Transfer of Learning from Collegiate Deaf and Hard of Hearing Graduates to their Employment Outcome: An Exploratory Study

Transfer of learning is a critical theory in teaching and preparing adult learners to acquire and apply new knowledge, skills, and abilities in their future workplace (Haskell, 2001). Collegiate education preparation for adults who are deaf or hard of hearing is even more important for successful employment outcomes, especially in the fast-paced and competitive realm of today's workplace. Additionally, the Americans with Disabilities Act (ADA) and other legislation have increased the accessibility of a wide variety of postsecondary education programs in the United States for adults who are deaf, hard of hearing, or deaf-blind (Garberoglio, Cawthon, & Sales, 2017). Thus, this legislation and public policies in higher education have improved the openness of collegiate education opportunities for adults who are deaf and hard of hearing.

Yet only 18% of adults, who are deaf and hard of hearing fulfill the requirements of a bachelor's degree or higher, according to U.S. Census data from the 2015 American Community Survey (ACS) (Garberoglio et al., 2017). Employment outcomes of adults, who are deaf and hard of hearing's levels of educational attainment, increased slightly, from 65% for those who completed a bachelor's degree to 66.8% for those who completed a master's degree (Garberoglio, Cawthon, & Bond, 2016).

In general, transfer of learning from education to employment outcomes has been recognized as a problem and investigated by researchers who are interested in identifying ways to lessen the gap between learning and performance in the workplace (Haskell, 2001; Holton & Baldwin, 2003; Leberman, McDonald, & Doyle, 2006; McDonald, 2005). Forty percent of these adult learners fail to transfer what they learn from training to work immediately after training, and 70% demonstrate decreased learning transfer one year after completing their education program (Burke & Hutchins, 2007; Saks, 2002). The assessment of learning transfer provides evidence of a learning transfer problem (Baldwin & Ford, 1988), which may be attributed to the lack of evaluation instruments to diagnose the transfer of learning and limited personnel to perform a comprehensive and systemic evaluation (Holton, 2003). Furthermore, McDonald (2005) emphasized that in preparing the teaching-learning process, teachers should become skilled in exercising effective teaching strategies and critical thinking skills to sustain the needs of their adult learners in current higher education and employment climates.

The goal of this exploratory study is to investigate the extent to which deaf and hard of hearing adult graduates[1] were able to succeed in transfer of learning from their collegiate studies to their workplaces. The study outcomes may increase knowledge about and access for providing employment opportunities for adult learners by making employment resources available, thereby enhancing employment outcomes for recent graduates who are deaf and hard of hearing.

Literature Review

The concept of transfer of learning is a significant, broad, perplexing, and multifaceted field of study. It is generally referred to as the application of knowledge and skill gained from education to the workplace (Haskell, 2001; Leberman et al., 2006). Transfer is an important implication for faculty because most employers want to know what adult learners learn in classrooms that they then absorb and apply to the workplace (Barnett, 2005). A goal of university faculty is to engage and prepare learners to apply what they learn, transferring this information from classrooms to their future employment outcomes (Borden & Rajecki, 2000). Faculty members are capable of fostering learners' activities by furthering them to more thorough and independent thinking, and deeper learning transfers from classrooms to internship settings and workplaces. The transfer of learning is an asset for job preparation, especially with increasing competition for employment in today's global economy.

