

When ideals meet deadlines: Counting the way
towards gender balance in student journalism at
Humber College

by
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Preface

This capstone project is an original work by Mike Wise. No part of this writing has been previously published. The research project, of which this capstone project is part, received research ethics approval from:

1. Humber College Research Ethics Board, “BBC 50:50 Content Reporting,” REB-0232, September 20, 2021
2. University of Alberta Research Ethics Board, “Shifting gender balance and source diversity in student journalism by sharing content measurement results,” Pro00113516, October 21, 2021

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Abstract

Purpose - This study aims to determine whether the regular measurement and sharing of source-diversity rates in a college newsroom will result in student journalists changing how they seek interviews in order to achieve the goal of a 50:50 balance of male and female sources.

Design - The study adopts a mixed-methods approach, using a 25-week content analysis of all stories published to a student website to track the gender balance of sources used by Humber College journalism students. It also uses a pre-and-post online survey to assess student attitudes toward gender balance, source diversity and reporting strategies.

Findings - The study found Humber College students achieved very close to a 50:50 gender balance (47.8% female, 51.3% male, 0.8% non-binary), a significant achievement compared to professional Canadian newsrooms. Students facing daily reporting deadlines were most likely to respond to the measurement results and change their reporting routines. At the same time, there is little evidence it was effective for students not facing daily deadlines. Surveys showed student journalists express overwhelming support for source diversity and gender balance in the media they produce and consume.

Research implications - This study contributes to the study of gender representation in journalism and source auditing by analyzing how reporters respond to learning about newsroom diversity measurements. It also contributes to the limited research into the differences between student and professional newsrooms. The findings will be helpful for reporters, journalism instructors or newsroom leaders looking to introduce source diversity auditing into their media operations.

Keywords - Source diversity, gender balance, audit, tracking, journalism, journalism schools, education.

Chapter 1: Introduction

In 1995, fresh into my career as a TV journalist, CBC sent me on an intense training course to learn how to film my own stories with a professional video camera. Over two weeks, I learned the basics of videography, from how to white-balance to how to light an interview. My instructors stressed the importance of getting good audio and charging your batteries. They also shared an editorial lesson that has stuck with me my entire career: *whenever you do person-on-the-street interviews, make sure you speak to someone who doesn't look like you.*

It was the first time anyone had talked to me, a white male reporter, about the importance of diversity in my reporting. My instructors explained I had to make a conscious effort to challenge myself to talk with a variety of people, or else I'd be tempted to stay in my comfort zone and seek out interviews with people who looked and sounded like me. They said it was a simple way to ensure my stories looked and sounded like the multicultural reality of Toronto.

Over the years, I saw CBC stress other types of diversity. Whenever I'd report for *The National*, I was encouraged to include voices from outside of Toronto, lest someone accuse the public broadcaster of an Ontario bias. Reporters were encouraged to seek out fresh voices and not rely on a so-called *Golden Rolodex*, a now-dated term referring to a list of contacts reporters can always count on to provide a quote on deadline (Oeftering, 2019).

In recent years, calls have grown for newsroom leaders to broaden the range of voices that appear on-air and in print. The Truth and Reconciliation Commission called for Canadian media to reflect the cultural diversity of the country's indigenous population (Truth and Reconciliation Commission of Canada, 2015, p. 292). The *#MeToo* movement drew attention to an underrepresentation of women's voices in the media (Testa, 2019). The aftermath of George

Floyd's murder brought calls from many journalists of colour for better representation of marginalized voices, both in the news and in the newsroom (Spinner, 2021).

When I started my job as a journalism professor and program coordinator at Humber College in Toronto, I looked for tools that might help raise awareness of these issues with my students. It's a complicated task. Some academic studies suggest there may be as many as 43 different ways to measure news diversity, ranging from the diversity of political opinion to ethnicity to market size (Joris et al., 2020). After learning about an initiative started by the British Broadcasting Corporation (BBC), I decided to focus on gender diversity, both in the classroom, and later for my capstone research. The BBC's 50:50 Equality Project was a successful attempt by Britain's public broadcaster to encourage its journalists to achieve a 50:50 gender balance of sources on air. The 50:50 initiative asked producers to count the gender of people quoted in stories, tabulate the overall results, and share the totals regularly with everyone working on the program.

The measurement system tried to address a long-standing structural issue faced by news outlets worldwide. Study after study showed male voices consistently outnumbered female voices in the news. A year before the BBC started to measure its gender balance ratios, a world-wide research effort found women in the U.K. made up just 28% of sources (Global Media Monitoring Project, 2015). The BBC initiative brought about systemic change: within three years, the broadcaster boasted about achieving a 50:50 gender balance in 74% of the programs using its measurement system (Wittenberg-Cox, 2020).

I wanted to see if I could repeat that accomplishment with student reporters in an academic setting at Humber College. Using gatekeeping theory and the *Hierarchy of Influences* model (Shoemaker & Reese, 2014), this study looks at whether learning about the latest source

gender balance measurements causes reporters to change how they look for diverse sources and whether this creates a feedback loop that might affect future gender balance measurements.

While many studies have conducted source diversity audits of stories published by media outlets, few have looked at how the reporting staff reacts to learning about the analysis on an ongoing basis. There is also little research done about how well journalism school newsrooms replicate the pressures faced by professional journalists. I hope other journalism instructors and newsroom managers can use the findings in this study as they implement source diversity tracking initiatives similar to the one introduced at Humber College.

This research project adopts a two-part strategy. The first part is a content analysis of every article published on the Humber journalism student website, Humbernews.ca, during the fall and winter terms of the 2021-22 school year. The content analysis uses a coding scheme based on the BBC's 50:50 methodology (BBC, 2021), which counts most male, female and non-binary sources quoted in stories and portrayed in photographs.¹ For the duration of the study, I tabulated the results every weekend so my faculty colleagues could share the gender balance measurements with journalism students on Monday mornings. The 25-week study let me look for trends over the term. My coding scheme also allowed me to break down results by grade level and gender, which yielded some of my most relevant findings.

The second part of the study is a pre-and-post survey of 2nd-year, 3rd-year, and post-graduate journalism students conducted online using SurveyMonkey. I administered the first survey before students learned I conducted a content analysis of their work. I administered the second survey in the winter term after students had been exposed to 11 weeks of updates about their source-diversity ratios. I chose to use pre-and-post studies instead of focus groups or

¹ Unlike other academic content analysis methodologies, the BBC approach does not count all sources. It excludes interviews deemed as "players" or "newsmakers" which it defines as essential newsmakers without whom the story could not be told.

interviews because this survey methodology can be used to measure what students learned (Hufford, 2010) and detect shifts in attitudes over time (Simon & Sapp, 2006). I want to see how learning the latest source-diversity measurements causes students to change how they feel about gender representation in the news they both consume and produce, and whether they change how they look for sources as a result.

This capstone project's primary research question is concerned with how effective the regular sharing of source diversity rates is in encouraging individual student reporters to meet a collective newsroom diversity objective. I want to know whether the BBC 50:50 Equality initiative can help student journalists reach a 50:50 balance of male and female sources. To explore that, I am posing three specific research questions:

RQ1: Did creating awareness of ongoing source diversity measurements change the ratio of male to female sources?

RQ2: Have student opinions about source diversity changed over the year?

RQ3: Did students change how they searched for interviews or sources throughout the study?

What follows is a literature review in Chapter 2, where I explore journalistic newsroom culture and structural causes for the under-representation of women. I also explore how I established a theoretical framework to guide my research design and interpretations of my findings. I also compare the BBC's methodology to other source diversity audit strategies and how this informs my research design. Chapter 3 will provide details of my methodology and mixed-method research design for the content analysis and pre-and-post surveys. Chapter 4 will present my findings and analysis. The final chapter will summarize the results, connect them to the existing literature, and identify potential areas for additional study.

Chapter 2: Literature Review

Introduction

If you watch any newscast, scan through any website, or read any paper, chances are you will find the proportion of male sources quoted in stories outweighs their general 50.4% proportion of the population in general (Global Media Monitoring Project, 2021a; Ritchie & Roser, 2019). This literature review aims to explore the possible reasons behind journalism's gender problem and evaluate the increasing ways media outlets are being called on to improve the diversity of their sources, content and staffing. It will also review the methodology behind the BBC's 50:50 Equality Project and compare it with other means of evaluating source diversity.

This chapter's goal is to develop a theoretical framework and context for evaluating whether the BBC's system of measuring gender balance ratios and sharing the results with reporters can work in an academic journalism environment. My primary research question is: how effective is the regular sharing of source diversity rates in getting individual student reporters to meet collective newsroom source diversity objectives?

I will explore that question by first reviewing my search methodology and strategy. The first subcategory will explore journalistic newsroom culture, examining the importance placed on expert sources and deadlines while also looking at power dynamics and the role of women in newsrooms. The following subcategory will briefly overview academic theories related to journalism studies, focusing on the *Hierarchy of Influences* framework. Subsequent sections will explore issues related to content diversity, staffing diversity, ethnic diversity and intersectionality.

I will then evaluate the BBC 50:50 system, placing it in the context of other source diversity measurement systems used by academics and professional journalists. Finally, I will give special consideration to practical differences between professional newsrooms and student newsrooms.

Methodology

Search Strategy

To conduct the literature review, I first identified a series of search keywords by performing preliminary searches in Google Scholar and the University of Alberta library databases. I used the terms journalist, reporter, interviewer, newsroom, editor, source, gender, diversity, balance, audit, tool and student.

I started my search at the Humber College library with the *Communication and Mass Media Complete* database, which references over 200 journals in the fields of communication and mass communications. I conducted searches using Boolean logic on a combination of keywords and recorded the results. I also combined keywords into phrases like "source diversity" or "gender balance" to produce more precise results. Using wildcards also affected my searches: *journalis**, for example, yielded articles related to journalists and journalists and journalism. I also used search combinations suggested by the database's autocomplete feature. I then repeated a similar search strategy using the University of Alberta's *Academic Search Complete* and the *Scopus* databases.

Criteria

My initial searches resulted in 1,971 articles. I experimented with the following criteria to filter and limit those results:

Year of publication: I started my searches with no restrictions on the year of publication, eventually deciding to focus on those published after 1980. I noticed more articles dealing with gender, which may have corresponded with an increase in the percentage of women working as journalists since the 1970s (Kurtzleben, 2014). My later searches in the *Academic Search Complete* and *Scopus* databases were limited to the last 20 years to reduce duplication.

Full text: The *Communication and Mass Media Complete* database allowed me to limit results to full-text articles I could access online. Librarians at Humber College helped me locate some additional material through inter-library loans.

Peer review: Limiting the search to peer-reviewed articles helped ensure the quality of the studies I retrieved and enabled me to identify journals specializing in journalism.

Restrictions: While I did restrict search results to English-language articles, I did not restrict them to any country or region. This allowed me to make international comparisons. I also accepted results involving all journalism formats, which allowed me to compare results between newspaper, broadcast and online outlets.

Grey Literature: I found and included several many articles published in journalism-related industry periodicals and websites such as *Quill* or the *Poynter Institute* (Lehrman, 2007; Lu, 2021; Rao et al., 2021), as well as masters' theses and conference presentations (Craig, 2017; Lyons, 2002; Roberts, 2005) located by searching for non-peer review studies.

Other search tactics included using the snowballing technique to identify additional studies and authors through citation tracking.

Limitations

Many of my keyword searches produced articles with different conceptions of what

"source diversity" entailed, which I explore later in this literature review. Searching for the phrase "media" produced many articles dealing with social media, which were irrelevant to my research. Searches for "gender representation" produced more articles about commercials and TV dramas than news media. Searching for terms like newsroom audits or measuring tools found very few articles. Using the scoping term "student" to find material related to journalism education produced limited results. I also added articles to my literature collection that I had researched for previous assignments on this topic and related work I collected for my work teaching journalism students.

Once the searches were complete, I reviewed the articles, deleted duplicates and exported 279 results into a spreadsheet. Scanning the titles and abstracts, I assigned each article a score from 1-5, with 1 and 2 being the ones I would prioritize reading. I imported 172 articles into *ReadCube Papers*, my chosen reference software. I also imported those results into a database in *Notion*, which I used to sort the articles further, identifying 134 that required further review. I created a second *Notion* database to code and organize my articles in a literature review matrix. It allowed me to sort results and compare ideas across articles using colour-coded tags. I identified themes of gender imbalances, newsroom culture, journalism theory, editorial diversity, and measurement methodologies.

Literature Review Findings

The following literature review will explore women's representation and participation rates in journalism and explore the gendered culture of many newsrooms. It will review several journalism theories, focusing on Shoemaker and Ross's *Hierarchy of Influences* framework (Shoemaker & Reese, 2014). Finally, it will compare measurement methodologies and look at

the strengths and shortcomings of the BBC approach and the challenges in transferring it from a professional to a student newsroom.

A global representation problem

The preface to the most recent international survey of gender representation in media suggested that "glass ceilings are setting in on certain important news media gender equality indicators" (Sison, 2021). Since 1995, the Global Media Monitoring Project has conducted international content analysis studies of women's overall presence in the news media every five years. Its first study revealed that only 17% of news subjects were women. Subsequent studies saw that number rise to 23% in 2005 and 24% in 2015 (Macharia, 2015). Its most recent study found that in 2020 women still made up just 24% of news subjects and sources in newspapers, although the numbers in Canada were up 4% to 31% (Global Media Monitoring Project, 2021b).

Other international studies show a consistent under-representation of women. In Europe, the share of women as news sources cited in online stories ranged from 32.9% in Norway (Sjøvaag & Pedersen, 2019), 33% in Ireland (O'Brien & Suiter, 2017), and 36% in Switzerland (Vogler & Schwaiger, 2021). Belgian TV reports cited women as sources in just 20% of stories (Swert & Hooghe, 2008), while male anchors and reporters were over-represented in Australian TV (Cann & Mohr, 2001) and many US television markets (Craig, 2017). A study of the three major Canadian TV newscasts showed that men are quoted three times as frequently as women (Asr et al., 2021). The literature points to an industry-wide problem around the world.

Newsroom Culture

Several authors have tried to examine the reasons for the under-representation of women in the news. Some point to barriers that prevent women from speaking freely when contacted by

reporters, such as childcare issues or not seeking the spotlight (McKeon, 2011, p. 3). Other women may fear abuse or harassment when speaking about controversial topics (Asr et al., 2021). The author of a study of US Sunday morning talk show guests theorized that their underrepresentation of women is not due to overt sexism but rather a shortage of powerful women in Washington politics (Baitinger, 2015). Advocates pushing for more women's representation call these "sin of omission, not commission" (Graydon, 2016) and publish guides to help connect journalists with female sources (Everbach et al., 2010). Women's Media Centre co-founder Gloria Steinem says "women must be visible and powerful in all aspects of media if American society is ever to be a real democracy" (Burton et al., 2021).

Expert Sources and Deadlines

Many studies cite journalists' deadline pressures as a possible reason they do not quote women as often as men (Asr et al., 2021). Deadlines force journalists to stop seeking new information and file their reports (Shoemaker & Reese, 2014, p. 196). When it comes to choosing whom to interview, reporters may rely on resumes, credentials, and subject matter expertise (Newsome, 2021) as well as a source's willingness to speak, timeliness in returning phone calls, and their relationship with the journalist (Meer et al., 2016). Faced with tight deadlines, "journalists tend to use sources they are comfortable with - that is, sources they get along well with and sources they have used in the past" (Martindale, 2006, p. 8), and this can privilege male voices (Cukier, Jackson, et al., 2019; Everbach et al., 2010).

Power Dynamics

Cory Armstrong's 2006 content analysis of 31 US newspapers offered an alternative explanation for the under-representation of women. He analyzed how many men or women were

quoted in articles and their *genre* of expertise: were they public officials, professionals, sports figures, or considered experts in their field? While he still found a clear preference for male sources, he attributed this to relevant qualifications: female sources were included when there was "a lack of male sources" (Armstrong, 2006, p. 78). Armstrong may overlook how those limited opportunities may be attributed to gender stereotyping or a tendency for journalism to focus on society's most popular and influential.

Robert Entman describes this as a "watchdog bias:" the mission of many journalists to hold those in power to account (Entman, 2010). This may result in media outlets focusing on events and people within "legitimate institutions" such as education, finance, police, and the courts (Tuchman, 1980). Carolyn Byerly argues those leaders may still be predominantly male (Byerly, 2021). A content analysis of Canada's 2011 Federal election found that men made up more than 80% of the clips on TV newscasts, which the authors argued was due to men being in positions of power where they would be considered experts (Barber & Levitan, 2013).

Depictions of Women

The literature suggests that many newsrooms associate traditional female gender roles with issues they consider 'feminine' and thus more likely to appeal to their female audience (Swert & Hooghe, 2008). Several content analysis studies find that when many women *do* appear in the news, they are depicted in so-called "soft" stories, dealing with traditional female topics like arts and entertainment, health and lifestyle, and family and education (Rao et al., 2021; Sjøvaag & Pedersen, 2019; Swert & Hooghe, 2008; Vogler & Schwaiger, 2021). Men, by comparison, are more likely to appear in so-called "hard" stories about politics, business and sports (Macharia, 2015; Rao et al., 2021).

While these findings may indicate editorial or journalistic structures favour gender

imbalances in sourcing, these may not transfer to a gender imbalance in reporting these topics. Two studies found little difference between male and female reporters presenting so-called hard or soft news (Craig, 2017; D'Heer et al., 2019).

Women in the newsroom

There is debate in the literature over whether increasing the percentage of women working in newsrooms can address gender stereotyping and increase their representation as sources. Several studies suggest that as more women reach a critical mass in the newsroom, source diversity will increase (Humphrecht & Esser, 2017) as women are "more inclined than their male colleagues to include female sources in their stories" (Zoch & Turk, 1998) and may have more access to sources like themselves (Zeldes et al., 2012). A three-month study² of US network newscasts found the *CBS Evening News*, where Norah O'Donnel was the anchor and managing editor featured 61% of its reporting by women. By comparison, ABC's *World News Tonight*, anchored by David Muir, featured just 28% women reporters (Burton et al., 2021). Other studies have found that due to similar organizational routines and policies in their newsrooms, there are no significant differences between female and male reporters when interviewing female sources (Liebler & Smith, 1997; Swert & Hooghe, 2008).

The literature suggests that the under-representation of women as journalistic sources may arise from newsroom deadline pressures and gender stereotypes regarding subject experts. It also suggested larger social pressures may limit female participation, including the availability and willingness of female professionals to speak to reporters and the tendency for media to cover powerful business and political leaders who may tend to be men.

² The study took place from January 1-March 31, 2021

A review of theory

It initially proved challenging to find a theoretical model for my research. In their study of empirical approaches used in academic journalism studies, Laura Ahva and Steen Steensen argue the multidisciplinary nature of the field means there are few shared theories or methodologies (2019). In a meta-analysis of several leading academic journals dealing with journalism, Steensen and other researchers found that "the majority of abstracts do not explicitly mention a specific theory or theoretical framework" (Steensen et al., 2019). However, whenever theories were mentioned, most studies in my literature review cited Gatekeeping Theory or the related *Hierarchy of Influences* framework.

Gatekeeping Theory

Chris Roberts calls Gatekeeping Theory the vanilla ice cream of theory:

"It may not be everyone's favourite, but nearly everyone can tolerate it. And while it may have an unremarkable flavour, it serves as a building block for other theory and methodological approaches" (Roberts, 2005).

The theory gets its name from Kurt Lewin, who used the metaphor of barnyard gates to describe how decision-makers influence the flow of information by choosing whether an item will pass through a gate (Lyons, 2002). David Manning White applied this to journalism studies by studying a wire editor at a small-town newspaper he named "Mr. Gates." He tracked Mr. Gates's reasons for rejecting almost nine-tenths of the wire copy he reviewed, noting how reliant the process was on Mr. White's value judgments and his own set of experiences and attitudes (White, 1950, p. 386). The theory is used to study the decisions made by publishers and editors (Serban, 2015) and how journalists perceive events as newsworthy (Shoemaker & Vos, 2009, p.

121).

Agenda Setting Theory

Agenda setting theory builds on Gatekeeping theory. It looks at how the public is influenced, and political reality is shaped not just by ideas that media gatekeepers put forward but by how much importance they attach to a story (McCombs & Shaw, 1972, p. 176). It supports the idea that while the media does not tell people what to believe, it "does suggest what we collectively may agree to discuss and perhaps act on" (Shaw & Martin, 1992).

Framing Theory

Framing theory is also used to understand how decisions to include particular sources are made. Based on the work of Erving Goffman, this approach tries to identify the familiar narratives journalists use to make sense of their stories by drawing upon specific ideas and issues from their personal backgrounds. When journalists are faced with seemingly limitless choices to create their stories, they may make their information overload manageable by invoking frames (Shoemaker & Vos, 2009) to help connect ideas "in a narrative that promotes a particular interpretation" (Entman, 2010).

The Hierarchy of Influences Framework

The most insightful theory I reviewed was Pamela J. Shoemaker and Stephen D. Reese's *Hierarchy of Influences* framework. Building on Gatekeeping Theory, it recognizes that media ecosystems are complex and can be studied at multiple levels (Cukier et al., 2014). It allows for both a macro and micro analysis by acknowledging that gatekeepers can work at different locations within an institution and realizes newsrooms are affected by changes coming from both individuals and larger social pressures (Roberts, 2005, p. 11). In their book, *Mediating the*

Message in the 21st Century, Shoemaker and Reese argue there are five levels of influence on media: social systems, social institutions, media organizations, routine practices, and individuals (Figure 2-1).

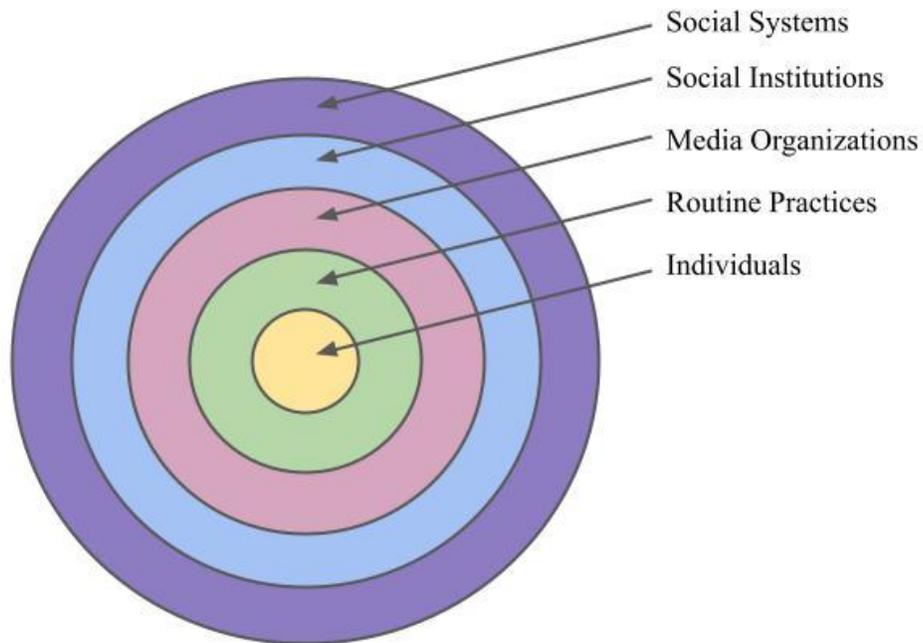


Figure 2-1: Shoemaker & Reese's Hierarchy of Influences framework. Source: *Mediating the Message in the 21st Century*, page 9

Social Systems Level

The social systems level is the outer ring and base level of analysis in the hierarchical model. It looks at how social systems, social structures, ideologies, and cultures may explain the choice and shaping of media messages. Shoemaker and Reese argue the media can act as an agent of self-control and help maintain the boundaries within society: "to define ideas and actions as either within the bounds of acceptability or as deviant and not politically legitimate" (2014, p. 75). The social system level of analysis might find the problem of gender representation in media is the result of more significant ideological, cultural, or structural

attitudes that exist at a societal level.

