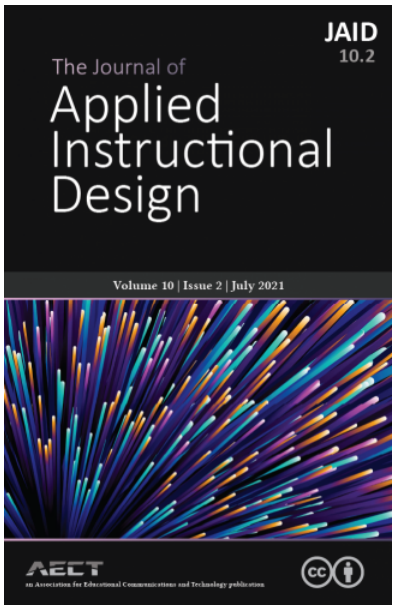
▢ Other, please specify: (6)
_____

Q18 Please indicate which theoretical framework(s) or model(s) from the literature underpin your instructional design practice:

_____
___

Q19 Would you be interested in being interviewed to further discuss your answers to this survey?

- o Yes, my email address is: (1)
  _____
- o No (2)



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