Transfer of learning has two dimensions: short-term near transfer and long-term far transfer, which are differentiated by the distance between learning in the classroom and putting that knowledge to affect the quality of job performance in the workplace (Holton & Baldwin, 2003; Leberman et al., 2006; Royer, Mestre, & Dufresne, 2005). Short-term near transfer and long-term far transfer have similar initial learning situations, but there are differences in the mechanisms of automatic transfer and mindful transfer (Leberman et al., 2006). With time and repeated practice, the automatic transfer effect most likely takes place in attaining knowledge and skills mechanically from classroom context to the internship context (Goldstone & Day, 2012; Myers, 2009). In contrast, a mindful transfer effect involves long-range purposeful, conscious thought and intellectual effort that is used to lessen significant gaps or differences between the classroom context and the workplace context (Leberman et al., 2006; Willert,

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[1] In this exploratory study, the authors did not inquire about the graduates as volunteer participants' specific backgrounds. Some of the participants may identify as culturally Deaf (as denoted with an uppercase "D" while other participants may not even if they are deaf (as a lowercase "d" or hard of hearing (Middleton, Hewison, & Mueller, 1998).

Keller, & Stegeager, 2011). Without learning transfer, learning outcomes are not internalized nor easily evolved into metacognitive knowledge and skills for transference to other situations (Myers, 2009).

Short-term near transfer occurs when adult learners apply new knowledge and skills from the classroom to their performance in internship settings. This acquired knowledge and skill can exemplify near transfer if the classroom environment simulates the adult learners' internship or other work experiences outside the classroom. Near transfer signifies skills or knowledge that are transferred from one learned event within a given training program or across different training programs to another learned event in the workplace context (Chen, 2003; Leberman et al., 2006). In the classroom setting, if learners show evidence of role-playing led by faculty, they have achieved near transfer (Myers, 2009). For instance, when adult learners study Statistical Package for the Social Sciences (SPSS) data management or chemistry in the classroom, and then apply the learned content and skills to their internship setting that is an example of short-term near transfer.

Long-term far transfer moves beyond the boundaries of what is learned to include continual use, generalization, and adaptation of learned skills for application to a variety of work tasks (Holton & Baldwin, 2003). Far transfer is signified as skills or knowledge learners can apply from school contexts to non-school contexts, such as the workplace, where they recollect what they have learned and apply it to their job (Chen, 2003; Leberman et al., 2006). For instance, if learners' knowledge and skills in SPSS data management or chemistry are used in their internship settings, they would make good use for the long term by transferring that knowledge and skill to a workplace environment.

Learning is the precursor to personal and professional growth that takes place within an adult learners' generic knowledge, skills, and abilities (KSA) preparation for employment values. A closer look at these 21st century, KSAs alongside research and data are attributes demonstrated by these participants in transferring from their university degrees to their employment and potential job promotion. Boyles (2012) responded to multiple calls for educators at all levels to recognize the challenges and opportunities in today's employment and to ensure that adult learners develop the generic KSAs they need. The difference between knowledge, skills, and abilities is subtle (Lauby, 2014); knowledge is a theoretical or practical understanding of information applied directly to the participants' performance in their studies and workplace. Skills are a capability of the participants to perform a psychomotor act including a manual, verbal, or

mental manipulation of people, data, or thing through training or experience, and abilities are the qualitied of a performance that results in a product (Lauby, 2014).

On behalf of the Association of American Colleges and Universities, Hart Research Associates (2015) investigated and echoed that most employers placed values on graduates' knowledge, skills, and abilities (KSA), including proficiency in communication skills, teamwork skills, ethical decision-making, critical thinking, and application of knowledge in the workplace. The generic KSA questionnaire was adapted to explore and conceptualize the latent transfer of learning from the collegiate education to the employment outcomes. Grounded theory was performed by using a traditional hands-on analysis of 19 participants' responses to assist in a set of real-information data collection and the quantitative data analysis (Creswell & Creswell, 2018). The participants integrated their generic KSA preparation for employment from multiple learned classroom contexts to their workplace contexts. The KSA questionnaires are used as part of a rating process.

Research Question

The research question in this study was: How well did collegiate deaf and hard of hearing graduates transfer generic knowledge, skills, and ability preparation for employment competencies from their major studies to their workplaces?