Social Institutions Level

Moving in from the social systems' outer ring, Shoemaker and Reese identify a social institutions level where institutional power centres like government or business exist and can coerce and shape media content. This is the level of analysis where we can talk about "the media" as a homogenous entity composed of all like-minded news outlets working under similar assumptions about what journalism entails (2014, p. 99). Some of the literature suggests many of the problems that contribute to unequal representations of women in journalism reside at the social institutions level (Sjøvaag & Pedersen, 2019). This would include a focus on holding those in power to account since, at a societal level, power may be unevenly distributed to men (Baitinger, 2015).

Media Organizations Level

While "the media" can exist as a homogenous collective at the institutional level of analysis, Shoemaker and Reese look at them as distinct entities at the media organization level of analysis. Each media organization sets itself apart from others based on "its ownership, goals, actions, rules" (2014, p. 130). These organizational structures help create newsroom culture, which can explain differences in women's representation in political stories (Humprecht & Esser, 2017). Shoemaker and Reese say any new employee must learn the norms and routines of their newsroom through a process of socialization (2014, p. 154). Geertsema-Sligh et al. suggest this socialization could reinforce sexist or patriarchal attitudes (2020). Media outlets that want to improve gender diversity and representation can do so at the organizational level by establishing diversity policies, creating source directories, or facilitating networking opportunities between

journalists and underrepresented communities (Cukier, Elmi, et al., 2019).

Routine Practices

When David Manning White studied the decisions Mr. Gates made to accept or reject wire stories, his Gatekeeping Theory study focused on the routine practices level of analysis. Gates set out rules to evaluate a story's newsworthiness to determine if it should make it into his paper (White, 1950, p. 386). Shoemaker and Reese define news as whatever a media organization's routines lead it to define as news (2014, p. 182). They describe those routines as "patterned, repeated practices, forms and rules that media workers use to do their jobs" (2014, p. 165) to serve audiences, maximize profits and deal with sources of news.

The routines level is also where policies can be encouraged to address gender representation. Media studies professor Brad Clark suggests newsrooms could make considerations for diversity an explicit part of any story assignment discussion "by calling on journalists to consider alternative, minority perspectives in their story pitches and their selection of sources, and by vetting news stories for inclusivity" (Clark, 2017).

Individual Level

At the innermost ring and micro-end of the *Hierarchy of Influences* framework is the individual level of analysis, which looks at the factors that affect how individuals make choices about media content. Shoemaker and Reese suggest one's social reality "is the sum of your own experiences plus the values and information shared with those around you" (2014, p. 62). This connects to the idea of personal identity and intersectionality (2014, p. 205) and shares some elements of Framing theory (Everbach et al., 2010).

While organizations can establish routines to establish newsroom norms, individual

journalists can play a significant role in gatekeeping, deciding which sources to contact for interviews and acting as the first entry point for information (Lyons, 2002). Thus, for initiatives to improve gender representation to succeed, they must include action at the individual level, urging journalists to diversify their sources (Everbach et al., 2010).

While the multidisciplinary nature of academic journalism work may have few shared methodologies, Gatekeeping Theory and the related *Hierarchy of Influences* framework appeared to offer the most useful theoretical basis for my capstone research.

Diversity in Journalism

Shoemaker and Reese note that "few occupations have been as concerned as journalism over how representative it is of the public" (2014, p. 211). What does it mean for a media organization to improve its representation or increase the diversity of its sources? While my focus is gender diversity, the literature mentions several other ways to define and measure source diversity, including professional status, editorial differences, and employee background (Carpenter, 2008).

Content Diversity

Some of the earliest content analyses I found focused on the professional status of a source. A 20-year survey of stories from the *New York Times* and *The Washington Post* found government officials accounted for more than three-fourths of all news sources (Sigal, 1973). Hansen cited this in her analysis of sixty Pulitzer prize-winning investigative stories, which found when reporters were freed from daily news pressures, they did not rely on as many government sources, press releases, or staged events and could find more original and diverse people to interview (1991, p. 476).

Other studies looked at the free competition of opinions in a "marketplace of ideas," a concept that dates to John Stuart Mill. A 1996 study by Paul Voakes et al. studied how six newspapers covered the debate over raising the legal drinking age in Wisconsin to twenty-one. Researchers analyzed stories, categorizing sources by type (government, private sector, police, ordinary citizen) and coded for any ideas, opinions or perspectives related to the issue. The study found little correlation between editorial diversity and source diversity (Voakes et al., 1996, p. 585).

Newsroom Diversity

A more recent and much broader comparative study of 31 US newspapers suggests the range of stories a newsroom covers increases as its staffing diversity increases (Armstrong, 2006). In terms of newsroom diversity, women are making progress. Canadian news outlets are close to parity with online news (49% of reporters are women) and broadcasting (48% of televised stories are reported by women (Global Media Monitoring Project, 2021b, p. 11). A *Toronto Star* staff survey suggests the newsroom is 47% women (Paradkar, 2021). The majority of reporting staff at the *New York Times*, *The Washington Post* and *USA Today* are women (Bauder, 2021). Larger newsrooms may be leading the way in terms of women on staff.

It is a different situation when measuring ethnic diversity. The Associated Press reports that 76% of its full-time employees are white (8% Latino, 7% Black, 6% Asian), while the *New York Times* says that as of 2020, 34% of its staff identifies as non-white (Bauder, 2021). In Canada, the CAJ survey found 93.3% of staff at the *Toronto Star's* Metroland group of community papers identified as white, compared to 48.3 percent of the general population of Toronto (Canadian Association of Journalists, 2021). The same survey found that eight in ten newsrooms employed no Black or Indigenous journalists (Paradkar, 2021).

There are a few factors that can confuse these numbers. Newsrooms have a poor record of tracking staff diversity and sharing that data with industry surveys (Bauder, 2021). Of the 639 outlets surveyed for the CAJ newsroom study, just 209 responded: a response rate of just 39%. Statistics Canada says four in ten Canadians claim they identify with more than one ethnic identity (2017). Journalists may hold multiple identities – something not quantified when surveys focus on just race or gender.

Intersectionality

Intersectionality lets us explore how the background or lived experience of a reporter or interview subject might affect their ability to influence news content. It is a sociological term coined by Kimberlé Williams Crenshaw in 1989 to describe the interconnected nature of social categorizations such as race, class and gender. From an intersectional perspective, a media content analysis that focuses solely on gender diversity misses the chance to see if those voices belong to Black, white, or Indigenous men, women, or people who identify as non-binary. As a result, it may result in "an incomplete understanding of the multiple forms of bias working simultaneously" (Nielson, 2011). The challenge for researchers is there are few established methods for incorporating intersectionality into mass communication methodology (Nielson, 2011, p. 6).

Some scholars have tried to develop a means to study this. Political scientist Ange-Marie Hancock identifies three methodological approaches for measuring categories of differences. She defines a study that focuses solely on gender or race as a *unitary approach*. A study measuring more than one category in relation to each other, such as gender and race, is a *multiple approach*. Hancock defines an *intersectional approach* as one that examines multiple dynamic categories, focusing on their interrelation (Hancock, 2007, p. 64).

Many journalists can find themselves conflicted by their intersectional identities, particularly if they belong to minority cultures and are seen by colleagues as representatives of those cultures. They may feel caught in the middle, constrained by journalistic and newsroom norms from their professional identity, while feeling empowered to make a difference in how the news covers their minority communities (Nishikawa et al., 2009).

Ethnic representation

There is no consensus in the literature regarding whether increased staff diversity results in greater source content diversity. Some literature shows that minority reporters are likelier to include minority sources in their stories (Clark, 2013). Many news organizations hire reporters from different ethnicities to build closer ties to their minority communities, but they may find their reporting confined to "minority" topics (Shoemaker & Reese, 2014, p. 210). Efforts at cross-cultural reporting can also backfire. A study of one newspaper's attempts to increase coverage of its local Indigenous population found the extra stories reinforced negative stereotypes by focusing mainly on poverty, poor health, alcoholism, and crime (Lehrman, 2015).

Zeldes et al. argue that when diversity is achieved through hiring, the organization may place the responsibility for implementation on those reporters. By contrast, they argue, if diversity is achieved through organizational policies, "then the organization would enforce such policies regardless of the characteristics of its workforce" (2012). Others see a supportive newsroom culture playing a more significant role in encouraging diverse news content than the diversity of staff (Smith, 2008). Shoemaker and Reese are more direct, arguing that staff diversity does not translate to editorial diversity because most non-white reporters go to the same schools as white reporters to learn the same journalistic norms and then go through the same newsroom socialization process when they get hired (2014, p. 161).

Justifications for Diversity

Proponents for greater diversity argue there is an organizational-level business case for doing so. With media outlets facing declining ad revenue (Public Policy Forum, 2017), and divided attention, some argue it makes economic sense to present more women and visible minorities as sources in Canadian news (Cukier, Elmi, et al., 2019) because they represent a sizeable market segment (Rao et al., 2021). Li & Thorson suggest that increasing both editorial diversity and the amount of diverse news content can boost circulation and ad revenue (2015). However, this study is based on data collected before the rise of social media and other digital news aggregators. Others suggest that media outlets could increase audience engagement (Graydon, 2019b) and attract subscribers by making more underrepresented audiences feel included in the coverage of community issues and events (Davenport & Grimm, 2021).

At the social systems and social institution level, media outlets face broader societal pressures to improve diversity and representation. As a social institution, the media also encountered a couple of recent reckonings. The *#MeToo movement* exposed problems of sexual harassment across the media industry and pushed media outlets to address workplace concerns of women (Hollings, 2020; Testa, 2019). In the wake of the George Floyd killing in May of 2020, similar calls came to address anti-Black racism in journalism (Spinner, 2021).

As previously mentioned, it is not enough for a desire for change to come from the individual level, given established newsroom routines that must be overcome. The key may be developing new routines to encourage individuals to find ways to improve their source diversity. That will be the focus of the next section.

Measurement methodologies

The following section will review different methodologies and systems used to identify, classify and track the diversity of sources in news content produced by media outlets. This will help guide the design of my content analysis and survey instrument to evaluate my research question.

The BBC's 50:50 Equality Project

Ros Atkins, the host of the BBC TV program *Outside Sources* developed the BBC's 50:50 Equality Project in 2016 after driving home and listening to an hour-long BBC radio discussion that did not feature a single female guest (Chilazi et al., 2020). It was an example of a more significant problem. A year earlier, the Global Media Monitoring Project's analysis of the UK media outlets found women made up just 28% of sources, a decrease of 3% from its 2010 study (Global Media Monitoring Project, 2015). Working with his producers, Atkins began monitoring the percentage of male and female guests on his interview program. Within four months, it went from featuring 39% women to reaching a target of 50%. He and his team shared their methodology with colleagues, and the idea eventually spread to 80 units. At the same time, BBC senior management was facing public scrutiny over a gender pay scandal involving some of its top female journalists. To demonstrate a commitment to change, top BBC management embraced the 50:50 system, promoting it from an employee-led grassroots initiative to a corporate-wide initiative (Wittenberg-Cox, 2020). By April 2019, 500 shows were part of what was known as the BBC 50:50 Equality Project, with 74% of them hitting that gender-balanced target (Rattan et al., 2019).

Driving changes to journalistic routines

Shoemaker and Reese's *Hierarchy of Influences* framework can help understand the success of the BBC's approach. It is built upon the idea that measuring and publicizing the collective actions of individual employees can bring about organizational change. The initiative is set up so that each programming team can measure and track their own data using a simple methodology. They are encouraged to share the findings with staff during regular editorial meetings, giving them time to discuss ways to seek new voices and perspectives (BBC, 2021). This creates a feedback loop (Figure 2-2) within the model: an initiative at the *organizational* level creates new journalistic *routines* to measure sources that encourage journalists to make changes to their workflow at the *individual* level. This influences the creation of new *routines*, which can then affect *organizational*-wide results.

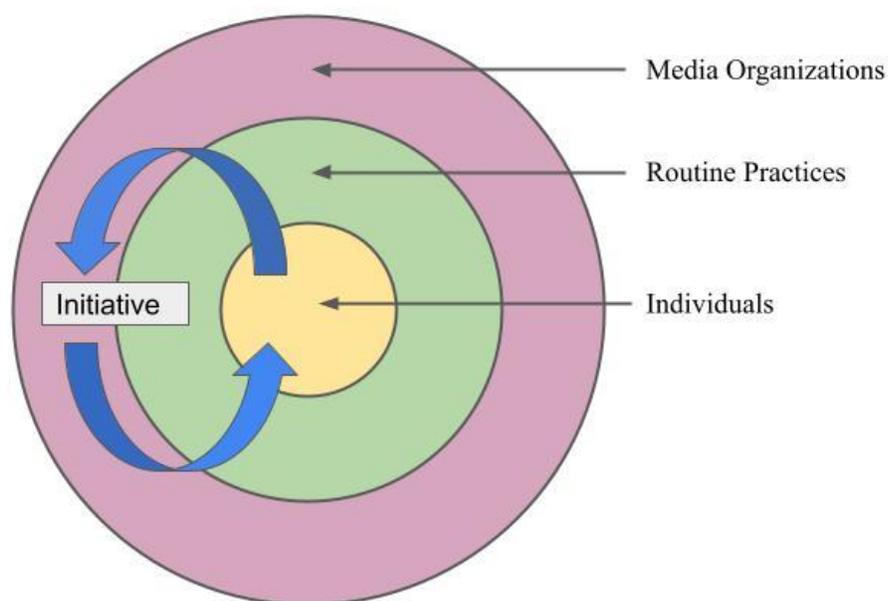


Figure 2-2: Feedback loop between the media organization and individual levels in Shoemaker & Reese's *Hierarchy of Influences* framework

It is also important to note that BBC management introduced this organizational change

in response to pressures at the social *institutions* level and broader calls to address gender inequality at the *social system* level³.

BBC's Measurement Methodology

Journalists are told that three goals drive BBC's measurement methodology: collect data to effect change, never compromise on quality, and measure what can be controlled (BBC, 2021). This sets it apart from more rigorous academic content analysis studies, which I will discuss shortly. The BBC methodology calls for staff to count everyone quoted or mentioned by name in a story, once per story, no matter how many times they appear. It encourages staff to seek out the most appropriate and most qualified guests at all times, regardless of gender. However, when it comes to measuring what can be controlled, the BBC makes a significant concession by setting aside a type of source it argues should not be included in any source counts. It defines "players" or "newsmakers" as people who are essential to the news of the day:

"For example, we do not count the Prime Minister when giving a speech or the only eyewitness to a bomb. We cannot tell the stories without these people, and we have no control over who they are. Everyone else counts – reporters, analysts, academics, experts, case studies and anyone who appears in our original journalism and features" (BBC, 2021).

This is a way of correcting for journalists' reliance on routine newsgathering channels, which can predispose them to news from official sources like government proceedings, news releases, press conferences, and non-spontaneous events like ceremonies and speeches (Shoemaker & Vos, 2009, p. 54). However, this also has the effect of erasing those voices from the overall analysis and potentially "offsetting the gender imbalance effects of journalism's attraction to power," where generally, men hold power in society (Sjøvaag & Pedersen, 2019).

This carve-out was also included to address concerns that journalists might feel pressure

³ With the BBC now sharing its measurement system with other media outlets, it may be trying to encourage a feedback loop between the *organizational* level and the *institutions* and *social systems* levels.

to influence the data being tracked by deliberately avoiding newsworthy stories because of the gender of their primary source. Knut De Swert and Marc Hoogh point out that journalists can easily improve the gender balance in their work by altering their editorial mix of stories to include more traditionally female topics. However, they argue it is more important to determine the biases in the news assignment process to counter the underrepresentation of women (2008, p. 24). The BBC's use of "players" or "newsmakers" obscures this.

The BBC has conducted pilot studies in some markets, expanding its methodology to include ethnic identity and disability (BBC, 2021). This opens the door to the possibility of conducting an intersectional content analysis, but it also would increase the complexity of collecting data and make it harder for programming units to benchmark their progress. Other researchers caution that "coding of demographics based on appearance does raise a host of methodological and ethical concerns" since definitions of race can vary among populations and social groups (Cukier, Elmi, et al., 2019). The BBC addresses this problem by only coding ethnic identity when publicly identified, such as on social media accounts (BBC, 2021), and by letting individual programming units set their own performance targets.

Academic Methodologies

The BBC methodology differs in several ways from other approaches used in academic content measurement studies. The Global Media Monitoring Project collects data as a snapshot in time, conducting worldwide content surveys on the same day. Others collect their data sets over months or even years (Swert & Hooghe, 2008). Many studies identify expert and non-expert voices and categorize stories by type and genre (Cann & Mohr, 2001; Vogler & Schwaiger, 2021), while others code for differences in format and market demographics (Humprecht & Esser, 2017). Some studies count the number of sources and their weight or importance in an

article by measuring the number of lines attributed to the source (Voakes et al., 1996). Other papers performed audits of newsroom content management systems to examine how stories and information were passed through the gatekeeping process (Lyons, 2002). Armstrong and Nelson used online response surveys to see if readers applied gender stereotypes to gender sources cited in articles (2005). These approaches involve the use of academic researchers: the BBC counts on working journalists to collect its numbers.

Some studies exclude entire categories of sources, much like the BBC does. A content analysis of Ontario provincial election coverage did not include political candidates "as frontrunners were often male and the large number of clips from those male leaders would skew the findings" (Barber et al., 2018, p. 3). A 2015 survey of women's voices in Canadian newspaper coverage deliberately omitted the *Toronto Star's* sports, business and entertainment sections amid concerns they would skew the results (Graydon, 2016).

Most academic content studies are done retroactively, with researchers pouring through data and then presenting their findings (Everbach et al., 2010). Other than the BBC system, I found few approaches that allowed for ongoing data collection and review by newsroom staff. Natural language processing is being used in some studies to automate the real-time identification of sources (Asr et al., 2021; Sjøvaag & Pedersen, 2019) by comparing them to a database of names or previously identified interviewees.

Other Newsroom Measurement Systems

Professional newsrooms are using a variety of approaches to conduct source diversity audits. Both TVOntario (Graydon, 2017) and the CBC have staff measuring content diversity and how sources are used (Fenlon, 2020). The *Toronto Star* and *The Globe and Mail* participated in pilot projects in 2019 to increase the gender diversity of their sources (Cabrera et al., 2020).

The *Canadian Press* and *The Chicago Sun-Times* both rely on local journalism students to perform content audits of their published material (Carleton University, 2022; Lu, 2021). Many journalists track their own efforts. Ed Yong, the science reporter at *The Atlantic*, wrote he started keeping tabs on his balance between male and female experts as "a vaccine against self-delusion," saying it prevents him "from wrongly believing that all is well" (Yong, 2018). The *New York Times*' Ben Casselman started tracking his sources in 2019, noting his stories are significantly more diverse when they aren't written on deadline:

"That suggests that I'm doing a good job searching out sources when I have time, but that under deadline pressure, I fall back on a core group of white guys" (Casselmann, 2019).

NPR developed an automatic program for its reporters called Dex (after Rolodex) that allows them to submit ethnic and demographic information about their sources. They can then generate electronic reports to monitor their source diversity measurements (Fu, 2021). Reports that look at the effectiveness of newsrooms that implement source diversity auditing encourage this move to automation (Bauman, 2021). Other audits encourage the collection of multiple variables to allow for intersectional insights. This allowed KUOW radio in Seattle, Washington, to realize it was over-representing Black sources in stories about arts, sports and racial justice (McKinley, 2021).

Student Newsrooms vs Professional Newsrooms

Humber College is not alone in tracking source diversity in student media. Results recorded by journalism schools at the University of Minnesota, Concordia and Michigan State suggest students may be closer than their professional colleagues in reaching a 50:50 gender balance (Cabrera et al., 2020; Content Diversity Board, 2020; Davenport & Grimm, 2021). None of the studies address why this may be the case.

There is little research to compare the gatekeeping decision-making processes in

professional newsrooms with those in journalism school newsrooms or classrooms (Farquhar & Carey, 2019). A comparison of student and professional TV journalists found that student journalists included more diverse voices (Smith, 2008). However, this study did not gauge whether student perspectives on inclusion were responsible or if the demographic makeup of their campus made it more conducive to finding diverse sources. Professional journalists have the advantage of well-connected networks of official sources (Zoch & Turk, 1998), something student journalists have not had the time to develop. Students' openness to seeking more diverse sources may result from not being able to rely on the same established names repeatedly (Haney & Paskey, 2020).

While student publications can try to replicate the dynamic of a working newspaper, few can match the same deadline pressures (Joseph, 1999, p. 79). Larger papers have more resources and may foster competition among reporters to publish the best-sourced articles: smaller papers rarely discard news stories (Lyons, 2002). Student media outlets face an additional burden: faculty must balance daily reporting needs with pedagogical instruction. In order to provide a portfolio of published material, student editors may fine-tune stories but rarely cut or kill them.

The literature suggests that any findings into the effectiveness of motivating student journalists to balance the gender diversity of their sources by sharing newsroom source diversity rates might not be replicable among professional journalists.

Summary

This literature review examined the extent of journalism's gender problem, researching structural causes for the under-representation of women and reviewing strategies to encourage greater diversity in sourcing. It summarized several source diversity audit methodologies and

reviewed theoretical frameworks for understanding their potential application in newsrooms. The literature revealed an over-representation of male voices is not limited to one or two media outlets but exists as an issue across the industry. It identified several ideas contributing to the problem, ranging from social pressures placed on female sources, gender stereotyping in newsrooms, journalistic norms that focus on traditionally male sources of power, and deadline pressures that influence individual reporter routines regarding researching and selecting sources. While this capstone research project is focused on gender representation, the literature explored other aspects of diversity in journalism, from editorial content to source professions, issues regarding ethnicity and intersectionality, and newsroom hiring and management practices. Shoemaker and Reese's *Hierarchy of Influences* framework was instrumental in helping me connect these ideas and recognize them as societal and social institutional issues affecting individual media organizations while also understanding how changes to individual reporting routines can influence how media organizations function. The theory also helped me focus my evaluation of the BBC 50:50 methodology at Humber College.

The literature review identified several gaps my evaluation could address. Much of the literature focused on academics or newsroom leaders conducting source audits. What is missing is how reporters respond to learning their source diversity rates are being measured. Few studies examine whether reporters change their behaviour upon learning about those measurements and whether those changes affect future measurements. The literature also suggests it may be necessary to consider differences between journalistic practices in professional newsrooms and educational settings.

My primary research question is concerned with determining how effective the regular sharing of source diversity rates is in getting individual student reporters to meet collective

newsroom source diversity objectives. The literature review also informed my research sub-questions:

RQ1: Did creating awareness of ongoing source diversity measurements change the ratio of male to female sources?

RQ2: Have student opinions about source diversity changed over the year?

RQ3: Did students change how they searched for interviews or sources throughout the study?

This points to the need to assess any changes to student journalists' attitudes and approaches towards gender representation in their reporting and evaluate their understanding of newsroom representation targets. It also requires tracking shifts in gender representation rates throughout the school year. The following chapter will discuss my methodology and research design for doing so.

Chapter 3: Research Design and Methodology

Professional journalists have a gender bias problem: female sources are not included in reporting at a rate that matches their share of the broader population. The BBC promotes an initiative it says can successfully address this under-representation by tabulating the ratio of male-to-female sources in stories a program or newsroom produces and then sharing the measurements with reporters (BBC, 2021). The rationale is twofold: first, by making individual journalists aware of a systemic imbalance, they may gain awareness of their own tendencies to under-represent women; second, any effort to shift their individual efforts may influence the overall newsroom measurements.

While many studies have looked at the root causes of this imbalance, few examine how journalists react to measurement systems. This capstone project looked at the effectiveness of the BBC's approach in an academic setting. It asked the question: will journalism student reporters change their approaches to finding interview sources if they are regularly informed of their student publication's progress towards an overall balanced ratio of male to female sources? It also poses the following sub-questions:

RQ1: Did creating awareness of ongoing source diversity measurements change the ratio of male to female sources?

RQ2: Have student opinions about source diversity changed over the year?

RQ3: Did students change how they searched for interviews or sources throughout the study?

To address RQ1, I conducted a content analysis of their published stories using the BBC methodology to track source diversity rates. I addressed all three sub-questions by administering

pre-and-post surveys to student reporters to measure attitude changes towards source diversity and whether they changed their reporting routines. In this chapter, I will explain my study design and its participants and provide details of the instruments, procedures, and analysis for both the content analysis and surveys.

Design

This study used a two-part strategy to address its research question. The first part was a 25-week content analysis of articles published to Humbernews.ca, the news website produced by Humber College journalism students in Toronto. Content analysis is used to quantify the content of texts (Denscombe, 2021, p. 338). This study used a coding scheme based on the BBC 50:50 methodology to track the gender of interview sources and photo subjects in stories published from September 26, 2021, to April 22, 2022. Rather than collecting data from a single day (Global Media Monitoring Project, 2021a), this approach allowed me to compare the ratio of male-to-female sources every week and analyze if any changes to the levels may correlate to interventions where students were made aware of those measurements.

The second part of the study was a pre-and-post online survey of student reporters. I administered the initial survey in the fall term before students learned I was conducting a content analysis of their reporting. The survey was not designed to change their attitudes or provide information about the measurement tool (Denscombe, 2021, p. 211). Instead, it measured student attitudes around media diversity and reporting practices⁴. The post-test was administered in the winter term after they had been made aware of my measurements for 11 weeks. Pre and post-tests can be used to measure changes in student attitudes (Simon & Sapp, 2006) due to

⁴ After completing the first survey, students were given access to a 17-minute online lesson that explained the BBC 50:50 methodology in detail.

learning about the BBC approach. It is recognized as a legitimate way to measure what students learn (Hufford, 2010).

I used a survey because it is a cost and time-efficient tool to collect student data. The delivery is standardized, allowing me to repeat questions in both surveys (Denscombe, 2021, p. 67). It also allowed me to separate myself from direct interaction with respondents, removing potential researcher bias or influence. Since student participation was voluntary, I raffled off twenty-five Tim Horton gift cards for students who completed the survey since material incentives can increase response rates (Denscombe, 2021, p. 63).

Setting

The research study focused on online stories written by student journalists representing three grade levels: 2nd and 3rd-year students in Humber's Advanced Diploma program and post-grad students in Humber's Graduate Certificate program. As a journalism professor, I chose to study student journalists instead of professional journalists, given my access to them and a shortage of research into editorial decision-making in journalism schools (Farquhar & Carey, 2019). Complicating my study were the different pedagogical goals stressed in the different grade levels. In the fall term (September 7 to December 17, 2021), 3rd-year students served as student editors, supervising content produced by 2nd-year reporters who filed stories weekly. Post-graduate students were not yet reporting. The dynamics shifted in the winter term (January 10 to April 22, 2022). 2nd-year and post-graduate reporters contributed to the website weekly. The 3rd year students were required to file stories daily, which replicated deadline pressures faced by professional journalists (Joseph, 1999, p. 79).

Given the small size of classes and the reporting structure for Humbernews.ca, it was not

possible to adopt a quasi-experimental approach (Davenport & Grimm, 2021) where I might compare results with a control group of students who were not exposed to the content measurement system. Control groups in surveys are rare (Goyanes & Serra, 2016). While this study focused on measuring the BBC methodology, future studies could review the effectiveness of alternative methodologies (Cabrera et al., 2020) or systems where students self-report their diversity measurements (Cabrera et al., 2020; Davenport & Grimm, 2021).

Participants

Humber journalism students are required to write stories for the Humbernews.ca website as part of their class assignments. For the pre-survey, I compiled names from class lists for three reporting classes (one for each grade level) and identified 63 potential students. I repeated this procedure for the post-survey, identifying another 63 potential students. However, only 44 students were in classes in both terms due to enrollment changes. Since the survey did not track personally identifiable information, I could not establish a direct correlation between individual student results in the pre and post-tests.

Ethics Approval

Ethics and institutional research approval were provided by the Humber College (Appendix M) and the University of Alberta research ethics boards (Appendix N). Most concerns during the review focused on my dual role as researcher and instructor. I built steps into the survey process to minimize potential influence or bias since students were familiar with me as an instructor in other courses. No personally identifiable information was collected, and students were assured they were not obligated to participate and could withdraw their consent at any time up until the survey was submitted. Students were given ten minutes of class time to fill out the

survey.

The Humber College research ethics board also wanted me to design the gift card raffle so that I would never know which students entered, addressing any concerns of bias or favourable treatment. I arranged to have a colleague not connected to any of the research handle the collection of names and awarding of prizes. She agreed not to share any information concerning participants with me.

I was required to file amendments to my proposals in December 2021. Due to staffing changes mid-year, I was assigned to teach one of the daily reporting classes for 3rd-year students in the winter term (along with two other instructors). Since I was in a direct supervisory position, I could not administer the survey to those students. To address this problem, I had another faculty member act as a research assistant. He emailed students and administered the survey on my behalf when I was not present in the classroom.

Content Analysis

To conduct a count quantitative content analysis of student articles, I used NVIVO. It is a software package that let me import articles, highlight the names of sources, and then assign codes and categories which the program could later tabulate (see screenshot in Appendix O). I trained on the software by sampling articles from the previous year to test my coding scheme and ensure I was able to generate useful data.

Instrument

I created a coding scheme to reflect the BBC methodology, setting up nine code categories to track sources, newsmakers and photos by gender (male, female, non-binary) each

week for 25 weeks (see Appendix C). Coding for grade level and gender of reporters allowed for comparisons between student groups. To generate additional data for use in my teaching instruction, I went beyond the BBC methodology and also created code categories to track sources, newsmakers and photos by ethnicity or group identity (white, Black, Asian, South-Asian, middle-eastern, Muslim, Latinx, Indigenous, transgender and unknown). Furthermore, I also created code categories to track the professional status of a source such as student, academic, business owner, police, politician, athlete, spokesperson, manager, and artist (see Appendix G). This coding for multiple variables (McKinley, 2021) allowed my analysis to move beyond just analyzing gender and applying a more intersectional breakdown of the reporter's use of sources⁵.

Content analysis requires an appropriate sample of texts and relevant indicators (Denscombe, 2021, p. 338). Analyzing the 768 published stories over 25 weeks allowed me to compare results over time. I could address my research question by measuring whether the ratio of male to female sources changed once students knew their results were being monitored or if the results changed as students learned about the results and developed more skills for diversifying their sources.

Procedure

I subscribed to the Humbernews.ca RSS feed to receive a notification each time a new story was published, then used a browser plug-in for NVIVO to capture a PDF for analysis. As I imported those documents into NVIVO, I categorized them in a simple folder structure by the week of publication and grade level. Using NVIVO, I analyzed each story and coded sources, newsmakers and photos. To identify a source's gender I relied on the reporter's use of pronouns.

⁵ This produced additional data outside the scope of the research questions in this capstone project. The preliminary results are explored in Appendix B.

When unsure of the source's gender or ethnic identity, I would rely on publicly available information such as social media profiles (BBC, 2021) or check with the student reporter.

Following the practice from other content measurement surveys (Cukier, Jackson, et al., 2019), if I could not determine a source's ethnic identity, I labelled them as "unknown." I kept an ongoing diary to track observations (Denscombe, 2021, p. 168).

After administering the first survey in the fall term, I used a 3rd-year student editor to help me track results. This introduced intercoder reliability by comparing whether both of us would make the same coding decisions (Lombard et al., 2002). I discovered some discrepancies between our efforts, but an investigation revealed this wasn't due to differences in interpretation but to misclassification errors. The student did not fully understand how to apply the BBC's definition of "newsmaker" or "player" to exclude some results (BBC, 2021). As a result, our numbers differed for several weeks until he understood the methodology. I could not use an assistant in the winter term since the three courses involved in the study did not employ student editors. Instead, I used a test-retest method to cross-check previous codes assigned to sources in NVIVO to ensure a consistent application of the methodology.

Analysis

After performing the weekly content analysis in NVIVO, I ran a matrix coding query search comparing my various gender and source diversity codes. I then entered this data into a spreadsheet for analysis. This let me track the number of stories covered, the number of sources tracked, and calculate the ratio of male to female to non-binary sources, newsmakers and photos. Once students completed the pre-survey, I emailed the previous week's results to faculty every Monday morning so they could start sharing the results.

To further my research, I also used NVIVO to run analysis beyond the scope of the BBC

methodology (as such, I did not share these results with students). I combined the sources and newsmaker categories to indicate gender representation across all published stories. I also calculated weekly totals for stories filed by 2nd-year, 3rd-year and post-grad students and tabulated those in separate spreadsheets. That data allowed me to compare results to see how each grade level contributed to the overall newsroom performance. It was helpful in determining how the daily deadline pressures faced by 3rd-year reporters affected their results.

Although I shared the results with students weekly, I had concerns about comparing results week to week since news agendas can swing, and the proportion of stories can shift the balance. The BBC recommends using monthly analysis for comparison (Chilazi et al., 2020). My initial plan was to compare the results from four periods: before and after the pre-survey and before and after the post-survey to see if the intervention of the questionnaire influenced newsroom performance.

Pre and Post-Survey

Instrument

I used SurveyMonkey to administer both pre-and-post surveys consisting of Likert-scale questions with sections devoted to gender balance in media and reporting routines. The gender balance section established students' assessments of how well the media they consumed achieved a 50:50 gender balance. It also measured their attitudes towards content and staffing diversity. Two sections aimed to assess students' use of reporting routines. One asked students what type of research they were most likely to employ to find sources when assigned a story, such as reviewing previously published material or searching social media. The second section asked about students' comfort in finding diverse sources. I wanted to see if there were noticeable

differences in attitudes between the pre and post-surveys. The post-survey added an additional section asking about the newsroom's progress towards a 50:50 gender balance. This was to establish whether awareness of results was effective in changing reporter routines. Both surveys also collected demographic information such as participants' gender and grade level to compare against the content analysis of HumberNews.ca. Appendix K and L include a full listing of questions in both surveys.

I chose to administer pre and post-surveys instead of conducting focus groups to limit my contact with students and address ethical concerns that my role as the instructor might influence their participation. Pre and post-test surveys are an effective measure of student learning in an academic program (Hufford, 2010; Weir, 2010). Their use can allow for cross-sectional studies comparing student performance at different points in time (Curtis & Redmond, 2009). This is essential to measure whether the regular reporting of source diversity rates affects students' journalistic choices. Surveys allow for collecting demographic details of subjects, which can be necessary for interpreting results (Curtis & Redmond, 2009).

Procedure

The pre-surveys were administered on November 4, 2021, before students learned about the BBC 50:50 methodology and their newsroom's source diversity goals. A few days before receiving the survey, students were sent introductory emails explaining the rationale for the study and explaining ethical considerations (Curtis & Redmond, 2009). On the survey day, reminder emails were sent, and I attended each class in-person to answer questions and provide students with a QR code and link to the survey. On average, the survey took under four minutes to complete.

After administering the pre-survey to my first class, I noticed a formatting error. One

question required students rank-order their answers rather than assess their likelihood of using each option I presented. As a result, I had to delete my initial results, fix the survey and re-administer it to the affected students, which led to a drop in participation the second time. Fortunately, the problem was fixed before other classes took the survey.

Students were notified of the follow-up survey in advance via email, and they were administered on February 18, 22 and 23, 2022. These were administered online since concerns about the latest COVID-19 variant meant reporting classes had to do remote learning for the first seven weeks of the winter term.

Analysis

The results of the pre-and-post surveys were exported from SurveyMonkey as CSV files, with numerical values replacing actual answer text. Running descriptive statistics analysis in Google Sheets and Microsoft Excel let me look for correlations in data by focusing on the means and distribution of answers. I looked for changes in attitudes between corresponding questions in the pre and post-surveys using one-way ANOVA tests and unpaired t-tests (Goyanes & Serra, 2016). Cross tabulating the respondent data allowed me to examine trends between grade levels and gender and compare them with findings from the content analysis.

The reliability and validity of pre-and-post tests depend on the questions asked (Hufford, 2010). When reviewing initial responses, I worried some of my questions may have been vague or too leading (Denscombe, 2021, p. 220), such as ones asking students about whether media outlets should reflect the interest of their audience. There was strong agreement from all students. I don't know if I should have expected a different response since audience engagement is a priority for online journalists (Posetti, 2018)⁶.

⁶ I later understood this response to be one of the most significant findings from the survey.

The response rate of the surveys raises questions of how representative the survey was of student opinions. Of the total number of students contacted, 60.3% of students completed the pre-survey, and 55.6% completed the post-survey. Participation depended on classroom attendance. When adjusted for students who attended class, 81.4% of students took the post-test. This also raises issues of predisposition bias (Goyanes & Serra, 2016). Students more engaged in class and supportive of achieving an equal gender representation may have been more likely to complete both surveys.

Summary

This study sought to understand whether student journalists would change their approaches to finding and including more diverse sources in their reporting if they were made aware of how their student publication was doing in achieving a balanced ratio of male and female sources each week. I designed a two-part study to explore this: a content analysis of 25 weeks worth of published student stories, and a pre-and-post survey to measure student attitudes and reporting strategies. The data allowed me to track the student's overall progress toward a 50:50 gender balance and gauge their interest in and commitment to achieving that goal. Given the modest response rates, conclusions from this research may have limited scope, but they still provide insight into editorial decision-making among student journalists. Differing pedagogical outcomes for participating classes may also influence performance, especially when the course design tries to simulate real-world deadline pressures.

The BBC describes its source diversity measurement methodology as “a simple system to effect lasting change on a large scale” (BBC, 2020). Whether Humber College achieved this using this system will be explored in the next section.

Chapter 4 - Findings and Discussions

Introduction

This chapter will present the findings of two surveys of Humber College journalism students, and a content analysis of 25 weeks worth of stories published on their student news website, Humbernews.ca. Each week, students learned how close their website was to achieving a goal set by faculty: a 50:50 balance of male and female sources. This research project explored whether regularly sharing source diversity rates encouraged student reporters to include more women in their stories (overcoming an industry-wide over-representation of male voices).

The study posed the following research questions to explore that problem:

RQ1: Did creating awareness of ongoing source diversity measurements change the ratio of male to female sources?

RQ2: Have student opinions about source diversity changed over the year?

RQ3: Did students change how they searched for interviews or sources throughout the study?

This project focused on how student journalists reacted to a source diversity measurement initiative developed by the BBC. It will rely on Shoemaker & Reese's *Hierarchy of Influences* framework to provide a theoretical basis to interpret the findings. Their model recognizes media ecosystems are complex and can be studied at multiple levels (Cukier et al., 2014) and that individual decision-makers, or gatekeepers, can exist at different levels within an organization (Roberts, 2005). Specifically, I looked to see whether the framework could anticipate a feedback loop forming, where the routine sharing of diversity rates changed individual reporting strategies, which in turn affected the diversity measurements, inspiring more reporters to follow suit.

I adopted a mixed-methods approach using content analysis and student surveys. The findings from the content analysis go beyond measuring whether students achieved a 50:50 gender balance. They also shed light on trends and differences between grade levels and genders. The findings from the pre-and-post survey help explore to what extent the initiative changed reporting routines and opinions.

This chapter will review the overall findings of the content analysis and the pre-and-post survey results for all students. It will then analyze the results by revisiting the three research questions and looking for gender and grade level differences. It will conclude with a discussion and summary of the findings.

Results

Content analysis

My content analysis looked at 768 stories published on [HumberNews.ca](https://www.humbernews.ca), the online website for journalism students at Humber College in Toronto. I tracked every story published between September 27, 2021, and April 24, 2022, recording the gender of sources in interviews and the gender of people featured in photos. The content analysis used a coding system I developed that followed the methodology set out in the BBC's 50:50 equality project (see Appendix C). After importing PDF screen captures of stories into the content analysis software NVIVO, I identified sources and coded their gender as male, female or non-binary, based on publicly identifiable information. I also recorded the gender of the reporter and the grade level of the student journalist.

The BBC's 50:50 methodology required me to exclude sources that might qualify as "players" or "newsmakers." I wanted to see how the results might differ if they were included,

so I created an additional coding scheme to identify the gender of players or newsmakers. In Appendix A, I explore how adding those to the overall count affected the gender balance. The BBC's 50:50 original methodology did not allow for intersectional analysis, so I created two more coding schemes to track sources' ethnic identity and professions. Those findings fall outside the scope of my research question, but I discuss the data in Appendix B.

Findings

After 25 weeks of source tracking, Humber students nearly succeeded in reaching a 50:50 gender balance. Of the 1,852 sources recorded, 886 identified as female, 951 as male, and 15 as non-binary, which amounts to 47.8% female, 51.3% male and .08% non-binary (Appendix D)⁷. This is considerably higher than the 31% Canadian industry⁸ average for women recorded by the Global Media Monitoring Project (Global Media Monitoring Project, 2021b).

I also broke down the content analysis by grade level and gender. As seen in Table 4-1, 2nd-year students came closest to reaching a 50:50 balance over the year, while 3rd-year students appeared to have more difficulty. Post-grad students were the only group of reporters to interview more female sources than male sources. However, as I'll explore later in this chapter, the different course learning outcomes and objectives faced by the different grade levels significantly influenced their performance.

Grade	Female sources	Male Sources	Non-binary sources
2 nd year	48.9%	50.2%	0.91%
3 rd year	46.0%	53.4%	0.60%
Post Grad	51.6%	48.1%	0.29%

Table 4-1: Gender balance by grade

⁷ Not all source-tracking systems include non-binary genders. When the 15 non-binary sources are removed from the analysis, the ratio shifts slightly to 48.2% female, 51.8% male.

⁸ The 31% represents subjects in all print, radio and TV news. The study found women made up 38% of Internet news and news tweets.

In terms of gender, female reporters filed 51.43% of all stories, while male reporters filed 48.57%. As Table 4-2 shows, female reporters were considerably more likely to include female sources in their stories than their male counterparts.

Reporter Gender	Story percentage	Female Sources	Male Sources	Non-Binary sources
Female (n=39)	51.43%	52.3%	46.6%	1.1%
Male (n=27)	48.57%	41.1%	58.6%	0.3%

Table 4-2: Gender representation by reporter gender

The total number of sources identified in photos ($n=846$) came closer to a 50:50 balance, with 48.9% female, 50.4% male and 1.4% non-binary.

Limitations

Results varied week to week based on the news agenda. I noticed reporters quoting more male sources around the time of the trucker convoy protest in Ottawa⁹. Photos also varied weekly, especially when major sporting events on campus featured men's or women's teams in the finals. The BBC advises that variations caused by the news agenda are to be expected (BBC, 2021).

Pre-post test survey

Pre-test details

The first student survey I conducted (pre-test) was administered via SurveyMonkey on November 4th to a potential audience of 63 students in three courses representing 2nd-year, 3rd-year and post-grad students. After removing four questionnaires that were either incomplete or where the students withdrew consent, I had results from 34 students ($n=34$), which lowered

⁹ I explore this in more detail in Appendix A

the response rate to 54%. Anything above 50% is considered acceptable, with responses approaching 60% considered a goal for most researchers (Fincham, 2008).

The pre-survey consisted of 27 questions, broken down into themed areas. The first 13 questions sought to establish a baseline of student attitudes towards the idea of gender diversity in the media they consume. Students were then asked what resources they used when searching for potential interviews. Finally, the pre-survey tried to establish a baseline for how easy or difficult they may consider finding diverse sources for their interviews. Students answered using a 5-part Likert scale, where five meant they agreed with a statement and one meant they strongly disagreed.

Post-test details

The second student survey (post-test) I conducted was administered via SurveyMonkey between February 17-22 to 63 potential students in three courses representing 2nd-year, 3rd-year and post-grad students. After removing one incomplete questionnaire, I again had responses from 34 students (n=34) for a response rate of 54%. Even though the number of students was the same, I did not consider this a paired sample due to student enrollment changes between terms. Since I did not track personally identifiable information during my survey, I cannot know how many students completed both the first and second surveys.

The post-survey repeated the 27 questions from the pre-survey. I designed eight additional supplemental questions to get specific feedback about the BBC's 50:50 initiative and whether it caused students to change their reporting behaviour. The complete list of answers for both the pre-and-post surveys can be found in Appendix F.

Presenting the survey results

For both the pre and post-tests, I exported data from SurveyMonkey in spreadsheet form. I used Google Sheets and Microsoft Excel to tabulate the results and calculate the measures of central tendencies to generate data profiles (Denscombe, 2021, p. 294). After reviewing the means and standard deviations and performing initial ANOVA and t-tests on the data, I realized I needed a more concrete way to compare the answers. My solution was to use a “yes percentage” measurement by calculating the percentage of responses in the last two categories of the Likert scale that correspond to an agreement (agree and strongly agree). Researchers found an extremely high correlation between Likert mean scores and the yes percentage and argue it offers a more meaningful assessment of how strongly a measured attribute is expressed in a population (Marks & Bubeliene, 2019, pg 17). Calculating a yes percentage made identifying areas of agreement or disagreement easier and will be used to discuss survey result findings.