The insights and assessment of learning transfer from collegiate education to employment outcomes regarding the relationship between participants' degrees and employment outcomes were assessed by the following research activities:

1. Measure the general competencies of the knowledge, skills, and ability scores among deaf and hard of hearing graduates in the last three years;
2. Identify and utilize the specific measurements in communication and teamwork competencies in the workplace as an evidence base for describing the relationship between graduates' degrees and employment outcomes; and
3. Identify needs based on the findings and results to develop further study of the transfer of learning impact among deaf and hard of hearing adult learners.

Method

Participants

With Institutional Review Board (IRB) approval, 64 invitees, who had graduated from collegiate education within the last three years (2014-2016) from a specific academic department, were invited to participate in this research study based on a non-randomized sampling. Twenty-three of the participants had recently graduated with a bachelor's degree in government and 41 had a master's degree in public administration. Nineteen of the 64 graduates responded to an online survey (www.surveymonkey.com).

Measures and Procedures

The quantitative data collection via SurveyMonkey electronically and statistical procedures included demographics, identification whether research participants were deaf or hard of hearing, preferred communication mode, education level, major(s), and work experiences. The survey instruments collected data listing two mechanisms of learning transference: 1) A generic KSA preparation for employment questionnaire, and 2) competencies in the workplace questionnaire.

The generic KSA preparation for employment questionnaire was designed to determine graduates' perceptions of their learning contexts and post-graduation employment (Crebert, Bates, Bell, Patrick, & Cragnolini, 2007). Nine KSA questions were adapted with an additional nine questions for a total of 18 questions focusing on a wide range of tasks and contexts such as major of study, communication and written skills, research skills, critical thinking skills, problem solving skills, and so forth.

From these survey questions, the quantitative data found that two competencies in the workplace were significant: communication and teamwork skills.

- Communication skills: Conveying information to another effectively and efficiently. Participants who are deaf or hard of hearing and use American Sign Language (ASL) or spoken English language with good verbal, non-verbal, and written communication skills help facilitate the sharing of information between people.

- Teamwork skills: Working together cohesively towards a common goal. Adult learners create a positive working atmosphere in supporting each other by combining individual strengths to enhance team performance.

On the questionnaire, competencies in the workplace had two sets of 11 questions for communication skills and 13 questions for teamwork skills. Four of these communication skills questions were related to the needs of deaf and hard of hearing people who use ASL, sign language interpreters, and videophones to communicate in the workplace.

Completion of the questionnaires took approximately 30 minutes, although no time limit was set. A range of the Likert scale in response to each question was 1 (very weak), 2 (weak), 3 (neutral), 4 (strong), and 5 (very strong). All data from the survey were entered into a SPSS 24 version database for data analysis.

Results

The results of the participants' responses to the generic KSA preparation for employment competencies and a correlational analysis of both teamwork and communication skills were explored to answer the original research question. An analysis of the independent sample t test was discovered that recognized significant differences between female and male participants.

The KSA, communication, and teamwork competencies in the workplace culminated in a positive transfer of learning from these collegiate deaf and hard of hearing participants' graduation to their employment outcomes. This study also uncovered a deeper analysis of significant differences between female and male participants' communication and teamwork skills.

Twenty-eight of the 64 invited participants responded to the online survey. Eight of the responders opted out after they responded in the affirmative to the question of whether or not they were currently employed. This left 20 participants, of which one was eliminated because she or he did not meet the participation criteria. That left 19 participants who reported being directly, affected by the transfer of learning from graduations to employment outcomes.

Demographics

The gender differentiation in the study included 8 females and 11 males, ranging age from 22 to 52 years ($M = 34.89$, $SD = 8.84$). Fifteen identified as deaf

and four identified as hard of hearing while 17 participants reported their primary communication preference as ASL, one reported spoken English, and one for written English.