Views towards gender balance in professional media outlets

The first six questions in both pre-and-post surveys (Table 4-3) explored whether students thought the professional news outlets they consumed reflected an equal balance of male and female interview sources. Students felt sports (Q2) and business stories (Q4) had a gender bias issue, with just 14.7% and 20.6% of students in the pre-survey agreeing those story genres produced balanced content. By comparison, most students found entertainment (Q3) and lifestyle stories (Q 5) featured an equal balance of male and female sources. Just slightly more students (44.1%) thought Humbernews.ca was doing a better job of balancing male and female stories than general professional media outlets (Q6). The post-surveys found similar results.

Question	Pre-Test Yes Percentage	Pre-Test Mean/ SDV	Post-Test Yes Percentage	Post-Test Mean /SDV
Q1: In terms of general news stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	38.2%	M=3.206 SD=0.880	38.2%	M=2.971 SD=1.087
Q2: In terms of sports stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	14.7%	M=2.294 SD=0.970	11.8%	M=2.118 SD=1.038
Q3: In terms of arts or entertainment stories, I think the professional media outlets I consume have an equal balance of male and female interview sources.	61.8%	M=3.588 SD=0.892	55.9%	M=3.412 SD=0.925
Q4: In terms of business stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	20.6%	M=2.529 SD=0.929	17.6%	M=2.412 SD=0.925
Q5: In terms of lifestyle stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	50.0%	M=3.324 SD=1.007	52.9%	M=3.382 SD=0.888
Q6: I think the stories produced by Humbernews.ca have an equal balance of male and female interview sources	44.1%	M=3.529 SD=0.896	73.5%	M=3.853 SD=0.702

Table 4-3: Pre-post survey questions 1-6

When comparing the results by gender, there was a significant difference in male and female perceptions of business stories, which is a beat traditionally considered to be more “hard” news (Macharia, 2015; Rao et al., 2021). Male reporters were more likely than female reporters to think professional media outlets present an equal balance of male and female experts in business stories (Table 4-4).¹⁰

¹⁰ The pre-test showed a significant difference between male answers (M=3.083, SD=1.084) and female answers (M=2.264, SD=0.733); $t(29)=2.045, p=.017$. The male answers were more in line with female answers in the post-test (M=2.266, SD=0.961) showing a significant shift in opinion; $t(25)=1.708, p=.024$.

Gender	Pre-Test Yes Percentage	Post-Test Yes Percentage
Male reporters	41.7%	13.3%
Female reporters	10.5%	23.5%

Table 4-4: Q4-In terms of business stories, I think the professional media outlets I consume have an equal balance of male and female interview sources.

Several answers suggested that 2nd-year journalism students had a very poor regard for how well professional media outlets present an equal balance of male and female stories. Of the first five questions in the pre-survey dealing with gender balance in different genres, the yes percentage for 2nd-year students was consistently the lowest of the three grade levels.

Pre-survey question	2nd year	3rd-year	Post-Grad	Overall
Q1: In terms of general news stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	9.1%	83.3%	40%	38.2%
Q2: In terms of sports stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	0%	33.3%	13.3%	14.7
Q3: In terms of arts or entertainment stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	45.5%	83.3%	53.3%	61.8%
Q4: In terms of business stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	9.1%	66.7%	13.3%	20.6%
Q5: In terms of lifestyle stories, I think the professional media outlets I consume have an equal balance of male and female interview sources.	36.45	66.7%	46.7%	50%

Table 4-5: Pre-survey questions 1-6 broken down by grade level

They were particularly low compared to the answers from 3rd-year students, who tended

to have more optimistic views about the levels of gender source balance in the media they consumed.

Views towards reflecting diversity in media content

The next set of questions looked at student attitudes towards the ways media outlets can reflect the diversity of their audiences (Table 4-6). The results showed overwhelming support for

Question	Pre-Test Yes Percentage	Pre-Test Mean/SDV	Post-Test Yes Percentage	Post-Test Mean /SDV
Q7: I think the stories presented by a media outlet should reflect the interests of its audience	85.3%	M=4.069 SD=0.851	82.4%	M=4.059 SD=0.736
Q8: I think the stories presented by a media outlet should challenge the interests of its audience	82.4%	M=4.000 SD=0.888	76.5%	M=3.853 SD=0.989
Q9: I think media outlets should have stories that reflect the diversity of their audience	100%	M=4.706 SD=0.462	97.1%	M=4.706 SD=0.524
Q10: I think media outlets should have reporting staff that reflect the diversity of their audience	94.1%	M=4.676 SD=0.589	94.1%	M=4.647 SD=0.597
Q11: I think media outlets should talk to interview sources that reflect the diversity of their audience.	94.1%	M=4.647 SD=0.597	88.2%	M=4.500 SD=0.788
Q12: I have an understanding of who makes up the audience for Humbernews.ca	76.5%	M=3.882 SD=0.880	76.5%	M=3.971 SD=0.834
Q13: I think media outlets should try to reflect an overall 50:50 balance of male to female sources in their reporting. (post-test only)	n/a	n/a	82.4%	M=4.176 SD=0.716

Table 4-6: Pre-post survey questions 8-13

the idea that reporters and interview sources should reflect their audience's diversity. Question 9,

which asked whether stories should reflect the diversity of the audience, generated a 100% yes rate, with 70% of respondents choosing the highest measure on the Likert scale to strongly agree with the statement. The post-test answers showed slight decreases in the yes-percentage, except for question 10, which showed the same strong support (94.1%) for media outlets to have reporting staff that reflect the diversity of their audience, and for question 12 which asked students whether they understood who made up the audience for Humbernews.ca. The post-test added a supplemental question asking whether students thought media outlets should try to reflect a 50:50 gender balance in their reporting (Q13). An overwhelming 82.4% of students supported the idea across all grade levels, with none opposing it.

Searching for contacts (with and without assistance)

The next group of questions measured how students approached researching a story and finding potential interviews (Table 4-7). I wanted to establish a baseline of understanding to see if the students might change their approach to looking for sources as they became aware of the gender balance of their reporting. The results showed, perhaps not surprisingly, that when first assigned a story, students conduct research on the internet (100%), with most Googling for potential names (Q16). Fewer students seem inclined to use social media to search for names, with LinkedIn being the least popular (Q19). Just 52.9% said they would consult an online expert guide (Q23), which many organizations use to encourage source diversity (Everbach et al., 2010). The low scores for these answers may be a function of new student journalists still learning various techniques for finding potential sources. The post-survey showed an increase in the yes percentage in most answers, except for question 22, which asked about asking a classmate for help finding an interview.

When you are assigned a story, which of the following things are you likely to do:	Pre-Test Yes Percentage	Pre-Test Mean/SDV	Post-Test Yes Percentage	Post-Test Mean /SDV
Q14: Search online for more information about a story	100%	M=4.882 SD=0.327	100%	M=4.794 SD=0.410
Q15: Check existing stories by other media outlets for potential interviews	82.4%	M=4.265 SD=0.989	88.2%	M=4.559 SD=0.705
Q16: Google names for potential interviews	91.2%	M=4.588 SD=0.734	94.1%	M=4.706 SD=0.879
Q17: Check Twitter for potential interviews	67.6%	M=3.912 SD=0.965	73.5%	M=4.029 SD=0.969
Q18: Check Facebook/Instagram for potential interviews	58.8%	M=3.647 SD=1.368	61.8%	M=3.618 SD=1.101
Q19: Check LinkedIn for potential names	52.9%	M=3.235 SD=1.350	61.8%	M=3.706 SD=1.219
Q20: Call someone and ask for help in identifying potential interviews	52.9%	M=3.324 SD=1.065	61.8%	M=3.706 SD=0.871
Q21: Check with a professor for advice in identifying potential interviews	64.7%	M=3.676 SD=1.147	73.5%	M=3.912 SD=0.900
Q22: Check with a classmate for advice in identifying potential interviews	79.4%	M=3.853 SD=1.019	64.7%	M=3.706 SD=1.001
Q23: Consult an online experts guide to identify potential interviews	52.9%	M=3.353 SD=1.346	70.6%	M=3.912 SD=1.311
Q24: Add new contacts to a personal contact list	55.9%	M=3.588 SD=1.328	73.5%	M=4.000 SD=0.985

Table 4-7: Pre-post survey questions 14-24

Degree of difficulty when searching

Four survey questions asked about student confidence in finding people to interview (Table 4-8). In all answers, the yes-percentages increased between the pre-and-post tests. Two of the questions asked students if they found it difficult to find original or diverse sources. The

means and yes percentage for both questions were low in both the pre-and-post tests, but these questions also had higher standard deviations, implying less consensus among students. Both pre-and-post tests showed strong agreement with the sentiment that journalists should seek out the best source or interview regardless of gender or background. This answer shows agreement with one of the BBC’s main editorial rules for the 50:50 methodology: “the best contributor is always used, regardless of their impact on a team’s 50:50 numbers” (BBC, 2021).

Question	Pre-Test Yes Percentage	Pre-Test Mean/SDV	Post-Test Yes Percentage	Post-Test Mean /SDV
Q25: When assigned stories, I usually have a good sense of where I can go to find sources or interviews	67.6%	M=3.765 SD=0.855	73.5%	M=3.853 SD=0.702
Q26: I find it difficult to find original sources or interviews for my stories	32.4%	M=2.882 SD=1.066	41.2%	M=3.147 SD=1.184
Q27: I find it difficult to find diverse sources or interviews for my stories	44.1%	M=3.059 SD=1.127	47.1%	M=3.206 SD=1.067
Q28: Journalists need to pursue the best source or interview, regardless of their gender or background.	88.2%	M=4.382 SD=0.779	91.2%	M=4.441 SD=0.746

Table 4-8: Pre-post survey questions 25-28

Attitudes towards the BBC 50:50 methodology

The second survey (post-test) included a final set of questions to assess what students knew about the BBC 50:50 methodology and whether it influenced how they approached their reporting (Table 4-9). The numbers may appear to be contradictory at first. 73.5% of students indicated they understood how the system was being used to track source diversity (Q29), and 55.9% said they were satisfied with the gender balance of stories (Q35). Still, only 41.2% say

they were even aware of the ongoing measurement results (Q30).

Question	Pre-Test Yes Percentage	Pre-Test Mean/SDV	Post-Test Yes Percentage	Post-Test Mean /SDV
Q29: I understood how the BBC 50:50 measurement system was used to track source diversity on Humbernews.ca	n/a	n/a	73.5%	M=3.912 SD=0.830
Q30: I was aware of the ratio of male to female sources on Humbernews.ca because of regular measurement updates.	n/a	n/a	41.2%	M=3.324 SD=1.007
Q31: I made changes to how I searched for sources and interviews after learning about the latest measurement results for Humbernews.ca	n/a	n/a	41.2%	M=3.206 SD=0.880
Q32: I made different editorial choices on a story I was working on based on the latest measurement results for Humbernews.ca	n/a	n/a	36.4%	M=3.091 SD=0.879
Q33: I found it challenging to expand the range of people I consulted for my stories to include more male or female sources.	n/a	n/a	35.3%	M=2.971 SD=1.000
Q34: I made a personal effort to track the gender balance of my own stories.	n/a	n/a	50.0%	M=3.294 SD=1.001
Q35: I am satisfied with the gender balance of stories on Humbernews.ca	n/a	n/a	55.9%	M=3.559 SD=0.504

Table 4-9: Post survey questions 29-35

Half of students said they made an effort to track the gender balance in their own stories (Q34), and 35.5% admitted it was challenging to expand the range of people they consult (Q33). It isn't clear if the sharing of results altered reporting routines: just 41.2% said they changed how they looked for interviews (Q31), while just 36.4% said they made different editorial choices due to the measurements (Q32). It is also unclear how many reporters have to change their reporting

routines to shift the overall results.

Limitations with surveys

Despite the relatively high response rates, these results may have a student predisposition bias (Goyanes & Serra, 2016). Students who completed a survey about source diversity may have had the strongest feelings about the importance of source diversity. Students who disagreed with the concept might have opted not to complete the survey and thus not have their concerns expressed.

While I had already taken steps to eliminate questionnaires that had not fully answered the questions, I ran into additional problems sorting the data by grade or gender. Since I was careful about not collecting personally identifiable information, I gave students the option of choosing “prefer not to answer” when I collected gender and grade information. As a result, there were two tests I could not include in my gender and grade analysis, leaving me with a smaller sample size (n=32).

Data Analysis

The use of two different research methods required the use of different methods to analyze the data to answer my primary research question: how effective is the regular sharing of source diversity rates in getting individual student reporters to meet collective newsroom source diversity objectives?

Analytic Methods: Content Analysis

My 25-week content analysis recorded the genders (male, female, non-binary) of

interview sources in 768 stories published to Humbernews.ca. The first part of my data analysis involved looking for trends and patterns in those results to see if the percentage of the genders changed over time. To ensure construct validity (Denscombe, 2021, p. 324), I based my coding method upon the methodology used by the BBC (BBC, 2021) while adding additional coding measures to analyze the results by week, month, grade level and gender. Using paired t-tests, I looked for statistical differences between sample sets. To ensure intercoder reliability, I checked my work against the findings of a 3rd-year student editor in the fall term. I did not have the option of using a student editor in the winter term, so I conducted a test-retest reliability exercise (Potter & Levine-Donnerstein, 1999, p. 271). I chose 20 stories randomly from my dataset, then recoded them to check the reliability of my sample and the reproducibility of my findings¹¹.

Analytic Methods: Pre-Post Surveys

The second part of my data analysis involved looking for statistically significant changes between pre-and-post test answers using one-way ANOVA and unpaired t-tests in my Google spreadsheets. The t-test is particularly effective in small-scale research (Denscombe, 2021, p. 311), given the smaller sample sizes involved in comparing results between grade levels or genders. Analyzing smaller subsets of the data required me to sort the results, and this ran the risk of introducing administrative errors as data was copied between spreadsheets (Denscombe, 2021, p. 324). As I transferred numbers between tabs in my browser, I compared the means of samples and inspected the copied data against its source to ensure accuracy.

¹¹ My 20-story sample contained 29 female sources, 25 male sources, and 1 non-binary source. My initial re-test found 31 female sources. When I double-checked the results, I found I'd added two female politicians, quoted in a joint press release that I had not included in my initial count.

Content Analysis Findings

The content analysis was essential for addressing RQ1: Did creating awareness of ongoing source diversity measurements change the ratio of male to female sources? This required me to develop ways to analyze the data over time. Comparing results week to week was not valuable given the previously discussed concerns about the news agenda affecting story selection.

Comparing overall results by quarter

My first approach was to divide the content survey into four sections:

1. The first section covered the first seven weeks of the fall term, and I hoped it would serve as a benchmark for results. While I was monitoring the content diversity of student stories, they were not yet aware of the process.
2. The second section covered weeks 8-12 after the administration of the pre-survey. Students learned both about source tracking and that their content was being measured. I wanted to look for changes in the results due to this intervention (Dimitrov & Jr., 2003).
3. The third section covered the first six weeks of the winter term (weeks 13-18) when there was a change in courses and reporting responsibilities.
4. The fourth section covered weeks 19-25 after the administration of the post-test. I wanted to see if this intervention (which reminded students about the issues surrounding source tracking) would result in any measurable difference in students' efforts to reach a 50:50 gender balance.

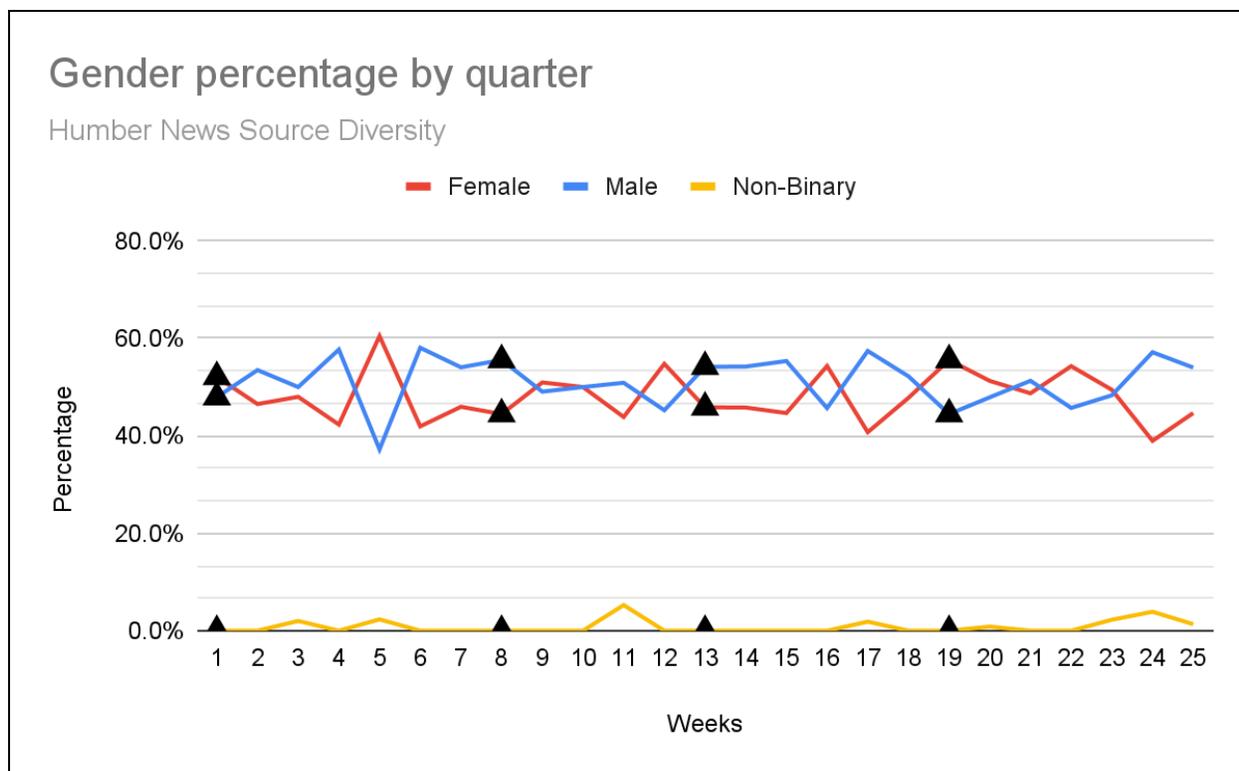


Chart 4-1: Gender percentage by quarter

A graph of the male, female and non-binary percentages (Chart 4-1) shows a back-and-forth throughout the year. Analyzing the averages over the four identified periods showed some encouraging trends. The first section, before any interventions, saw students achieve an average representation of 48.09% female sources and 51.32% male sources (n=341). Once students became aware of the measurements in the second section, there was a slight improvement: women 48.57%, men 50.2% (n=245). In the third section, when classes started in January, the numbers slipped, with women making up 46.23% of sources and males 53.42% (n=584). However, after the second survey, the numbers improved again in the final phase: 48.82% female and 50% male (n=682). However, when I performed 2-tailed t-tests to compare these results, none of the changes were statistically significant.

Comparing results month-to-month

My next approach was to break the results into smaller units and compare results month-to-month (Chart 4-2), an approach recommended by the BBC (Chilazi et al., 2020).

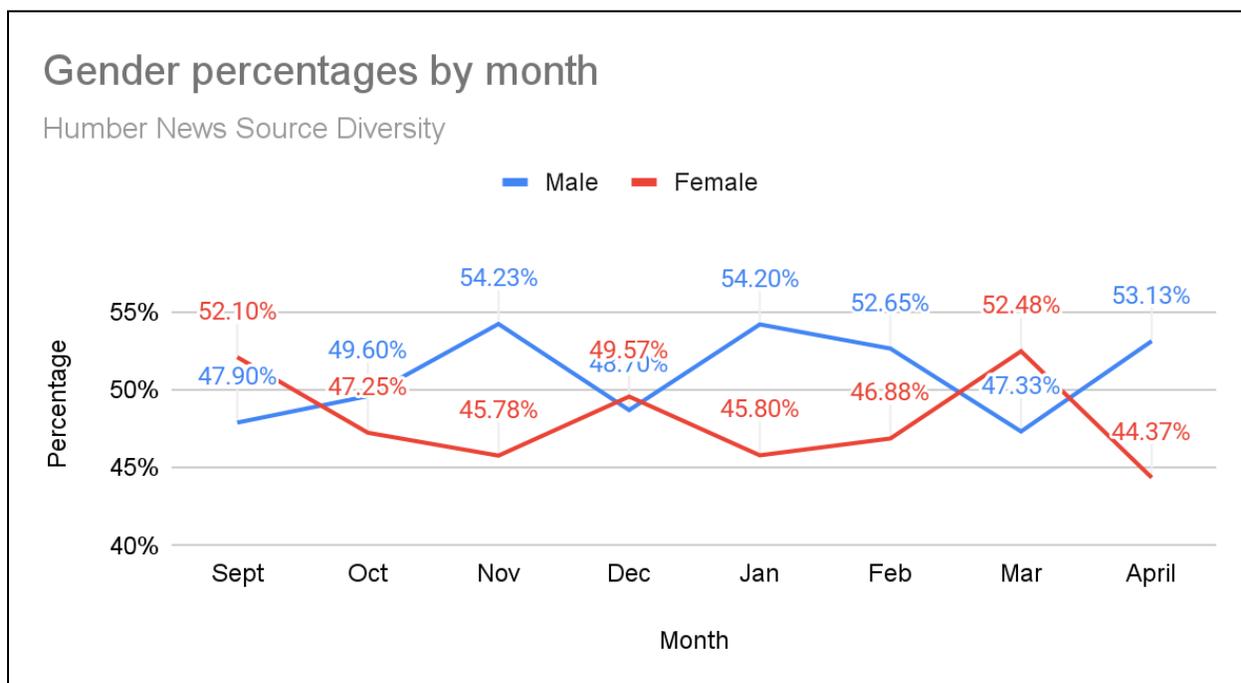


Chart 4-2: Gender percentage by month

This analysis showed the percentage of male sources increasing from September to November, with a gap of 8.5 percentage points between female (45.78%) and male (54.23%) sources in November. At this point, the first survey was administered, and students knew I was conducting my content analysis. The next month provides some evidence the ratio of female to male sources changed. Females accounted for 49.57% of sources in December, and males 48.7%. A two-sample t-test found a significant difference between the average of male sources in November ($M=0.5422$, $SD=0.038$) and December ($M=0.487$, $SD=0.031$); $t(5)=2.1$, $p=0.04$. This may be evidence that when students first became aware of the measurement numbers, they may have made more of an effort to seek out more diverse sources, thus reducing the percentage of

male sources.

However, the start of new classes and assignments in January led to a significant shift in the percentage of male sources from December ($M=0.487$, $SD=0.031$) to January ($M=0.542$, $SD=0$); $t(3)=2.353$, $p=.04$. The January and February averages showed the male and female numbers getting further apart. After students completed the second survey in late February, there were signs of improvement in the March numbers. A two-sample t-test showed a significant difference between the average of male sources in January ($M=0.542$, $SD=0.0$) and March ($M=0.473$, $SD=0.030$); $t(5)=3.04$, $p=0.01$.

Comparing results by Gender

Analyzing the results by gender showed that overall, there was a clear preference for reporters to seek sources corresponding to their own gender identity. Female reporters showed a greater preference to include female sources ($M=0.534$, $SD=.088$) than male sources ($M=0.453$, $SD=0.09$); $t(48)=2.010$, $p=.002$. Male reporters showed an even greater preference to include more male sources ($M=0.578$, $SD=0.076$) than female sources ($M=0.417$, $SD=0.079$); $t(48)=2.01$, $p<.001$. Since I did not code for story genre, I could not determine whether gender affected story genre preference, such as whether male reporters were more interested in filing political or sports stories, which traditionally over-represent male voices (Rao et al., 2021).

Comparing gender results month-to-month

To analyze whether male reporters or female reporters changed their percentage of male and female sources over time, I further separated my results into four categories: female reporters/female sources, female reporters/male sources, male reporters/female sources, and male reporters/male sources (see Appendix G). I performed a series of one-tailed t-tests comparing

results from month to month and found some evidence for slight changes.

Despite evidence showing a slight decrease in male sources between November and December, the data did not reveal this when broken down by gender (Table 4-10). The start of the new term did show a significant increase in the number of male sources used.¹²

Month	Female reporters - female sources	Female reporters - male sources	Male reporters - female sources	Male reporters - male sources
December	61.2%	35.7%	43.6%	56.3%
February	55.3%	44.1%	37.6%	61.9%

Table 4-10: Gender differences in gendered sourcing - December - February

Male reporters showed a significant difference in their representation of sources from December (Male-Female sources $M=0.436$, $SD=0.048$; Male-Male sources $M=0.563$, $SD=0.048$) to February (Male-Female sources $M=0.376$, $SD=0.027$; Male-Male sources $M=0.619$, $SD=0.024$); $t(5)=2.015$, $p=.04$. Female reporters also saw a change over the same period, but results from December (Female sources $M=0.612$, $SD=0.151$; Male sources $M=0.357$, $SD=0.097$) to February (Female sources $M=0.553$, $SD=0.115$; Male sources $M=0.441$, $SD=0.11$) did not show a statistically significant difference $t(5)=0.291$, $p=2.01$.

A comparison of the numbers between February and March, after the administration of the post-survey, appears to show male reporters improving their gender balance (Table 4-11).

Month	Female reporters - female sources	Female reporters - male sources	Male reporters - female sources	Male reporters - male sources
February	55.3%	44.1%	37.6%	61.9%
March	53.3%	46.6%	44.3%	55.1%

Table 4-11: Gender differences in gendered sourcing - February-March

¹² I chose a December to February time period because there were only 2 weeks in January when reporters were filing stories (2nd year students only worked one of those weeks).

However, I could detect no statistically significant change in the numbers, especially the change in male reporter/male sources from February ($M=0.619$, $SD=0.024$) to March ($M=0.551$, $SD=0.081$); $t(6)=1.94$, $p=.07$. This could be caused by the larger, eight-week sample size of data.

Differences between grades in the winter term

Differences between the learning outcomes of courses offered in the fall and winter terms made it difficult to compare results between grades. While post-grad students completed the pre-survey in the fall term, they did not start reporting until the winter term and thus didn't contribute any stories for the first 13 weeks. In the fall term (Table 4-12), most of the stories were filed by the 2nd-year reporting class, working under the supervision of 3rd-year students taking a course focused on editing and layout. 3rd-year students filed just 59 stories in the fall term, many of which were editorials (which contained very few sources). A full breakdown can be found in Appendix I.

Grade Level	Fall term stories	Female Sources	Male Sources	Non-binary sources
2 nd year	217	49.04%	50.16%	0.8%
3 rd year	59	39.68%	60.32%	0.96%
Post Grad	0	0	0	0

Table 4-12: Differences between grade level - fall term

Throughout the fall term, 2nd-year students maintained a fairly balanced ratio of male to female sources. I could find no statistically significant difference in their performance following the administration of the pre-survey other than to note that by December, their female sources had climbed to 50.87%. The 3rd-year students had far more varied results, given they were filing fewer stories and more editorials. There were some weeks when they quoted no female sources.

In the winter term (Table 4-13), the dynamic changed. Post-grad students began their reporting class. 2nd-year students continued to file stories but were no longer under the

supervision of 3rd-year students. The 3rd-year students took a daily reporting course that simulated the deadline pressures of a professional newsroom. Students were expected to pitch and write stories in just a matter of hours, making it harder to track down sources willing to be interviewed on such short notice.

Grade Level	Winter term stories	Female Sources	Male Sources	Non-binary sources
2 nd year	117	45.1%	53.3%	1.59%
3 rd year	227	46.7%	52.6%	0.66%
Post Grad	148	51.6%	48.1%	0.29%

Table 4-13: Differences between grade level - winter term

While measurements for the 2nd year students varied from week to week, I was not able to find any statistically significant variations from the start to finish, or before and after the post-test. When I graphed the variations from week to week, the trend lines for both female and male sources showed little change over the term (Chart 4-3). A full breakdown of all three grade levels can be found in Appendix J.

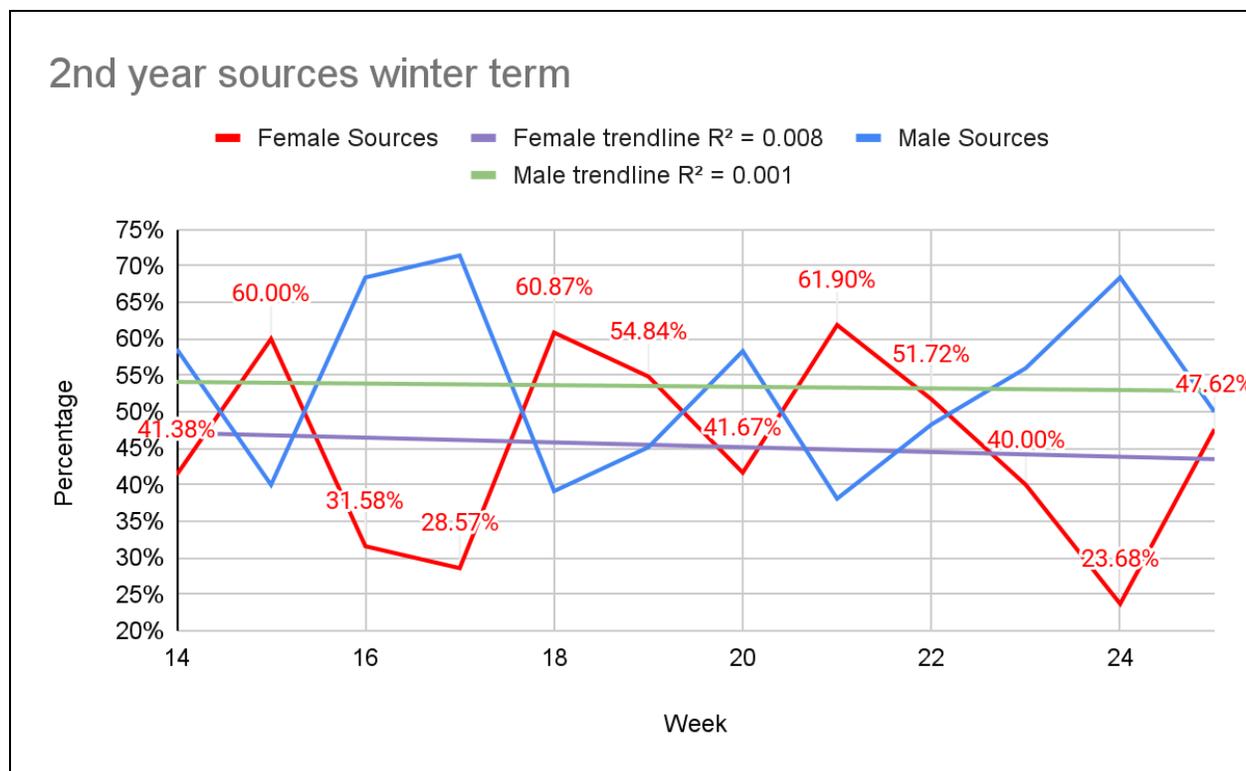


Chart 4-3: 2nd-year sources winter term

The trendlines for 3rd-year and post-graduate students showed opposite scenarios. The post-graduates started the term (and their reporting experience) with a gender balance of 73% female / 26.7% male and gradually reached a more balanced representation by the end of the term. Two graphs below (Chart 4-4) show the percentages of female and male sources over the term. Clear trend lines show the rate of female sources decreasing and male sources increasing. Post-graduate students learned about source tracking and the over-representation of male voices in November but didn't get the chance to do reporting until January. They may have started the winter term determined to seek out female sources and initially over-compensated. Over the term, the weekly updates about overall source diversity rates might have encouraged them to seek out more male sources to address that initial imbalance.

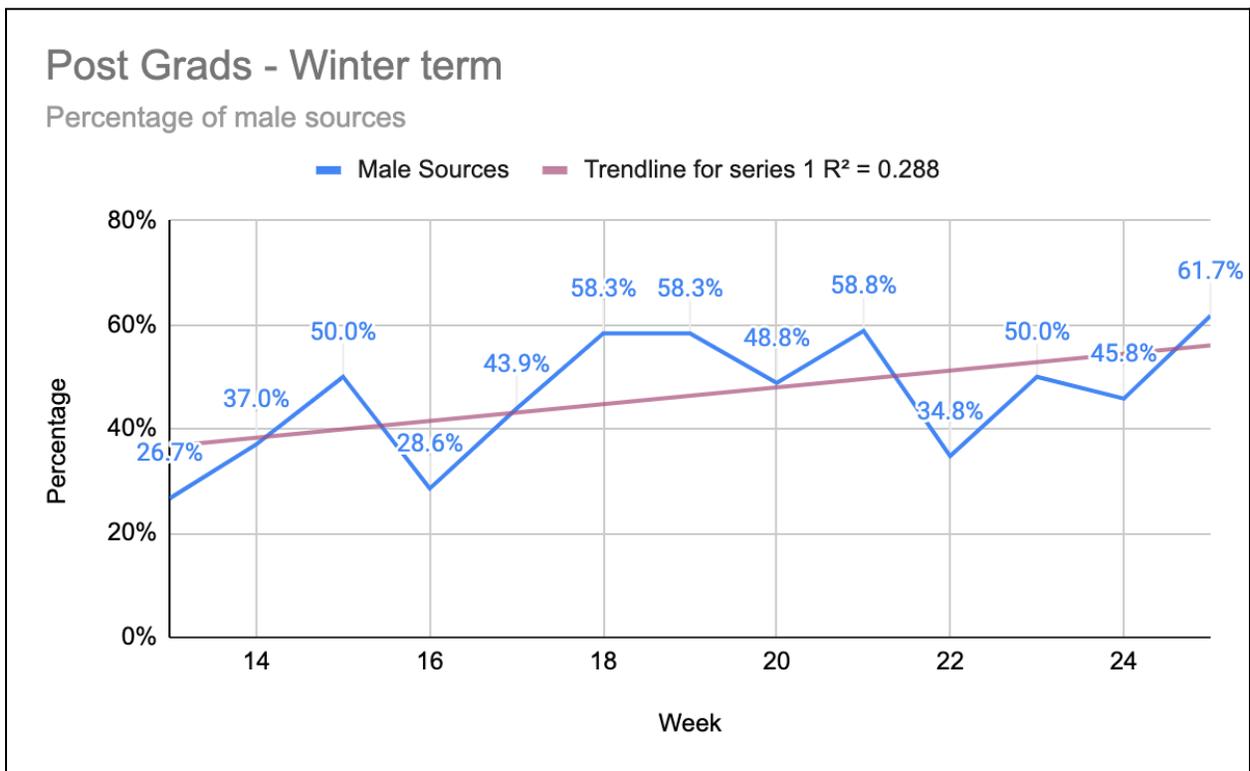
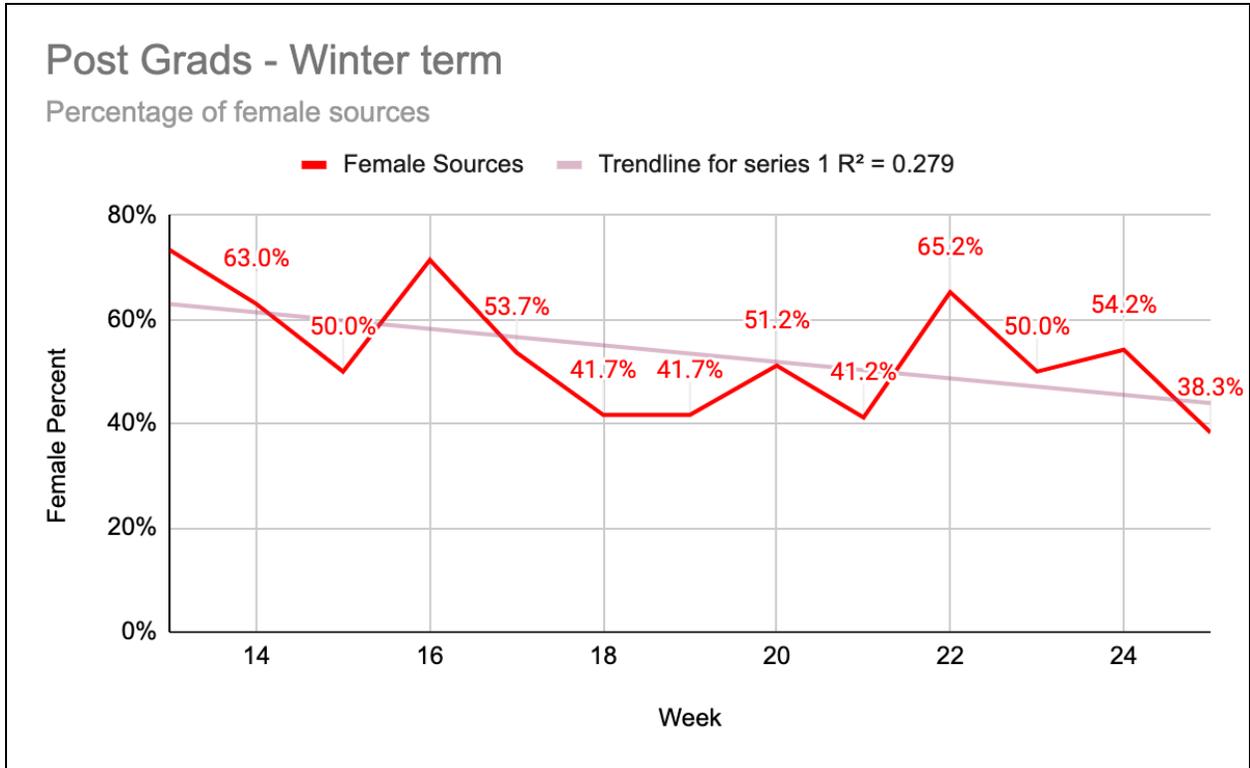


Chart 4-4: Post-Grads winter term - female sources (top) male sources (below)

3rd-year students presented a different trend. They started with a gender balance of 38.6% female, 61.4% male, and 0% non-binary, finishing the term with 47.5% female, 50.8% male, and 1.64% non-binary.

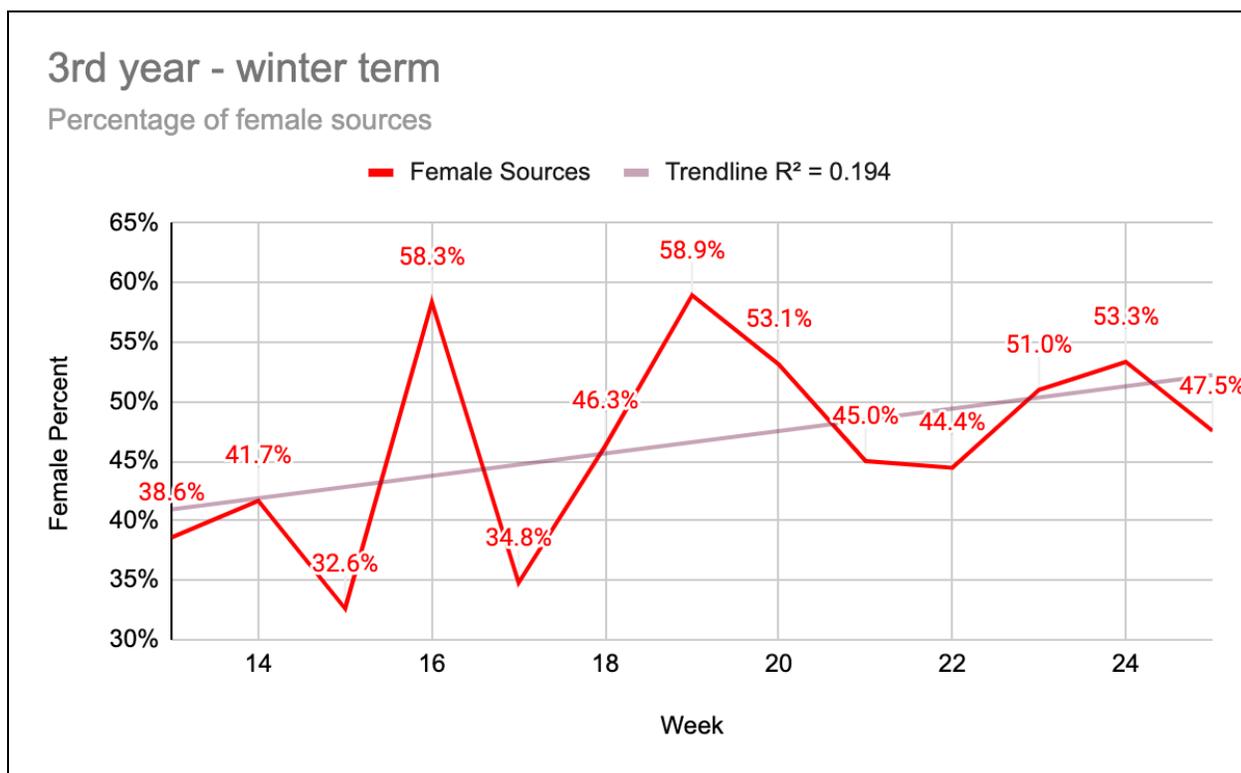


Chart 4-5: 3rd-year sources - winter term - female sources

Producing graphs of these results over the term showed clear trend lines that students were increasing their female representation (Chart 4-5) and decreasing male representation (Chart 4-6). 3rd-year students were the only students who faced daily deadline pressures. Their initial lower rates of female representation may result from the deadline pressures they faced in this class. This could provide evidence that as they learned of the feedback and regular reporting of source diversity rates, they adopted new techniques for broadening how they found sources.

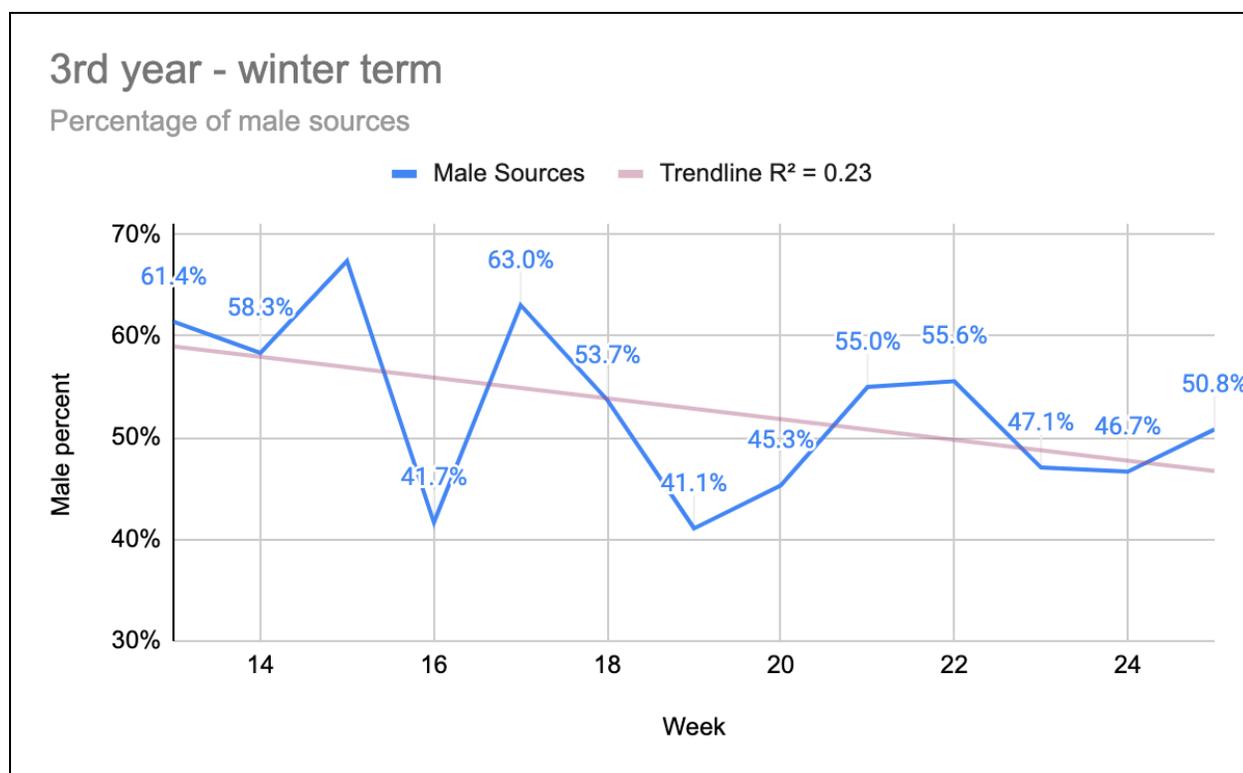


Chart 4-6: 3rd-year sources - winter term - male sources

While the trendlines in the charts suggested a change in the gender balance ratios over time, their R-squared values were low, indicating they may not be as reliable or accurate as R-square values closer to 1. However, studies of human behaviour generally have R-squared values less than 0.5 (Frost, 2018). Drawing conclusions from the data requires finding statistical significance. To do so, I compared measurements from the first three weeks of the term with measurements from the final three weeks (Table 4-14).¹³

Grade Level	Female sources Start of term	Female Sources End of Term	Male sources start of term	Male sources end of term
2 nd year	50.7%	37.1%	49.3%	58.1%
3 rd year	37.63%	50.6%	62.37%	48.2%
Post Grad	62.1%	47.5%	37.9%	52.5%

Table 4-14: Differences between grade level - start and end of winter term

The change in female percentages for 2nd-year students from the start of the term

¹³ 2nd year student did not report in week 13, so I only sampled weeks 14 and 15

($M=0.507$, $SD=0.132$) to the end of term ($M=0.371$, $SD=0.122$) was not statistically significant; $t(3)=2.353$, $p=.160$. The same held true for male sources ($M=0.493$, $SD=0.132$) over the course of the term ($M=0.581$, $SD=0.094$); $t(3)=2.35$, $p=.217$.¹⁴

A similar analysis held true for the post-graduate numbers, with no statistically significant change noted (Female sources $M=0.621$, $SD=0.117$; Male sources $M=0.379$, $SD=0.116$) over the term (Female sources $M=0.475$, $SD=0.082$; Male sources $M=0.525$, $SD=0.082$); $t(4)=2.131$, $p=.075$. However, the final few weeks of the winter term may not be an accurate measurement of post-grad performance. They filed 35 stories in the last week of the course, which was more than they filed in the previous three weeks combined. I attribute this to students facing an end-of-term deadline to file outstanding assignments for marking.