Most of the participants held a master's degree ($n = 14$, 73.7%), while five had a bachelor's degree, including two who held dual degrees ($n = 5$, 25.3%). The majority (11 or 57.9%) identified as European American/White, four as African American/Black (21.1%), two as Latino/Hispanic (10.5%), one as Asian/Asian American (5.3%), and one as Biracial or Multiracial (5.3%). With respect to employment status, the majority of the participants held various positions related to their fields of study ($n = 10$, 52.6%) as shown in the Table 1.

Table 1
Sample Demographics (n = 19)

Demographic	*n*	*%*
Gender		
Female	8	42.1%
Male	11	57.9%
Hearing Status		
Deaf	15	78.9%
Hard of Hearing	4	21.1%
Preference of Communication Mode		
American Sign Language	17	89.5%
English Spoken Language	1	5.25%
English Written Language	1	5.25%
Ethnicity		
European American/White	11	57.9%
African American/Black	4	21.1%
Latino/Hispanic	2	10.5%
Asian/Asian American	1	5.3%
Biracial or Multiracial	1	5.3%
Level of Education		
Master's Degree	14	73.7%
Bachelor's Degree	5	26.3%
Employment		
Positions related to her/his college degree	10	52.6%
Position not related to her/his college degree	4	21.1%
Continuing to advance studies	2	10.5%
Unemployed but have been employed before	1	5.3%
Working in a position either related to or not related to her/his college degree, and continuing to advance studies	1	5.3%
Working in a temporary position related to her/his degree	1	5.3%

KSAs

All 19 participants responded to each item relevant to the general competencies of the KSAs in the transfer of learning climate from their studies to the workplace. The participants' responses indicated a strong and positive correlation between university preparation for employment and successful employment experiences ($r_s = .726$, $p < .001$). The variability of the KSA, as shown in Table 2, identified the order of strong responses: ability to work with a team (100%); interpersonal skills (94.8%); general knowledge in the field of the participants' major study (84.2%); ability to communicate with non-experts (84.2%) and ability to work with diverse population (84.2%). Weak responses from the participants were as follows: creativity skills or generating new ideas (15.8%); research skills (11.1%); and learn and apply new knowledge and skill in practice (10.5%). Most neutral responses were related to communication and written skills (31.6%); ethical commitment (21.1%); and research skills (16.75%).

Table 2
Knowledge, Skills, and Ability Scores (n = 19)

Generic knowledge, skills, and ability preparation for employment questionnaire	*Mdn*	Low (Very weak/ Weak)	Neutral	High (Strong/ Very strong)
General knowledge in the field of your major study **	4	0%	15.8%	84.2%
Utilizing general knowledge of your major study in the workplace **	4	5.3%	15.8%	78.9%
Learn and apply new knowledge and skill in practice *	4	10.5%	15.8%	73.7%
Planning, organizing, implementing time management **	4	10.5%	10.5%	78.9%
Communication and written skills *	4	0%	31.6%	73.7%
Computing skills (word processing, database, other utilities) **	5	10.6%	5.3%	84.2%
Research skills **	4	11.1%	16.7%	72.2%
Ability to retrieve and analyze information from different sources *	4	10.5%	10.5%	78.9%
Critical thinking skills *	5	5.3%	15.8%	78.9%
Creativity skills or generating new ideas *	4	15.8%	5.3%	78.9%
Problem solving skills **	5	10.5%	10.5%	78.9%
Decision making skills *	5	5.3%	15.8%	78.9%

Ability to work with a team *	5	0%	0%	100%
Interpersonal skills **	5	0%	5.3%	94.8%
Leadership **	4	10.5%	5.3%	84.2%
Ability to communicate with non-experts **	5	5.3%	10.5%	84.2%
Ability to work with diverse populations *	5	5.3%	10.5%	84.2%
Ethical commitment *	5	0%	21.1%	78.9%

* Author adapted nine questions with permission from the Association of American Colleges and Universities. Falling Short? College Learning and Career Success by Hart Research Associates (January 2015).
** Author added nine questions.