An analysis of the 3rd year students produced a different result. There was a statistically significant change in the percentage of female sources ($M=0.376$, $SD=0.046$) over the term ($M=0.506$, $SD=.029$); $t(4)=2.131$, $p=.007$. The same statistically significant change was seen in male sources ($M=0.623$, $SD=0.046$) over the term ($M=0.482$, $SD=0.022$); $t(4)=2.131$, $p=.004$. While there was an increase in the number of end-of-term stories filed in the final week of the term, these were long-form feature stories, not last-minute stories, where students had the chance to contemplate the sources they wanted, rather than settling for what they could get under deadline pressure

¹⁴ Initially this looked suspicious, considering the percentage of female sources had dropped to 37.1%. This may have been due to end-of-term pressures, where students handed in overdue assignments for marking. Also affecting these numbers were non-binary sources, which were not included in the chart above. In the final three weeks of the term, non-binary sources made up 4.76% of sources (until this point in the term, no non-binary sources had been interviewed)

Pre-Post Survey results

The pre-and-post surveys were designed to address the research question by establishing baseline measurements of student attitudes towards gender diversity in sourcing and reporting routines, and then measuring again after they were aware of their collective efforts towards reaching a 50:50 balance on Humbernews.ca. I will analyze the results of the surveys by revisiting the research questions.

Measuring awareness of source diversity measurements

RQ1 asks: Did creating awareness of ongoing source diversity measurements change the ratio of male to female sources. There are two parts to this question. The content analysis provided data for the second part, whether the ratio of male to female sources changed over time. The pre-and-post surveys help address the first part, whether students were aware of the ongoing measurements. The strongest evidence comes from question 6: “I think the stories produced by Humbernews.ca have an equal balance of male and female interview sources.” Before learning about the 50:50 initiative, 44.1% of students thought Humber’s interview sources were balanced. When asked again in the winter term, that rate was 73.5%. The change from the pre-test ($M=3.52$, $SD=0.896$) to the post-test ($M=3.85$, $SD=0.702$) was significant, $t(66)=-1.65$, $p=.05$. This is not surprising since students would have been hearing weekly updates about the ratio of male to female sources by this time in the school year. It is further supported by the response to question 29 in the post-survey. 73.5% indicated they understood how the BBC 50:50 system was being used to track source diversity on Humbernews.ca.

Yet those responses may be at odds with other findings. Just 41.2% of students indicated they were aware of the ratio of male to female sources because of the regular weekly

measurements (Q30). Just 55.9% said they were satisfied with the gender balance of stories on the student website (Q35). However, a breakdown by grade level shows the gender source tracking may have resonated most with 3rd-year students, who indicated they were more likely to be aware of weekly measurement updates and may have changed how they look for sources (Table 4-15). They were also the most satisfied with the website's overall gender balance of stories.

Question	Overall Yes Percentage	2nd-year	3rd-year	Post-grad
Q30: I was aware of the ratio of male to female sources on Humbernews.ca because of regular measurement updates.	41.2%	30%	60%	41.7%
Q35: I am satisfied with the gender balance of stories on Humbernews.ca	55.9%	30%	90%	58.3%

Table 4-15: Q30 and Q35 answers by grade level

There could be several reasons for this difference. As mentioned in the previous chapter, I was one of the 3rd-year reporting class instructors, so students in that class might have more closely followed the results because of my influence. I was also responsible for posting results to the class website each week, whereas other faculty may have verbally told 2nd year and post-grad students the results during their classes.

Changing opinions around diversity

RQ2 asks: have student opinions about source diversity changed over the year? There is little evidence to suggest there was a shift in student opinions. Attitudes in support of source diversity were already pretty high in the pre-survey. There was overwhelming support for question 9: “I think media outlets should have stories that reflect the diversity of their audience.” 94.1% of students agreed or strongly agreed with question 10: “Media outlets should have

reporting staff that reflect the diversity of their audience.” The same amount agreed with the statement in the post-survey. When asked if media outlets should talk to interview subjects that reflect the diversity of the audience (Q11), there was no statistically significant difference between the pre-survey (M=4.65, SD=0.597) and post-survey (M=4.5, SD=0.788); $t(66)=1.996$, $p=.388$. Likewise, I found no statistically significant differences in the first series of questions about gender diversity levels across different journalistic genres.

Changes to journalistic practices

RQ3 asked: Did students change how they searched for interviews or sources throughout the study? Questions 14-24 addressed this by asking students about various research techniques they might use to identify potential interview subjects. While most questions saw an increase in the yes-percentage between the pre-and-post answers, question 23 had the only statistically significant difference: in the pre-survey, 52.9% of students considered using online subject matter guides (M=3.353, SD=1.346) while the post-test had 70.6% consider their use (M=3.91, SD=1.311, $t(66)=-1.73$, $p=.043$).¹⁵ While more students in the post-test said they were confident about where they could go to find interviews, there was also an increase in students saying they had difficulty finding original or diverse sources.

There was a significant difference between male and female students when using social media to find sources. In the post-tests, female reporters (M=4.118, SD=0.993) were more likely to check Facebook or Instagram for names of potential interviewees (Q18) than male reporters (M=3.133, SD=1.060); $t(30)=2.042$, $p=.01$. They were also more likely (M=4.294, SD=1.047) than male reporters (M=3.067, SD=1.163) to consult LinkedIn (Q 19) for names of potential

¹⁵ To encourage source diversity, faculty shared the URLs for online university experts directories, along with interview guides featuring Muslim and female subject matter experts

interviewees; $t(30)=2.042, p=.003$. This greater willingness to consult social media when looking for sources may help explain why female reporters were more likely to interview female sources ($M=0.534, SD=0.088$) than their male counterparts ($M=0.417, SD=0.079$); $t(48)=2.01, p<.001$.

Breaking down the results by grade levels found few statistical differences among pre-and-post answers for 2nd year and post-graduate students. The 3rd-year students were another matter. At the time of the pre-survey, 3rd-year students had the most reporting experience (having completed the 2nd-year reporting courses the year before). Perhaps that explains the attitudes expressed in some of their answers. In the pre-survey, 3rd-year students were the least likely to indicate they might ask for help finding potential interviews (Table 4-16).

Question	2nd-year	3rd-year	Post-Grad	Overall
Q20: When you are assigned a story, which of the following things are you likely to do: Call someone and ask for help in identifying potential interviews	45.5%	16.7%	66.7%	52.9%

Table 4-16: Pre-survey Q20 by grade level

In the pre-survey, they also express more confidence in their abilities to find sources.

Question:	2nd-year	3rd-year	Post-Grad	Overall
Q25: When assigned stories, I usually have a good sense of where I can go to find sources or interviews	45.5%	100%	60%	67.6%

Table 4-17: Pre-survey Q25 by grade level

Their attitudes appear to have changed in the winter term when they were faced with daily deadline pressures to file their stories. In their post-survey answers to question 20, 60% indicated they might be open to asking for help ($M=3.9, SD=0.876$), a significant increase from their initial answer ($M=2.333, SD=0.816$); $t(14)=1.762, p=.001$. With question 25, they were also

less confident (70%) in their abilities to find interviews ($M=3.9$, $SD=0.738$) than they were in the fall term ($M=4.666$, $SD=0.516$); $t(14)=1.76$, $p=.02$. With question 26, more 3rd-year students admitted difficulty finding original sources in the post-survey ($M=3.8$, $SD=1.033$) than in the pre-survey ($M=2.5$, $SD=1.378$); $t(14)=1.76$, $p=.02$. When asked if they would check with a professor to help identify potential interviews (Q21), the yes-percentage was 100%, a significant change between their pre-survey answers ($M=2.833$, $SD=0.983$) and their post-survey answers ($M=4.3$, $SD=0.483$); $t(14)=1.761$, $p<.001$.

The fact that 3rd year students were more likely to be aware of weekly measurement updates might have influenced how they conducted their reporting. They were more likely than 2nd year or post-grad students to admit to changing how they searched for sources after learning about the latest gender balance numbers. They were also more likely to admit they found it challenging to expand their efforts to find diverse sources (Table 4-18).

Question	Overall Yes Percentage	2nd-year	3rd-year	Post-grad
Q31: I made changes to how I searched for sources and interviews after learning about the latest measurement results for Humbernews.ca	41.2%	40%	60%	33.3%
Q32: I made different editorial choices on a story I was working on based on the latest measurement results for Humbernews.ca	36.4%	44.4%	40%	25%
Q33: I found it challenging to expand the range of people I consulted for my stories to include more male or female sources.	35.3%	20%	50%	33.3%
Q34: I made a personal effort to track the gender balance of my own stories.	50.0%	50%	60%	41.7%

Table 4-18: Q31-Q34 by grade level

While the survey numbers appear encouraging, I could find no statistically significant

difference between the grade level responses.

Discussion of findings

As a journalism professor, I had a professional interest in the outcomes of this investigation. I want to ensure my students recognize the value of seeking out diverse sources and are responsive to the ever-changing demographics of their audience. When I learned the BBC was sharing its 50:50 Equality project with journalism schools, I signed up to be its first Canadian educational partner. I've helped to integrate the teaching of source diversity into the curriculum at my college. I've fielded questions from other schools about my experience. That helped inform the creation of my primary research question: how effective is the regular sharing of source diversity rates in getting individual student reporters to meet collective newsroom source diversity objectives?

In other words: does it work?

The short answer is: maybe.

Humber College students reached the goal of 50% female sources 10 out of the 25 weeks. The final balance (47.8% female, 51.3% male, 0.8% non-binary) is well above the figures achieved in professional newsrooms (Global Media Monitoring Project, 2021b; Informed Opinions, 2021). I don't think the research offers conclusive evidence that the regular sharing of source diversity rates, as per the BBC's 50:50 methodology, was the sole reason behind the performance of student journalists in all grade levels. However, I think there is evidence it is more effective when classroom experiences try to replicate the deadline pressures journalists face in professional settings.

Let's start by reviewing the research questions:

RQ1: Did creating awareness of ongoing source diversity measurements change the ratio of male to female sources?

This question was addressed by both the 25-week content analysis and the pre-and-post surveys. The content analysis found evidence that when students in the fall term were first told their stories were being monitored for gender source diversity, there was an effort to reduce the percentage of male sources. However, this was short-lived as a traditional over-representation of male voices resumed at the start of the winter term. A similar improvement was found later in the winter term. When viewed by gender, the data also suggested both male and female reporters may have made efforts to improve the gender balance in their stories. Overall, there is evidence that as students became more conscious of the overall representation of male and female sources they may have made efforts to seek out more diverse sources.

This contrasts with the pre-and-post survey results of student awareness of the ongoing source diversity measurements. While 73.%% of students say they were aware of ongoing efforts to track gender balance, when asked directly, just 41.2% said they changed how they searched for sources based on the latest measurement results. There is evidence that the responses to both the content analysis and surveys differed by grade level. I will explore that later in this chapter.

RQ2: Have student opinions about source diversity changed over the year?

The pre-and-post survey found little evidence that student attitudes towards source diversity tracking changed over the year. Students maintained firm opinions about perceived gender imbalances in genres like sports or business reporting. There was overwhelming support for the idea that media outlets should reflect their audience's diversity through their reporting staff, story selection, and interviewed sources.

RQ3: Did students change how they searched for interviews or sources throughout the study?

While the pre-and-post survey provided evidence that students adopted new measures for finding interview sources over the year, there was little to suggest this was a result of the source-tracking measurements and not just students learning new reporting techniques and being socialized into newsroom norms (Shoemaker & Reese, 2014, p. 154). The notable exceptions were increased use of online subject matter guides, which can promote women experts or those from under-represented communities. That data also suggests that female reporters became more likely to use social media to find sources. However, only 4 in 10 students said they made different editorial choices on a story or changed how they searched for sources after learning about the latest gender source diversity measurement.

Hierarchy of Influences Framework

I return to Shoemaker & Reese's *Hierarchy of Influences* framework to help provide insight into these findings. I approached this study by wanting to see if Humber's use of the BBC's 50:50 methodology to track gender source diversity would result in a feedback loop between the model's media organization level and the individual level (Figure 2-2). A newsroom-wide initiative like a 50:50 gender source diversity goal would set expectations for reporters. If they responded, they might modify how they report, which would, in turn, affect the newsroom-wide gender balance ratio. I designed my study to look first for evidence of student journalists changing their reporting practices and attitudes in response to the routine reporting of source diversity measurements, and then later look for changes in the overall ratios. The data I collected from the three grade levels challenged this idea. Of the ten questions that asked if students changed how they reported, only one showed a statistically significant improvement.

There was also no noticeable shift in attitudes towards source diversity: my students strongly supported the ideals of gender-balanced news before I introduced it as a newsroom goal.

In my focus on the micro aspects of Shoemaker & Reese's framework, looking at how individual adjustments can bring about change in a media organization, I overlooked the more significant macro aspects of the model. It looks for interactions between five levels of analysis (Figure 2-1): social systems, social institutions, media organizations, routine practices, and individuals (Shoemaker & Reese, 2014). My Gen-Z students may have gained their strong ideals in support of equal gender representation in their work due to pressures from the social systems or social institutions levels rather than a newsroom-led initiative or new measurement routines. This might account for the failure of RQ2 to find any noticeable change in student opinions regarding source diversity. Research suggests members of Gen-Z "are more racially and ethnically diverse than any previous generation" (Parker & Igielnik, 2020). They also expect their news to include diverse races, ethnicities, nationalities, genders, ages, socioeconomic backgrounds and life experiences (Frank, 2022). Whereas the BBC needed to educate its older workforce to shift attitudes and bring about change, the results I recorded might have simply reflected younger students' pre-existing attitudes towards gender equity and diversity.

The noticeable exception concerns post-grad students, the only grade level to quote more female sources than male sources. The first two weeks of their reporting saw gender balance ratios heavily tilted towards female sources (see Appendix J). They eventually achieved a more balanced representation later in the term. As previously mentioned, they may have started the term eager to participate in the content tracking system to address perceived gender imbalances, only to realize they had over-compensated once they learned of the initial measurements.

While the students fell just shy of a 50:50 gender balance, they still outperformed

Canadian newsrooms over the same period. Over the same 25-week period Humber achieved a gender ratio of 47.8% female and 51.3% male, data from the *Informed Opinions Gender Gap Tracker* (Informed Opinions, 2022) shows both the *Globe and Mail* and the *Toronto Star* achieved ratios of approximately 26% female and 74% male (see the data in Appendix E).

As mentioned before, 3rd-year students in the winter term had the most difficulty in trying to achieve a gender balance in their reporting. Their course was the only one that tried to simulate professional working conditions by making students face daily deadlines. Trying to replicate real-world reporting pressures is one of the biggest challenges journalism faculty faces (Joseph, 1999, p. 79). Classrooms must balance theoretical and ethical instruction with practical skills demanded by industry, such as the ability to write and work under pressure and tight deadlines (Skinner et al., 2001; Wenger et al., 2018). The pressure of meeting a deadline means journalists privilege experts who return emails or phone calls and are willing to speak on short notice (Meer et al., 2016). Students in the 2nd year or post-graduate courses may have had several days or even weeks to file their stories. That gave them time to find sources they wanted and time to wait for a response before arranging for an interview. That is a luxury few journalists working to deadline enjoy. It may explain why their results were more balanced than the industry average or 3rd-year students¹⁶.

If I revisit my results, focusing on how the source tracking system affected 3rd-year students coping with deadline pressures, a different picture emerges. The pre-and-post surveys showed 3rd-year students were more engaged in the source-tracking system and more aware of the weekly results. It showed them as more willing to adopt new reporting strategies to find diverse source options and more willing to ask for help in doing so. Furthermore, the content

¹⁶ Had I only looked at source diversity measurements from the 2nd-year and post-grad classes, they would have reached the 50-50 goal in the winter term, achieving a balance of 48.5% female, 50.6% male, and 0.9% non-binary.

analysis of 3rd-year stories showed a clear improvement over the winter term. This suggests that as 3rd-year students learned about their initially poor gender balance ratios, they were collectively able to adapt and change their reporting routines to improve their balance of male-to-female sources.

The BBC developed its source tracking system to work in professional environments where journalists dealt with daily production pressures. While it can be instructive in academic settings, the research suggests it may have a limited effect in influencing gender diversity rates in student newsrooms unless those supervising faculty try to replicate real-world deadline pressures. In the next chapter, I will revisit the literature regarding the differences between student and professional newsrooms.

Summary

The BBC's 50:50 equality initiative sought to convince reporters of the need to balance their sources by regularly reporting gender diversity measurements, but the research suggests many students had already bought into the idea. Surveys suggest they expect the media they consume to reflect the diversity of their audience. This study could find little evidence that student opinions changed over the year or that they changed how they searched for stories as a result. Yet, after 25 weeks of filing stories, Humber students nearly achieved a 50:50 balance of male to female sources. Regularly sharing source diversity rates in a student newsroom may only be partially effective in getting student reporters to meet gender diversity targets. The most substantial evidence of its effectiveness is when student journalists face deadline pressures and find themselves favouring sources who promptly return phone calls and emails. There is

evidence that when students facing deadlines learn about an imbalance in source diversity measurements, they may adapt their reporting techniques to find a broader range of sources.

Chapter 5 - Conclusion

Journalism has a gender problem. Despite women making up roughly 50% of the population, it is rare for the average consumer of mainstream media to see or hear female experts quoted at that rate. Numerous international studies find women making up anywhere from 24-36% of sources (Sison, 2021; Sjøvaag & Pedersen, 2019; Swert & Hooghe, 2008; Vogler & Schwaiger, 2021), with the average in Canada almost right in the middle at 31% (Global Media Monitoring Project, 2021b). Many journalists and newsrooms (Carleton University, 2022; Fu, 2021; Yong, 2018) have started tracking and measuring their source diversity rates to encourage more gender-balanced coverage. One of the most successful initiatives to correct this imbalance is the BBC's 50:50 Equality Project. The British broadcaster encouraged producers of individual programs to count the gender of sources appearing on-air or in stories and regularly share those results with staff. Within three years, more than 74% of programs using the system achieved a 50:50 gender balance (Wittenberg-Cox, 2020).

This capstone project studied whether introducing the BBC's 50:50 initiative at Humber College in Toronto could encourage student journalists to achieve a 50:50 gender balance in their stories by regularly measuring their source diversity rates and sharing them with students weekly. I posed three specific research questions:

RQ1: Did creating awareness of ongoing source diversity measurements change the ratio of male to female sources?

RQ2: Have student opinions about source diversity changed over the year?

RQ3: Did students change how they searched for interviews or sources throughout the study?

This chapter will review my research and discussions arising from my findings. It will try to contextualize the results within the broader field of academic work I explored in my literature review. It will address limitations in my study and offer recommendations regarding source diversity tracking for journalism schools and professional media outlets. Finally, it will suggest future research directions, including criticism of source diversity initiatives and efforts to build business cases for editorial diversity in media content.

Summary of findings

Humber students finished the 2021-22 school year very close to reaching the goal of a 50:50 gender balance. Of the 1,852 sources recorded in my content analysis, 47.8% identified as female, 51.3% identified as male, and 0.08% identified as non-binary. Attributing those overall results to Humber's use of the BBC 50:50 methodology is difficult. To find evidence of the system's effectiveness, I had to examine the results by grade level. The BBC's strategy is most effective with students enrolled in a course that simulates daily newsroom deadlines. The literature identifies time constraints caused by deadline pressures as a possible reason why journalists under-represent women in their reporting (Asr et al., 2021; Cukier, Jackson, et al., 2019; Everbach et al., 2010; Martindale, 2006; Meer et al., 2016; Newsome, 2021; Shoemaker & Reese, 2014, p. 196). That is what 3rd-year students faced in a winter term reporting course that required them to pitch and write stories within six hours. Source diversity measurements for their first few weeks of stories showed an over-representation of male sources. Still, over the 14-week term, they gradually balanced their ratio of male to female sources. Survey data suggests these students were receptive to the regular source diversity measurement updates and were more likely to broaden their approaches to finding sources by adopting new research techniques, thus supporting RQ1 and RQ3.

The data for students in courses that did not require daily deadlines for stories is less conclusive for RQ1 and RQ3. 2nd-year and post-graduate students had several days to file their reports and several days to wait for potential sources to return their email or phone calls. Their survey results show they were less aware of the overall source diversity measurements and less likely to admit to changing how they went about seeking interviews. Yet, the content analysis of stories filed by 2nd-year students shows they achieved a nearly 50:50 balance of male-and-female sources throughout the two terms studied, even before they knew they were being measured. There is little evidence for the effectiveness of the BBC 50:50 methodology in changing attitudes at that grade level. Post-grad students show a different trend: they started their reporting term over-representing female sources but gradually achieved a better gender balance by the end of the term. In this case, regular feedback from the BBC system encouraged students to decrease their use of female sources.

Little support is found for RQ2 across all three grade levels. The regular reporting of diversity rates did little to change attitudes: students expressed overwhelming support for diversity and gender balance in media sources in both the pre-and-post surveys. However, the study provides evidence for a clear gender preference. Female student reporters are more likely to include more female sources than male sources. The opposite proves true for male reporters. This is consistent with some of the literature which finds female reporters are more likely to cite female sources (Humprecht & Esser, 2017; Zeldes et al., 2012), although this point is not supported in all studies of gender balance and source diversity (Liebler & Smith, 1997; Swert & Hooghe, 2008).

Finally, I must note that the overall ratio of sources achieved by all three grade levels (47.8% female, 51.3% male, 0.08%) is considerably more balanced than the ratios achieved by

professional Canadian media outlets. An ongoing source gender balance analysis by *Informed Opinions* covering the same period found Canada's major broadcasters and the *Toronto Star* and *Globe and Mail* achieved a female-male ratio of 29.3% female and 70.6% male (Informed Opinions, 2022).

While Humber College students came close to meeting a 50:50 gender balance goal, the evidence attributing that achievement to using the BBC 50:50 methodology is mixed. Research supports the idea that when student journalists filed stories under daily deadline pressures, the routine reminders of the progress towards a 50:50 goal might have caused them to change their reporting techniques in hopes of diversifying their sources. Students with more time to file their stories appear to have not been as influenced by the 50:50 methodology. However, the research finds student journalists express overwhelming support for media outlets to prioritize gender balance and diversity in their content and staffing.