Employment Outcomes

Next, after responding to questions covering generic KSA questionnaires, all 19 participants were asked about their job titles at their current place of employment and major studies as listed in Table 3. In addition, self-reported salaries were cross-tabulated by gender in Table 4.

Table 3
Participants' Job Titles and Major Study Degrees (n = 19)

	Job Title	Major Study Degree
1.	Administrative Officer	Master of Public Administration (MPA)
2.	Analyst	Bachelor of Arts (BA) in Government
3.	Program Assistant	MPA
4.	Director of Operations	MPA
5.	Diversity and Inclusion Specialist	MPA
6.	Ethics Officer	MPA
7.	Executive Director (501 (c)(3) Public Charitable Organization	MPA
8.	Program Coordinator	BA in Government
9.	Graduate Assistant	BA in Government/International Studies
10.	Human Resources Specialist	MPA
11.	Immigration Service Officer	BA in International Studies
12.	Occupational Communication Specialist	MPA
13.	Special Teacher	MPA
14.	Business Technologist	MPA

15.	Human Resources Assistant		MPA		
16.	Director of Basketball Operations/Scout		MPA		
17.	Administrator		BA in International Studies		
18.	Legislative Analyst		MPA		
19.	Human Resource Recruiter		MPA		

Table 4
Degrees and Salary Ranges (n = 19)

Salary Range	n BA	n MA	Female	Male	Total Percent
$39,999 or less	4	4	2	6	42.1%
$40,000 - $59,999	1	5	3	3	31.6%
$60,000 - $79,999	0	0	0	0	0%
$80,000 - $99,999	0	2	1	1	10.5%
$100,000 - $119,999	0	2	2	0	10.5%
$120,000 - $139,999	0	1	0	1	5.3%
Total	5	14	8	11	100%

Competencies in the Workplace

This exploratory study emerged on two of four competencies in the workplace: communication skills and teamwork skills since these two competencies garnered the highest scores with no outliers. Each competency served as a basis for a dimension of the transfer of learning from studies to the workplace that could be used to measure graduates' communication and teamwork competencies in their current workplace. Effective communication skills on the job as listed by participants included sign language, writing, listening, and mutual understanding. Teamwork skills included interpersonal skills, negotiation, and group effectiveness that inspires people to work together productively.

A correlational analysis was conducted using the Likert scale in the general skills section. The participating groups' ($n = 19$) self-evaluation of their own specific competencies in the workplace revealed statistical frequencies variables: 1) Communication skills and 2) Teamwork skills. Participants gave the highest ratings in communication skills ($M = 4.27$, $SD = .711$) and teamwork skills ($M = 4.39$, $SD = .596$). There was also a significant correlation between the scores of teamwork skills and the scores of communication skills ($r_s = .865$, $p < .001$). Thus, participants who scored higher teamwork skill levels also reported higher

communication skill levels. It is separate and different from assessing actual performance at the workplace.

Communication Skills

An independent sample *t* test was conducted to evaluate communication competency scores between males and females. There was a significant difference in the average score for communication competency between female participants ($M = 3.79$, $SD = .578$) and male participants ($M = 4.49$, $SD = .673$), (t (17) = -2.34, $p = .032$). The resulting correlation between scores of KSA and scores of communications Skills ($r_s = .843$, $p < .001$) is noteworthy.

With respect to communication skills by gender, using an alpha level of .05, an independent sample *t* test was conducted to evaluate scores. Results indicated a significant difference between female ($n = 8$) and male ($n = 11$) as indicated notably by the following:

- Males ($M = 4.09$, $SD = 1.64$) are more likely than females ($M = 2.37$, $SD = 1.30$) to communicate effectively with a large group of more than 10 people without interpreters in their current work environment (t (17) = -2.44, $p = .026$); and
- Males ($M = 4.63$, $SD = .674$) are more likely than females ($M = 3.75$, $SD = .707$) to write reports, letters, or other documents in their current work environment (t (17) = -2.77, $p = .013$).

The data presents a profile of all 19 participants' self-reported analyses in their responses to communication skills questionnaires (see Table 5). The range of the Likert scale in the Table 5 chart is a high average of 4.20. Two of the questionnaires relevant to communication skills revealed weak (31.6%) effectiveness in groups of 3-10 and more than 10 people without interpreters in their work environments. One major component of any communication interaction is differences between participants' (89.5%) preference of using American Sign Language and their co-workers and supervisors' using spoken English language to communicate in their work environments.

Table 5
Communication Skills Scores (n = 19)

Communication Skills Questionnaire	*Mdn*	Low (Very Weak/ Weak)	Neutral	High (Strong/ Very Strong)
Communicate effectively on a one-to-one basis without interpreters in my current work environment.	5	5.3%	10.5%	84.2%
Communicate effectively in a group of 3-10 people without interpreters in my current work environment.	4	31.6%	10.5%	57.9%
Communicate effectively in a group of more than 10 people without interpreters in my current work environment.	4	31.6%	15.8%	52.6%
Communicate by telephone, videophone, or other means in my current work environment.	4	0%	10.5%	89.5%
Write reports, letters, or other documents in my current work environment.	4	0%	21.1%	79%
Express ideas clearly in my current work environment.	5	0%	15.8%	84.2%
Write directions and procedures in my current work environment.	4	10.5%	21.1%	68.4%
Manage, guide, and facilitate a group activity in my current work environment.	5	5.3%	21.1%	73.7%
Interact easily with supervisors and co-workers from a variety of backgrounds in my current work environment.	5	0%	5.3%	94.8%
Research, gather, and organize information to support ideas in my current work environment.	4	0%	5.3%	94.8%
Use electronic mail, social media, and other means of technology to communicate in my current work environment.	5	0%	5.3%	94.8%
Average rating				4.20

Teamwork Skills

An independent sample *t* test was conducted to evaluate teamwork competency scores between males and females, using an alpha level of .05. A significant difference between females (*n* = 8) and males (*n* = 11) was indicated by the following:

- Males (*M* = 4.72, *SD* = .467) are more likely than females (*M* = 4.12, *SD* = .640) to listen actively to co-workers' comments/questions in their current work environment, (*t* (17) = -2.37, *p* = .029);
- Males (*M* = 4.81, *SD* = .404) are more likely than females (*M* = 3.87, *SD* = .991) to assume responsibility for ensuring a task is completed in their current work environment (*t* (17) = -2.87, *p* = -.011); and
- Males (*M* = 4.82, *SD* = .404) are more likely than females (*M* = 4.25, *SD* = .707) to teach and help co-workers as a part of a team in their current work environment (*t* (17) = -2.22, *p* = .040).

The data presented a profile of all 19 participants' self-reported analyses in their responses to teamwork skills questionnaires (see Table 6). The range of the Likert scale in the Table 6 chart is a high average of 4.39. Only one of the survey questions indicated weak/neutral (42.1%) in how participants help and relieve tension by joking or "lightening up" in their current work environments.

Table 6
Teamwork Skills Scores (n = 19)

Teamwork Skills Questionnaire	*Mdn*	Low (Very Weak/ Weak)	Neutral	High (Strong/ Very Strong)
Offer information and opinions to supervisors and co-workers in my current work environment.	4	0%	0%	100%
Start the group task in my current work environment	4	5.3%	15.8%	79%
Suggest answers to solve problems in my current work environment.	4	0%	10.5%	89.5%
Listen actively to co-workers' comments/questions in my current work environment.	5	0%	5.3%	94.7%