Placing the findings in a scholarly context

This study makes several modest contributions to areas of academic research. The first involves using ongoing source diversity measurements to encourage organizational change in media outlets. The literature provides numerous examples of content analysis studies being used to monitor the sources chosen by media outlets (Cann & Mohr, 2001; Everbach et al., 2010; Humprecht & Esser, 2017; Lyons, 2002; Swert & Hooghe, 2008; Voakes et al., 1996; Vogler & Schwaiger, 2021)). Some studies focus on collecting data from a narrow real-time snapshot, while others study content over extended periods. Researchers may take months to analyze and share the data. Few studies examine results every week. Fewer still measure the reaction of journalists while the measurement of source diversity rates is ongoing. This capstone research presents a methodology for the weekly collection of source diversity data and the sharing of

results to measure attitudinal shifts towards newsroom performance goals. This project also contributes to the study of differences between journalism school newsrooms and professional newsrooms, particularly when replicating real-world conditions (Joseph, 1999). Little research compares gatekeeping decision-making in schools and professional newsrooms (Farquhar & Carey, 2019; Lyons, 2002). This study finds student journalists are far more successful than their professional colleagues when it comes to achieving a gender balance in their reporting, but this may be a result of the extra time they're given to complete their assignments. It suggests the combination of realistic deadlines and weekly feedback generated from source diversity measurements might offer a strong pedagogical combination for journalism schools. To effectively teach students to expand the diversity of their sources, instructors must recreate the time pressures that contribute to the under-representation of female sources in the broader news industry (Martindale, 2006). The literature supports the idea that more extended deadlines allow journalists to expand their sources and rely less on official government sources (Hansen, 1991). This study also finds that journalism students overwhelmingly support the ideals of gender balance and source diversity in the media they consume. This supports the literature that identifies student journalists as more likely than professional journalists to include diverse voices in their reporting (Cabrera et al., 2020; Content Diversity Board, 2020; Davenport & Grimm, 2021; Smith, 2008).

Limitations of the study

Weekly content analysis findings are affected by the daily news agenda. The ratios of male-to-female sources can sway week-to-week, depending on the stories making headlines. The BBC's 50:50 methodology also introduces subjective decision-making into the coding process by requiring researchers to make judgements about whether some sources should be classified as

“newsmakers” or “players” and thus excluded from the overall measurement results. The coding scheme did not allow for the classification of stories by editorial topic, limiting the analysis of results by subject or genre (such as business or sports stories). The response rate in student surveys may have been affected by some classes being held remotely due to the COVID-19 pandemic. The potential of a predisposition bias in the surveys should also be noted. The results may reflect the opinions of students most inclined to support the goals of source diversity, while students with less supportive views may not have participated in the survey.

Recommendations for professional practice

This capstone project offers lessons for how journalism schools can use source diversity auditing as a pedagogical tool to teach students about expanding their range of sources. The research finds it is most effective when realistic deadlines are used to simulate the pressures professional reporters face. The BBC system is not the only means for tracking source diversity: many journalism schools have developed their own measurement systems (Cabrera et al., 2020; Davenport & Grimm, 2021; Lu, 2021). The BBC provides resources to support schools that sign on as partners in its 50:50 Equality Project to help explain its methodological rules around excluding “newsmakers” or “players.” While this does not penalize students for covering stories featuring official sources, it can end up underplaying the gender imbalance that comes from covering those who hold power in society (Sjøvaag & Pedersen, 2019). When choosing a measurement system for their school, journalism instructors may want to consider what effect the BBC rules may have on their results¹⁷ or how introducing subjective-decision making into their source-diversity tracking system may affect intercoder reliability. Educators should also consider the overwhelming support students expressed for source diversity ideals. With students entering

¹⁷ I explore issues around how my source-diversity measurements might have differed had I not used the BBC 50:50 methodology in Appendix A.

journalism programs already expecting the media they consume and create to reflect their audience's diversity and gender balance, journalism programs may want to review their course designs and teaching plans to reflect those attitudes. Schools can explore providing tools for students to track and measure their own source diversity rates to see how they contribute to their newsroom's overall progress. Journalism classes can prepare students for reporting under deadlines by providing resources to help them expand their source contact lists when they aren't facing a time crunch (Casselman, 2019).

For professional media outlets, this research provides mixed support for the BBC's findings that its 50:50 Equality Project is effective in shifting source diversity ratios over time (BBC, 2019). Of more interest to newsroom leaders may be the survey findings showing the degree to which student journalists expect media outlets to include diverse voices and gender-balanced sources. These are attitudes they will look to see supported when they enter the workplace. These findings are supported by recent studies on Gen-Z media consumption that suggest this cohort is more racially diverse than any previous generation and sees "growing racial and ethnic diversity as a good thing" (Parker & Igielnik, 2020). Gen-Z students expect media brands to be "even more diverse and inclusive" (Galan et al., 2021) and want to see themselves represented in coverage of issues like civil rights or racial discrimination (Peck, 2022).

Future directions for research

The mixed-methods approach of this study, and the relatively narrow scope of this capstone project, highlight several limitations that future research can address. This study's focus on gender diversity precluded a deeper look at ethnic or other intersectional diversities. The content analysis coding scheme could be expanded to allow for an intersectional analysis by

comparing a source's gender, ethnicity or professional background with the subject matter of the story in which they're cited. Future research might consider focus groups or student interviews to measure attitudinal changes. An alternate research design might separate results by grade level to let students measure their progress against their peers (or even introduce a sense of competition between grades). A quasi-experimental approach could designate specific classes, grades, or even groups of reporters to be left out of the feedback process to compare their results with students exposed to the weekly measurement updates (Davenport & Grimm, 2021; Goyanes & Serra, 2016). This might help establish whether there is a certain threshold required for success and whether changes in reporting practices among a handful of students might be enough to create a statistically significant shift in overall results. While this project measured source diversity in online content, future research could measure and compare other student media such as radio, television and social media.

More effort could also be taken to address a potential predisposition bias by seeking out views from students or reporters critical of source diversity efforts. Past initiatives to encourage source diversity in professional newsrooms have been met with resistance, with some complaining of “knee-jerk diversity” or “affirmative angst” (Gross et al., 2001). Tara Henly, a former CBC radio producer, published a column critical of CBC source diversity tracking efforts, saying it encouraged employees to “actively book more people of some races and less of others” (Goldstein, 2022). At the very least, more detailed interviews with students and journalists could identify how effectively newsroom leaders explain the rationale behind source diversity audits.

Future research could help build a business case for increased diversity. There is little research into whether audiences recognize or reward diversity improvements in the media outlets they consume. With the news industry facing declining audiences (Public Policy Forum, 2017), it

is difficult to quantify whether any changes, positive or negative, might arise from diversity initiatives. BBC's audience research department has tried to qualify the effect of its 50:50 equality project. A survey of over 2,000 online users found that 69% noticed a shift towards more women in coverage on the BBC. In the all-important Gen-Z category, 80% of women aged 16-24 said they enjoyed seeing and hearing more women on the BBC. A further 68% of women aged 16 to 34 said they visited BBC websites more often because of that improved gender balance (BBC, 2022). BBC research does not provide any ratings data or website traffic analytics that might support this idea of increased audiences.

Conclusion

As I worked on this capstone project, I presented some preliminary findings to a first-year journalism class at Humber College. After I explained the results I'd found so far, and told them about industry-wide trends showing an under-representation of women, I asked them to brainstorm some causes of the problems. When they responded by blaming "the patriarchy" or "structural sexism," I tried to get them to look for more concrete reasons. We settled on a time crunch: journalists work on a time scale that most other industries do not. Few other sectors work under the pressure of a daily publishing deadline. This prioritizes the need for immediate responses to requests for information. The potential interviewee who answers, "can I call you back tomorrow" doesn't make it into the story. As a result, reporters get to know sources who know how the system works and how to accommodate time constraints (Meer et al., 2016). I asked students to recognize the limitations that deadlines put on their reporting and explained the importance of creating strategies to find and develop a broad range of contacts to help ensure diverse voices make it into their stories.

This study contributes to the study of newsroom source auditing by analyzing how reporters respond to the diversity measurements. It tried to determine if introducing Humber College students to the BBC's 50:50 Equality initiative might encourage them to think more deliberately about whether their stories contain a balance of male and female sources. The findings show an overwhelming recognition of the need for journalists and media outlets to produce journalism that includes diverse sources. The results also show students are prepared to meet those ideals, provided they're given the time. Most importantly, this study shows how deadline pressures can make it challenging to balance sources. This study finds a feedback loop can be created between student reporters and newsroom leaders who regularly publicize collective diversity rates. 3rd-year students facing daily deadlines were more willing to adopt new measures to find interview sources and, as a result, were able to improve their balance of male-to-female sources. I hope the findings prove helpful for other journalism instructors and newsroom leaders looking to introduce source diversity measurements into their media operations.

Appendices

Appendix A - Players and Newsmakers

With the BBC’s 50:50 methodology, not every source is counted. This differs from other approaches to content analysis where anyone who speaks is noted (Macharia, 2015) or where sources are categorized by expert or non-expert status (Cann & Mohr, 2001). The BBC asks journalists to ignore counting any sources they consider to be “players” or “newsmakers” (BBC, 2021), defined as subjects who are essential to that day’s news and which a reporter has no choice but to include (like the Prime Minister making an important announcement). When the BBC methodology is used for academic purposes, this distinction forces coders to make judgement calls about what sources are considered essential to a story. This can raise questions of stability (Krippendorff, 1980, p. 72) and whether coders’ “later judgements match their earlier judgements” (Potter & Levine-Donnerstein, 1999, p. 271) when they retest the sources they considered initially to be “players” or “newsmakers.”

When developing my coding scheme, I included categories for “players” or “newsmakers” to compare how results using the BBC’s original methodology might differ from one that included all sources. This added 40 female and 87 male sources to the count (Table A-1).

	Total sources	Female Sources	Male sources	Non-binary sources	Female percent	Male Percent	Non-binary percent
Standard measurements	1852	886	951	15	47.8%	51.3%	0.8%
Expanded measurements with “players”	1947	919	1013	15	47.2%	52.04%	0.77%

Table A-1: Comparison of standard BBC methodology with expanded measurements including players

Including “players” or “newsmakers” increased the ratio between male and female sources. A paired two-tailed t-test showed the inclusion of those extra male sources lead to a significant difference between the standard measurement mean ($M=0.513$, $SD=0.05$) and the expanded measurement mean ($M=0.523$, $SD=-0.053$); $t(24)=2.063$, $p=.05$).

While the ratio of female to male sources varied week to week, the inclusion of “players” or “newsmakers” was especially noticeable during weeks when major news events dominated the headlines. When the trucker convoy protest arrived in Ottawa (week 15), much of the student coverage included quotes from newsmakers such as Prime Minister Trudeau, Ottawa’s police chief, and several provincial premiers. Likewise, the start of the Russian invasion of Ukraine (week 17) saw the inclusion of quotes by President Joe Biden and Ukrainian President Volodymyr Zelenskyy.

Appendix B -Identities and Professions

Since the BBC has expanded the use of its 50:50 methodology also to track ethnicity, I created an additional coding scheme to track source identity and profession. Adding an intersectional analysis of the findings was beyond the scope of this research project. Still, I wanted to use the data as a baseline for future projects at Humber College.

The data proved quite challenging to collect since I had to search LinkedIn or find other publicly identifiable information to categorize sources by identity or profession. Coding identity based on appearance raises methodological and ethical concerns (Cukier, Elmi, et al., 2019) since it is easy to misinterpret categories, raising issues of stability and consistency (Potter & Levine-Donnerstein, 1999). The source tracking system used by journalism faculty at Michigan State University relies on students classifying their own stories since they are more likely to be aware of the ethnic identity of their sources (Davenport & Grimm, 2021). When I could not determine the identity of a source, I coded them as “unknown.” The entire coding scheme is explained in Appendix C. The top results are shown in Table B-1.

Identity	Total Mentions	Female Mentions	Male Mentions	Non-binary mentions
White	971	397	568	6
Unknown	256	164	89	3
South-Asian	131	58	73	0
Black	128	71	56	1
Asian	82	47	34	1

Table B-1 Top results from coding for ethnic identity

While gender diversity rates have a natural baseline for comparison (50:50), it is difficult to assess these numbers on their own without some other reference. My coding scheme was not able to classify stories by genre. That might be useful in future studies to determine if one or more identities were over-represented in certain types of stories, like those dealing with crime or business. Anecdotally, when coding stories, I noticed that all of the non-binary sources quoted by my students were in stories I would describe as dealing with LGBTQ+-related issues. They were never quoted in general news, sports, or arts stories. Academically, the closest I got to providing any sort of intersectional analysis (McKinley, 2021) was through my additional coding scheme that classified sources by profession (see Appendix C). Some of the top results are shown in Table B-2.

Profession	Asian	Black	Indigenous	Latin American	South Asian	Unknown	White
Actor	1	2			2		4
Athlete	4	11		1	3	4	24
Lawyer				1	3		4
Politician	3	3	1	2	11	1	128

Table B-2 Top results from coding for professional identity

This data was most useful when I looked at the identities of sources coded as “students” (n=278). I could compare the ratio of students quoted in our stories with the overall ethnic makeup of the Humber student population (and the overall population of Toronto) to see what identities were over-represented and under-represented (Table B-3).

Student Identity	Humbernews.ca	Humber	Toronto	Ontario
White	36%	30%	48%	70%
South Asian	16%	19%	13%	8.6%
Black	11%	17.5%	9%	4.7%
Asian	6%	4.3%	11%	5.7%
Latin American	5%	4.8%	3%	1.48%
Filipino	2%	8.5%	6%	5.7%
Unknown	20%			
Source	Personal content analysis	(Humber Strategic Planning, 2019) ¹⁸	(City of Toronto, 2020)	(Statistics Canada, 2016)

Table B-3 Comparing identity breakdown of “students” compared to ethnic identity breakdowns at Humber College, City of Toronto and the Province of Ontario

While it may be difficult to establish what an appropriate level of representation might be for other professional identities on Humbernews.ca, a starting point for future source tracking efforts would be to compare student ethnic identity against the composition of the larger student body (and main audience for Humbernews.ca content).

¹⁸ This yearly survey had a just a 44.7% response rate (13,228 participants), so the numbers may not be an accurate measurement of the student body’s demographics.

Appendix C - Coding sheets

Coding sheet for standard BBC 50:50 methodology + Players

Code	Mentions	Category
Source female	886	Standard BBC 50:50 Methodology
Source male	951	Standard BBC 50:50 Methodology
Source non-binary	15	Standard BBC 50:50 Methodology
Photo female	414	Standard BBC 50:50 Methodology
Photo male	426	Standard BBC 50:50 Methodology
Photo non-binary	6	Standard BBC 50:50 Methodology
Player / newsmaker female	40	Expanded BBC methodology - Players
Player / newsmaker male	87	Expanded BBC methodology - Players
Player / newsmaker non-binary	0	Expanded BBC methodology - Players

Coding sheet for source identity

Code	Total Mentions	Female mentions	Male mentions	Non-binary mentions
Asian	82	47	34	1
Filipino	16	6	10	0
Black	128	71	56	1
Disabled	6	3	3	0
Indigenous	19	10	8	1
Latin American	65	32	33	0
Middle-Eastern	23	14	9	0
Muslim	37	18	19	0
South-Asian	131	58	73	0
Trans	2	1	0	1
Unknown	256	164	89	3
White	971	397	568	6

Coding sheet for source profession

Code	Total Mentions	Female mentions	Male mentions	Non-binary mentions
Academic	193	72	121	0
Activist	62	35	27	0
Actor	10	3	7	0
Artist	29	17	12	0
Athlete	45	20	25	0
Business owner	72	28	44	0
Coach	31	0	31	0
Filmmaker	6	3	3	0
Humber staff	107	41	65	1
Journalist	41	18	23	0
Lawyer	9	0	9	0
Manager	65	28	37	0
Medical	83	44	39	0
Police	15	4	11	0
Politician	151	42	109	0
Spokesperson	135	71	64	0
Student	357	215	138	4

Appendix D - Overall Content Analysis Results

Week	Total Website Stories	Total sources	Female Sources	Male Sources	Non Binary	Female Percent	Male percent	Non binary percent
Total	768	1852	886	951	15	47.8%	51.3%	0.8%
1	23	48	25	23	0	52.1%	47.9%	0.0%
2	18	43	20	23	0	46.5%	53.5%	0.0%
3	18	50	24	25	1	48.0%	50.0%	2.0%
4	23	52	22	30	0	42.3%	57.7%	0.0%
5	20	43	26	16	1	60.5%	37.2%	2.3%
6	21	31	13	18	0	41.9%	58.1%	0.0%
7	29	74	34	40	0	45.9%	54.1%	0.0%
8	25	45	20	25	0	44.4%	55.6%	0.0%
9	30	53	27	26	0	50.9%	49.1%	0.0%
10	25	48	24	24	0	50.0%	50.0%	0.0%
11	24	57	25	29	3	43.9%	50.9%	5.3%
12	20	42	23	19	0	54.8%	45.2%	0.0%
13	27	72	33	39	0	45.8%	54.2%	0.0%
14	39	107	49	58	0	45.8%	54.2%	0.0%
15	44	103	46	57	0	44.7%	55.3%	0.0%
16	30	81	44	37	0	54.3%	45.7%	0.0%
17	42	108	44	62	2	40.7%	57.4%	1.9%
18	41	113	54	59	0	47.8%	52.2%	0.0%
19	35	99	55	44	0	55.6%	44.4%	0.0%
20	41	119	61	57	1	51.3%	47.9%	0.8%
21	27	78	38	40	0	48.7%	51.3%	0.0%
22	28	70	38	32	0	54.3%	45.7%	0.0%
23	37	89	44	43	2	49.4%	48.3%	2.2%
24	30	77	30	44	3	39.0%	57.1%	3.9%
25	71	150	67	81	2	44.7%	54.0%	1.3%

Table D-1 Overall results from 25-week content analysis of Humbernews.ca

Appendix E: Comparison with Informed Opinions

Comparing percentage of Female/Male sources between Humbernews.ca, Informed Opinions, Toronto Star and Globe and Mail (Informed Opinions, 2022)

Date	Humber Female	Humber Male	Informed Opinion Female	Informed Opinion Male	Toronto Star Women	Toronto Star Men	Globe and Mail Women	Globe and Mail Men
Sept 20-26	52.1	48.1	28.3	71.7	24	75	28	72
Sept 27-Oct 3	47.1	54.1	31	69	24	75	29	71
Oct 4-10	48.1	50.1	30	70	25	75	27	73
Oct 11-17	42.1	58.1	30	70	25	75	28	72
Oct 18-24	61.1	37.1	29	71	24	76	25	75
Nov 1-Nov 7	42.1	58.1	28.3	71.7	25	75	25	75
Nov 8-Nov 14	46.1	54.1	28.3	71.7	25	75	25	75
Nov 15-Nov 21	44.1	56.1	28	72	25	75	23	77
Nov 22-Nov 28	51.1	49.1	29.3	70.7	25	75	24	76
Nov 29-Dec5	50.1	50.1	30	70	27	73	24	76
Dec 6-12	44.1	51.1	29.3	70.7	25	74	28	72
Dec 13-19	55.1	45.1	31	69	29	71	29	71
Jan 17-23	46.1	54.1	31	69	28	72	26	74
Jan 24-30	46.1	54.1	28	72	27	73	24	76
Jan 31-Feb6	45.1	55.1	29	71	27	73	23	77
Feb 7-13	54.1	46.1	29	71	29	71	26	74
Feb 14-20	41.1	57.1	30	70	30	70	27	73
Feb 21-27	48.1	52.1	29	71	26	74	26	74
March 7-13	56.1	44.1	30	70	27	73	26	74
March 14-20	51.1	48.1	29	71	27	73	25	75
March 21-27	49.1	51.1	29	71	27	73	24	76
March 28-Apr 3	54.1	46.1	29	71	26	74	25	75
April 4-11	49.1	48.1	31	69	28	72	30	70
April 11-17	39.1	57.1	29.3	70.7	27	73	27	73
April 18-24	45.1	54.1	29	71	24	76	26	74
TOTALS	47.8%	51.3%	29.3%	70.6%	26.24%	73.64%	26%	74%

Table E-1 Humbernews.ca content analysis compared with Informed Opinions data

Appendix F - Pre-and-Post Survey results (n=34)

Q1: In terms of general news stories, I think the professional media outlets I consume have an equal balance of male and female interview sources

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	38.2%	3.206	0.880	0	8	13	11	2
Post Survey	38.2%	2.971	1.087	2	12	7	11	2

Q2: In terms of sports stories, I think the professional media outlets I consume have an equal balance of male and female interview sources

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	14.7%	2.294	0.970	7	15	7	5	0
Post Survey	11.8%	2.118	1.038	12	10	8	4	0

Q3: In terms of arts or entertainment stories, I think the professional media outlets I consume have an equal balance of male and female interview sources.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	61.8%	3.588	0.892	0	5	8	17	4
Post Survey	55.9%	3.412	0.925	1	5	9	17	2

Q4: In terms of business stories, I think the professional media outlets I consume have an equal balance of male and female interview sources.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	20.6%	2.529	0.929	1	22	4	6	1
Post Survey	17.6%	2.412	0.925	4	18	6	6	0

Q5: In terms of lifestyle stories, I think the professional media outlets I consume have an equal balance of male and female interview sources.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	50.0%	3.324	1.007	1	7	9	14	3
Post Survey	52.9%	3.382	0.888	0	7	9	16	2

Q6: I think the stories produced by Humbernews.ca have an equal balance of male and female interview sources.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	44.1%	3.529	0.896	0	3	16	9	6
Post Survey	73.5%	3.853	0.702	0	1	8	20	5

Q7: I think the stories presented by a media outlet should reflect the interests of its audience.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	85.3	4.059	0.851	0	3	2	19	10
Post Survey	82.4%	4.059	0.736	0	1	5	19	9

Q8: I think the stories presented by a media outlet should challenge the interests of its audience

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	82.4%	4.000	0.888	1	1	4	19	9
Post Survey	76.5	3.853	0.989	1	3	4	18	8

Q9: I think media outlets should have stories that reflect the diversity of their audience

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	100%	4.706	0.462	0	0	0	10	24
Post Survey	97.1%	4.706	0.524	0	0	1	8	25

Q10: I think media outlets should have reporting staff that reflect the diversity of their audience

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	94.1%	4.676	0.589	0	0	2	7	25
Post Survey	94.1%	4.647	0.597	0	0	2	8	24

Q11: I think media outlets should talk to interview sources that reflect the diversity of their audience.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	94.1%	4.647	0.597	0	0	2	8	24
Post Survey	88.2%	4.500	0.788	0	1	3	8	22

Q12: I have an understanding of who makes up the audience for Humbernews.ca

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	76.5%	3.882	0.880	1	1	6	19	7
Post Survey	76.5%	3.971	0.834	0	2	6	17	9

Q13: I think media outlets should try to reflect an overall 50:50 balance of male to female sources in their reporting.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Post Survey	82.4%	4.176	0.716	0	0	6	16	2