Provide positive feedback to supervisors and co-workers in my current work environment.	4	0%	10.5%	89.5%
Help and relieve tension by joking or "lightening up" in my current work environment.	4	15.8%	26.3%	57.9%
Assume responsibility for ensuring a task is completed in my current work environment.	5	5.3%	5.3%	89.5%
Ensure that instructions are understood by team members prior to starting a task in my current work environment.	5	5.3%	10.5%	83.9%
Teach and help co-workers as part of a team effort on a task in my current work environment.	5	0%	5.3%	94.8%
Assist in the process of making a decision with team members in my current work environment.	5	5.3%	5.3%	89.4%
Respect the thoughts and opinions of co-workers in my current work environment.	5	5.3%	5.3%	89.4%
Lead the team effectively in my current work environment.	4	5.3%	15.8%	79%
Treat co-workers with courtesy in my current work environment.	5	0%	0%	100%
Average rating				4.39

Discussion

The results of this study show that university preparation has a positive effect on short-term near transfer and long-term far transfer for adult learners prior to graduation. Due to the initial exploratory investigation using a small non-randomized sampling at a university departmental level, the utility of the results is neither internally or externally valid. Although gender differences were not initially included in the hypotheses, this study uncovered significant differences in the transfer of learning competencies in communication and teamwork from studies to the workplace between men and women.

In relation to the significant differences in the communication competency, more male participants indicated the ability to communicate effectively without interpreters in a group of more than 10 people than female participants did. Also, more male participants than female participants indicated that they wrote reports, letters, or other means of correspondence.

In terms of teamwork competency, male participants indicated more teamwork skills than female participants. Additionally, more male participants than female suggested solutions to problems in their work environments. Similarly, male participants assumed more responsibility for completing tasks than female participants, and more male than female participants indicated that they taught and helped co-workers as part of a team.

Male and female participants may have a significantly different level of motivation for applying what they have learned in various settings and contexts to use in the workplace (Haskell, 2001). Participants who are most effective in the workplace are able to apply learned tasks, knowledge, and reasoning from the classroom to new situations (Subedi, 2004). They are also able to contribute their skills to problem solving by effectively interacting with co-workers and supervisors in the work environment (Ryan & Deci, 2000). This may lend some clarification on the gender disparity in the results.

In general, women tend to use communication as a tool to enhance connections and create relationships (Mohindra & Azhar, 2012) and communicate to build rapport and take turns communicating. On the other hand, men use communication to convey information and achieve palpable outcomes (Merchant, 2012) and often communicate in a straightforward manner to work on a task and build relationships while working on a project. Women are more expressive, sensitive, and civil in conversation than men, especially in situations of conflict (Basow & Rubenfield, 2003). On the other hand, men are viewed as more likely than women to exchange information and problem-solving in order to avoid interpersonal problems (Merchant, 2012; Basow & Rubenfield, 2003). These differences may explain the norms that resulted in the significant differences between genders in this study.

From this study, achieving a deeper understanding of these communication issues in non-structured informal and structured formal meetings between male and female participants who are deaf and hard of hearing requires further study. They may differ in communicating through collaborative discussion, exchange of ideas, critiques, and their level of comfort with co-workers and supervisors in a non-structured informal and structured formal meeting. These markedly different communication styles may affect deaf and hard of hearing people in ethical, responsible thinking, decision making, and developing work relationships with hearing co-workers (Padden & Humphries, 2005; Hybels & Weaver, 2007).

Other factors may be that some deaf workers have different preferences for speech reading to communicate with their hearing co-workers daily (Barnett, 2002; Foster, 1998; Foster & MacLeod, 2003). Some may not be able to understand their hearing counterparts, which often leads them to feeling isolated and "out of the loop" in a non-structured formal meeting. Informal conversations are part of everyday communication in small groups of 3-10, or even more than 10 people, without interpreters, and deaf employees are often inadvertently left out of those conversations. For example, deaf workers may not have a chance to visually follow and interact with hearing co-workers or supervisors in an office, in a hallway, in an elevator, or even during lunch hour. Employees who are deaf or hard of hearing often lack access to daily communication that hearing employees have access to at all time, such as office banter or water cooler conversation. This access could help the deaf or hard of hearing employees have greater performance, giving them knowledge of their office culture and "mood".

Another probability related to the lack or non-availability of interpreting service in a work environment is that deaf participants who use ASL may not be confident in expressing or integrating conversation with hearing co-workers who use spoken English. They may instead only apply communication skills they have learned to achieve clear comprehension of the work context in a formal structured meeting when sign language interpreters are available to provide effective communication access with hearing people who use spoken English.

Some participants might be inspired to engage in multifaceted activities only when they have full and effective communication access in the workplace. They may integrate their knowledge and skills in multiple learning contexts and tasks with co-workers and supervisors in an environment free of oppression. Their intrinsic motivation inspires self-determination that is motivated by their innate psychological needs of creativity, teamwork, and communication in order to achieve their desire for productivity (Ryan & Deci, 2000). Self-determination behaviors may guide these participants in motivating their ongoing learning process, as well as maximize their self-confidence.

Limitations of the Study

Findings from this research are limited and therefore cannot be generalized to a large population sample. Initially, at the departmental level, there was a potential population of 64 graduates. Of these, 28 volunteered to participate in the study, with 19 completing the survey. The pool of participants was reduced by 32%, as some did not meet certain participation criteria. The results took into account only the data collected from those who completed the survey in its

entirety. The sample may have affected the internal and external validity measuring the outcomes of transfer of learning from university graduation to employment.

Due to limited data, interpretations of the findings presented in this study are similarly restricted. The most important limitation pertains to the departmental level on research-based major studies of interest because it only allowed investigators to explore recent graduates' major studies in relation to transfer of learning from graduation to employment. The departmental level may not be designed adequately for focusing on learning transfer outcomes or the broader field of major studies. It may have had insufficient challenges to maximize the transfer of learning needs of all the participants.

The results of the study can be inferred while being mindful of the limitations of internal and external validity of whether transfer of learning from graduates to their employment outcomes is sufficient evidence to support the limitations of the sample and departmental-level conditions. In spite of these limitations, the findings of the study have valid conclusions and implications for future research on learning transfer from graduations to the workplace.

Recommendations for Future Research

Even though the findings of this study indicate a significant difference between male and female graduates' long-term far transfer of learning from study to the workplace in the areas of teamwork and communication skills, the investigation of short-term near transfer of learning between classrooms and internship settings requires additional study. The scarcity of literature on this topic, coupled with limited data from this study, leaves researchers eager for further exploration, especially among adult learners who are deaf and hard of hearing.

The authors of this paper will discuss a theoretical understanding of how short-term near transfer between classroom and internship sites that might affect adult learners who are deaf and hard of hearing. Short-term near transfer between classroom and internship sites should be used to investigate the influence of faculty, curriculum design, transfer interventions, and class delivery methods on transfer of learning from classrooms to internship settings. Experienced faculty use best practices to design learning methods in classrooms, which are carried over in the delivery of learning transfer to internship settings. The use of well-designed learning interventions leads to the expectation of improving learners'

performance in an internship and ultimately in the workplace (Burke & Hutchins, 2008).

A consideration for further research is to determine the effects of a short-term near transfer of learning approach of adult learners' transfer of learning from classrooms to internship settings outcomes. Thus, short-term near transfer of learning is clear in a situation where the acquired knowledge or skills can exemplify near transfer if the classroom environment is simulated to closely mirror the internship and work environment (Barnard & Jacobs, 2007). For example, learning how to resolve mathematical problems in classrooms may help adult learners to later maintain multi-mathematical problem solutions in an internship environment. The investigation of short-term near transfer of learning between classrooms and internship settings warrants additional study.

The results of the qualitative research will contribute to increasing the findings of critical information and descriptive illustrations of these adults. The researchers will explore the pattern of storytelling to discern between successful and unsuccessful experiences in the short-term near transfer climate. Thus, teaching between classrooms and internship sites needs more investigation.

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