Q14: When you are assigned a story, which of the following things are you likely to do: Search online for more information about a story

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	100%	4.882	0.327	0	0	0	4	30
Post Survey	100%	4.794	0.410	0	0	0	7	27

Q15: When you are assigned a story, which of the following things are you likely to do: Check existing stories by other media outlets for potential interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	82.4%	4.265	0.898	0	2	4	11	17
Post Survey	88.2%	4.559	0.705	0	0	4	7	23

Q16: When you are assigned a story, which of the following things are you likely to do: Google names for potential interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	91.2%	4.588	0.743	0	1	2	7	24
Post Survey	94.1%	4.706	0.579	0	0	2	6	26

Q17: When you are assigned a story, which of the following things are you likely to do: Check Twitter for potential interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	67.6%	3.912	0.965	0	3	8	12	11
Post Survey	73.5%	4.029	0.969	0	3	6	12	13

Q18: When you are assigned a story, which of the following things are you likely to do: Check Facebook/Instagram for potential interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	58.8%	3.647	1.368	3	5	6	7	13
Post Survey	61.8%	3.618	1.101	0	8	5	13	8

Q19: When you are assigned a story, which of the following things are you likely to do: Check LinkedIN for potential names

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	52.9%	3.235	1.350	5	6	5	12	6
Post Survey	61.8%	3.706	1.219	0	9	4	9	12

Q20: When you are assigned a story, which of the following things are you likely to do: Call someone and ask for help in identifying potential interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	52.9%	3.324	1.065	0	11	5	14	4
Post Survey	61.8%	3.706	0.871	0	3	10	15	6

Q21: When you are assigned a story, which of the following things are you likely to do: Check with a professor for advice in identifying potential interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	64.7%	3.676	1.147	1	6	5	13	9
Post Survey	73.5%	3.912	0.900	0	3	6	16	9

Q22: When you are assigned a story, which of the following things are you likely to do: Check with a classmate for advice in identifying potential interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	79.4%	3.853	1.019	1	4	2	19	8
Post Survey	64.7%	3.706	1.001	1	3	8	15	7

Q23: When you are assigned a story, which of the following things are you likely to do: Consult an online experts guide to identify potential interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	52.9%	3.353	1.346	4	6	6	10	8
Post Survey	70.6%	3.912	1.311	2	5	3	8	16

Q24: When you are assigned a story, which of the following things are you likely to do: Add new contacts to a personal contact list

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	55.9%	3.588	1.328	4	2	9	8	11
Post Survey	73.5%	4.000	0.985	1	1	7	13	12

Q25: When assigned stories, I usually have a good sense of where I can go to find sources or interviews

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	67.6%	3.765	0.855	0	3	8	17	6
Post Survey	73.5%	3.853	0.702	0	1	8	20	5

Q26: I find it difficult to find original sources or interviews for my stories

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	32.4%	2.882	1.066	2	13	8	9	2
Post Survey	41.2%	3.147	1.184	2	10	8	9	5

Q27: I find it difficult to find diverse sources or interviews for my stories

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	44.1%	3.059	1.127	3	9	7	13	2
Post Survey	47.1%	3.206	1.067	1	10	7	13	3

Q28: Journalists need to pursue the best source or interview, regardless of their gender or background.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Pre survey	82.2%	4.382	0.779	0	1	3	12	18
Post Survey	91.2%	4.441	0.746	0	1	2	12	19

Q29: I understood how the BBC 50:50 measurement system was used to track source diversity on Humbernews.ca.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Post Survey	73.5%	3.912	0.830	0	2	7	17	8

Q30: I was aware of the ratio of male to female sources on Humbernews.ca because of regular measurement updates.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Post Survey	41.2%	3.324	1.007	0	8	12	9	5

Q31: I made changes to how I searched for sources and interviews after learning about the latest measurement results for Humbernews.ca

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Post Survey	41.2%	3.206	0.880	1	6	13	13	1

Q32: I made different editorial choices on a story I was working on based on the latest measurement results for Humbernews.ca

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Post Survey	36.4%	3.094	0.879	2	5	14	12	0

Q33: I found it challenging to expand the range of people I consulted for my stories to include more male or female sources.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Post Survey	35.3%	2.971	1.000	2	10	10	11	1

Q34: I made a personal effort to track the gender balance of my own stories.

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Post Survey	50.0%	3.294	1.001	0	10	7	14	3

Q35: I am satisfied with the gender balance of stories on Humbernews.ca

	Yes Percentage	Average	Stdev	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Post Survey	55.9%	3.559	0.504	0	0	15	19	0

Appendix G - Gender source diversity by gender

Week	Female reporter - female sources	Female reporter - male sources	Male reporter- female sources	Male reporters - male sources
AVERAGE	52.30%	46.60%	41.10%	58.60%
1	60.1%	40.1%	46.1%	54.1%
2	54.1%	46.1%	37.1%	63.1%
3	52.1%	49.1%	44.1%	56.1%
4	59.1%	41.1%	34.1%	66.1%
5	63.1%	31.1%	59.1%	41.1%
6	42.1%	58.1%	42.1%	58.1%
7	52.1%	48.1%	43.1%	57.1%
8	52.1%	48.1%	38.1%	63.1%
9	42.1%	58.1%	56.1%	44.1%
10	71.1%	29.1%	39.1%	61.1%
11	44.1%	47.1%	44.1%	56.1%
12	69.1%	31.1%	48.1%	52.1%
13	42.1%	58.1%	49.1%	51.1%
14	45.1%	55.1%	46.1%	54.1%
15	49.1%	51.1%	35.1%	65.1%
16	72.1%	28.1%	40.1%	60.1%
17	47.1%	51.1%	35.1%	63.1%
18	53.1%	47.1%	40.1%	60.1%
19	53.1%	47.1%	40.1%	60.1%
20	64.1%	36.1%	35.1%	64.1%
21	46.1%	54.1%	55.1%	46.1%
22	50.1%	50.1%	48.1%	52.1%
23	52.1%	46.1%	33.1%	62.1%
24	54.1%	37.1%	26.1%	74.1%
25	50.1%	48.1%	33.1%	67.1%

Table G-1: Breakdown of female-male sources by female reporter and male reporter

Appendix I - Fall term sources

2nd year Sources - Fall Term

Week	Total Stories	Total sources	Female sources	Male Sources	Non binary sources	Female Percentage	Male Percentage	Non- binary Percentage
1	16	40	24	16	0	60.0%	40.0%	0.0%
2	16	40	18	22	0	45.0%	55.0%	0.0%
3	14	44	21	22	1	47.7%	50.0%	2.3%
4	22	49	22	27	0	44.9%	55.1%	0.0%
5	16	41	26	14	1	63.4%	34.1%	2.4%
6	13	24	11	13	0	45.8%	54.2%	0.0%
7	25	67	32	35	0	47.8%	52.2%	0.0%
8	17	39	16	23	0	41.0%	59.0%	0.0%
9	22	48	23	25	0	47.9%	52.1%	0.0%
10	23	47	23	24	0	48.9%	51.1%	0.0%
11	20	51	22	26	3	43.1%	51.0%	5.9%
12	13	33	20	13	0	60.6%	39.4%	0.0%
TOTAL	217	523	258	260	5	49.3%	49.7%	1.0%

Table I-1: 2nd year Sources - Fall Term

3rd year Sources - Fall Term

Week	Total Stories	Total sources	Female sources	Male Sources	Non binary sources	Female Percentage	Male Percentage	Non- binary Percentage
1	7	8	1	7	0	12.5%	87.5%	0.0%
2	2	3	2	1	0	66.7%	33.3%	0.0%
3	4	6	3	3	0	50.0%	50.0%	0.0%
4	1	3	0	3	0	0.0%	100.0%	0.0%
5	4	2	0	2	0	0.0%	100.0%	0.0%
6	8	7	2	5	0	28.6%	71.4%	0.0%
7	4	7	2	5	0	28.6%	71.4%	0.0%
8	8	6	4	2	0	66.7%	33.3%	0.0%
9	8	5	4	1	0	80.0%	20.0%	0.0%
10	2	1	1	0	0	100.0%	0.0%	0.0%
11	4	6	3	3	0	50.0%	50.0%	0.0%
12	7	9	3	6	0	33.3%	66.7%	0.0%
TOTAL	59	63	25	38	0	39.7%	60.3%	0.0%

Table I-2: 3rd year Sources - Fall Term

Appendix J - Winter term sources

2nd year Sources - Winter Term

Week	Total Stories	Total sources	Female sources	Male Sources	Non binary sources	Female Percentage	Male Percentage	Non- binary Percentage
14	8	29	12	17	0	41.38%	58.62%	0.00
15	9	25	15	10	0	60.00%	40.00%	0.00
16	7	19	6	13	0	31.58%	68.42%	0.00
17	10	21	6	15	0	28.57%	71.43%	0.00
18	10	23	14	9	0	60.87%	39.13%	0.00
19	11	31	17	14	0	54.84%	45.16%	0.00
20	5	12	5	7	0	41.67%	58.33%	0.00
21	6	21	13	8	0	61.90%	38.10%	0.00
22	10	29	15	14	0	51.72%	48.28%	0.00
23	11	25	10	14	1	40.00%	56.00%	0.04
24	14	38	9	26	3	23.68%	68.42%	0.08
25	16	42	20	21	1	47.62%	50.00%	0.02
TOTAL	117	315	142	168	5	45.1%	53.3%	1.59%

Table J-1: 2nd year Sources - Winter Term

3rd year Sources - Winter Term

Week	Total Stories	Total sources	Female sources	Male Sources	Non binary sources	Female Percentage	Male Percentage	Non- binary Percentage
13	23	57	22	35	0	38.6%	61.4%	0.00%
14	20	48	20	28	0	41.7%	58.3%	0.00%
15	23	46	15	31	0	32.6%	67.4%	0.00%
16	19	48	28	20	0	58.3%	41.7%	0.00%
17	18	46	16	29	1	34.8%	63.0%	2.17%
18	20	54	25	29	0	46.3%	53.7%	0.00%
19	19	56	33	23	0	58.9%	41.1%	0.00%
20	22	64	34	29	1	53.1%	45.3%	1.56%
21	15	40	18	22	0	45.0%	55.0%	0.00%
22	8	18	8	10	0	44.4%	55.6%	0.00%
23	16	51	26	24	1	51.0%	47.1%	1.96%
24	4	15	8	7	0	53.3%	46.7%	0.00%
25	20	61	29	31	1	47.5%	50.8%	1.64%
TOTAL	227	604	282	318	4	46.7%	52.6%	0.66%

Table J-2: 3rd year Sources - Winter Term

Post-Grad Sources - Winter Term

Week	Total Stories	Total sources	Female sources	Male Sources	Non binary sources	Female Percentage	Male Percentage	Non- binary Percentage
13	4	15	11	4	0	73.3%	26.7%	0.00%
14	11	27	17	10	0	63.0%	37.0%	0.00%
15	12	32	16	16	0	50.0%	50.0%	0.00%
16	4	14	10	4	0	71.4%	28.6%	0.00%
17	14	41	22	18	1	53.7%	43.9%	2.44%
18	11	36	15	21	0	41.7%	58.3%	0.00%
19	5	12	5	7	0	41.7%	58.3%	0.00%
20	14	43	22	21	0	51.2%	48.8%	0.00%
21	6	17	7	10	0	41.2%	58.8%	0.00%
22	10	23	15	8	0	65.2%	34.8%	0.00%
23	10	16	8	8	0	50.0%	50.0%	0.00%
24	12	24	13	11	0	54.2%	45.8%	0.00%
25	35	47	18	29	0	38.3%	61.7%	0.00%
TOTAL	148	347	179	167	1	51.6%	48.1%	0.29%

Table J-3: Post-Grad Sources - Winter Term

Appendix K Pre-Survey Questionnaire

<i>5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree</i>		Responses:				
Permission						
1.	Please acknowledge you have read and understood the survey consent form	Yes	No			
Gender balance						
2.	In terms of general news stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	5	4	3	2	1
3.	In terms of sports stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	5	4	3	2	1
4.	In terms of arts or entertainment stories, I think the professional media outlets I consume have an equal balance of male and female interview sources.	5	4	3	2	1
5.	In terms of business stories, I think professional media outlets I consume have an equal balance of male and female interview sources	5	4	3	2	1
6.	In terms of lifestyle stories, I think professional media outlets I consume have an equal balance of male and female interview sources.	5	4	3	2	1
7.	I think the stories produced by Humbernews.ca have an equal balance of male and female interview sources	5	4	3	2	1
8.	I think the stories presented by a media outlet should reflect the interests of its audience.	5	4	3	2	1
9.	I think the stories presented by a media outlet should challenge the interests of its audience.	5	4	3	2	1
10.	I think media outlets should have stories that reflect the diversity of their audience	5	4	3	2	1
11.	I think media outlets should have reporting staff that reflect the diversity of their audience	5	4	3	2	1
12.	I think media outlets should talk to interview sources that reflect the diversity of their audience.	5	4	3	2	1
13.	I have an understanding of who makes up the audience for Humbernews.ca	5	4	3	2	1
Reporting Routines						
14.	When you are assigned a story, which of the following things are you likely to do:					
<i>5=very likely, 4=somewhat likely, 3=neutral, 2=rarely, 1=never</i>						
Search online for more information about a story		5	4	3	2	1
Check existing stories by other media outlets for potential interviews		5	4	3	2	1
Google names for potential interviews		5	4	3	2	1
Check Twitter for potential interviews		5	4	3	2	1
Check Facebook/Instagram for potential interviews		5	4	3	2	1
Check LinkedIn for potential interviews		5	4	3	2	1
15.	When you are assigned a story, which of the following things are you likely to do:					
<i>5=very likely, 4=somewhat likely, 3=neutral, 2=rarely, 1=never</i>						

Call someone and ask for help in identifying potential interviews	5	4	3	2	1
Check with a professor for advice in identifying potential interviews	5	4	3	2	1
Check with a classmate for advice in identifying potential interviews	5	4	3	2	1
Consult an online experts guide to identify potential interviews	5	4	3	2	1
Add new contacts to a personal contact list	5	4	3	2	1
<i>5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree</i>					
16. When assigned stories, I usually have a good sense of where I can go to find sources or interviews	5	4	3	2	1
17. I find it difficult to find original sources or interviews for my stories	5	4	3	2	1
18. I find it difficult to find diverse sources or interviews for my stories	5	4	3	2	1
19. Journalists need to pursue the best source or interview, regardless of their gender or background.	5	4	3	2	1
Demographics					
20. What program/year are you in at Humber College	2nd year, 3rd year, post-grad, prefer not to say				
21. What is your gender?	Male, female, non-binary, prefer not to say				
22. I consent to my answers being used	Yes No				

Appendix L: Post-Survey Questionnaire

<i>5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree</i>		Responses:				
Permission						
1.	Please acknowledge you have read and understood the survey consent form	Yes	No			
Gender balance						
2.	In terms of general news stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	5	4	3	2	1
3.	In terms of sports stories, I think the professional media outlets I consume have an equal balance of male and female interview sources	5	4	3	2	1
4.	In terms of arts or entertainment stories, I think the professional media outlets I consume have an equal balance of male and female interview sources.	5	4	3	2	1
5.	In terms of business stories, I think professional media outlets I consume have an equal balance of male and female interview sources	5	4	3	2	1
6.	In terms of lifestyle stories, I think professional media outlets I consume have an equal balance of male and female interview sources.	5	4	3	2	1
7.	I think the stories produced by Humbernews.ca have an equal balance of male and female interview sources	5	4	3	2	1
8.	I think the stories presented by a media outlet should reflect the interests of its audience.	5	4	3	2	1
9.	I think the stories presented by a media outlet should challenge the interests of its audience.	5	4	3	2	1
10.	I think media outlets should have stories that reflect the diversity of their audience	5	4	3	2	1
11.	I think media outlets should have reporting staff that reflect the diversity of their audience	5	4	3	2	1
12.	I think media outlets should talk to interview sources that reflect the diversity of their audience.	5	4	3	2	1
13.	I have an understanding of who makes up the audience for Humbernews.ca	5	4	3	2	1
14.	I think media outlets should try to reflect an overall 50:50 balance of male to female sources in their reporting	5	4	3	2	1
Reporting Routines						
15.	When you are assigned a story, which of the following things are you likely to do:					
<i>5=very likely, 4=somewhat likely, 3=neutral, 2=rarely, 1=never</i>						
Search online for more information about a story		5	4	3	2	1
Check existing stories by other media outlets for potential interviews		5	4	3	2	1
Google names for potential interviews		5	4	3	2	1
Check Twitter for potential interviews		5	4	3	2	1
Check Facebook/Instagram for potential interviews		5	4	3	2	1
Check LinkedIn for potential interviews		5	4	3	2	1

16.	When you are assigned a story, which of the following things are you likely to do:					
	<i>5=very likely, 4=somewhat likely, 3=neutral, 2=rarely, 1=never</i>					
	Call someone and ask for help in identifying potential interviews	5	4	3	2	1
	Check with a professor for advice in identifying potential interviews	5	4	3	2	1
	Check with a classmate for advice in identifying potential interviews	5	4	3	2	1
	Consult an online experts guide to identify potential interviews	5	4	3	2	1
	Add new contacts to a personal contact list	5	4	3	2	1
	<i>5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree</i>					
17.	When assigned stories, I usually have a good sense of where I can go to find sources or interviews	5	4	3	2	1
18.	I find it difficult to find original sources or interviews for my stories	5	4	3	2	1
19.	I find it difficult to find diverse sources or interviews for my stories	5	4	3	2	1
20.	Journalists need to pursue the best source or interview, regardless of their gender or background.	5	4	3	2	1
21.	I understood how the BBC 50:50 measurement system was used to track source diversity on Humbernews.ca	5	4	3	2	1
22.	I was aware of the ratio of male to female sources on Humbernews.ca because of regular measurement updates.	5	4	3	2	1
23.	I made changes to how I searched for sources and interviews after learning about the latest measurement results for Humbernews.ca	5	4	3	2	1
24.	I made different editorial choices on a story I was working on based on the latest measurement results for Humbernews.ca	5	4	3	2	1
25.	I found it challenging to expand the range of people I consulted for my stories to include more male or female sources.	5	4	3	2	1
26.	I made a personal effort to track the gender balance of my stories	5	4	3	2	1
27.	I am satisfied with the gender balance of stories on Humbernews.ca	5	4	3	2	1
Demographics						
28.	What program/year are you in at Humber College	2nd year, 3rd year, post-grad, prefer not to say				
29.	What is your gender?	Male, female, non-binary, prefer not to say				
30.		prefer not to say				
31.	I consent to my answers being used	Yes No				

Appendix M: Humber College Ethics Approval



HUMBER
Research Ethics Board

September 20, 2021

Mike Wise
Humber College

Dear Mike,

Your application, **BBC 50:50 Content Reporting** has been approved by the Humber Research Ethics Board for one year, September 20, 2022. Your protocol number is *REB-0232*.

If you amend your research methodology in any way, or if you would like to extend your approval, please visit the Humber Research Ethics Board website (www.humber.ca/research/REB) to locate the appropriate form.

Upon completion of your project, please submit a Project Completion Form, which can also be found on the Humber Research Ethics Board website.

Best wishes as you pursue your research interests.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Lydia Boyko'.

Dr. Lydia Boyko
APR, FLMI, BJ, MEd, PhD
Chair, Humber Research Ethics Board

Note on Institutional Approval: All internal and external researchers planning to conduct research involving the collection of data from Humber staff, faculty, students, or access to institutional data/resources, must obtain institutional approval in addition to Humber Research Ethics Board (HREB). HREB approval does not automatically constitute Institutional Approval, and vice versa. Institutional Approval is granted by the Office of the Senior Vice-President, Academic. To request Institutional Approval, please visit the REB website (https://www.humber.ca/research/reb/#hero_banner) to download the form or contact research@humber.ca.

Appendix N: University of Alberta Ethics Approval

 UNIVERSITY OF ALBERTA	RESEARCH ETHICS OFFICE 2-01 North Power Plant (NPP) 11312 - 89 Ave NW Edmonton, Alberta, Canada T6G 2N2 Tel: 780.492.0459 www.uab.ca/reo
	Notification of Approval
Date:	October 21, 2021
Study ID:	Pro00113516
Principal Investigator:	Michael Wise
Study Supervisor:	Gordon Gow
Study Title:	Shifting gender balance and source diversity in student journalism by sharing content measurement results.
Approval Expiry Date:	Thursday, October 20, 2022
Thank you for submitting the above study to the Research Ethics Board 2. Your application has been reviewed and approved on behalf of the committee.	
Approved Documents:	
Recruitment Materials Recruitment Flyer - PDF	
Letter of Initial Contact Information Letter - PDF	
Consent Forms Consent Form - PDF	
Questionnaires, Cover Letters, Surveys, Tests, Interview Scripts, etc. Survey Questionnaire - PDF	
Other Documents WISE - Can Counting improve representation - PDF	
<p>Any proposed changes to the study must be submitted to the REB for approval prior to implementation. A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.</p> <p>Approval by the REB does not constitute authorization to initiate the conduct of this research. The Principal Investigator is responsible for ensuring required approvals from other involved organizations (e.g., Alberta Health Services, Covenant Health, community organizations, school boards) are obtained, before the research begins.</p> <p>Sincerely,</p> <p>Theresa Garvin, PhD, MUA, BA Chair, Research Ethics Board 2</p> <p><i>Note: This correspondence includes an electronic signature (validation and approval via an online system).</i></p>	

Appendix O: NVIVO screenshot

Ontario aiming to remove nearly all pandemic limits by March

Selection Mode T Zoom 100% Recognize Text

Annotations

- Male
- Female
- White
- Ontario
- Male Reporter
- Location
- General News
- Eli Ridder
- COVID-19
- Beat
- Coding Density

- White
- Spokesperson
 - South-Asian
- Source Identity
- Female
- Male
- Student

Restaurants, bars, gyms, theatres and malls can open at 50 per cent capacity as of Jan. 31, with soc

This also includes museums, zoos, casinos and amusement parks, with proof of vaccination still need

For restaurants, the reopening plan brings some relief after two years of varying levels of shutdown t
Restaurants Canada official said.

"At 50 per cent, the majority of restaurants still won't be able to be profitable, but at least they're gettin
vice president James Rilett told Humber News.

Nidhi Nidhi, a recent graduate of Sheridan College who works part-time at a McDonalds, said that sh

"McDonald's compared to the last restaurant I worked at is so much better when it comes to taking pr

Humber College student Giovanni De Freitas is pleased a plan to get back to pre-pandemic life is in f

"I'm happy we are finally reopening and can start the process to a normal life," the 4th-year criminal jt

"I personally think we should move to full capacity because really the only big fear here is Omicron ar
their booster so there is not an immediate threat."

Humber paralegal student Mahek Khan was not surprised at the reopening but told Humber News the

"Online learning doesn't seem to be going anywhere," the second-year student said.

Figure O-1: Screenshot of NVIVO showing codes identifying male sources

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