Bimodal Class Delivery and Women's Success in Academia

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Abstract: This study examines the growing potential of bimodal class delivery, specifically the integration of flexible virtual learning to support women's success in postsecondary settings. By addressing the multifaceted gender norms and expectations which often impact the professional journeys of women, universities can seek to create an inclusive learning environment. Bimodal class delivery mitigates barriers, facilitates self-regulation, and enhances women's success by offering academic autonomy and accessibility. Integrating virtual learning platforms, hardware tools, and educational technologies empowers women to actively engage in their education, transcending geographical limitations, and expand their access to knowledge. Moreover, bimodal class delivery presents a competitive advantage by leveraging women's affinity for virtual learning and addressing gender disparities in traditional educational settings. Embracing bimodal class delivery in academia fosters an environment that promotes women's advancement, cultivates their talents, and contributes to their overall success.

Introduction

Academia has long been regarded as a beacon of knowledge and intellectual inquiry. From Plato's Academy to modern research institutions, the pursuit of higher-level spawned the academic institutions present today, which were and are still, constructed for male learners (Whitley & Page, 2015). The legacy of academia is marred by a historical exclusion of women from formal education, perpetuating gender disparities that persist to this day. Recent studies indicate that bimodal class delivery, specifically the integration of flexible virtual learning, is a boon for women that promotes success in education (Reese et al. 2021).

Throughout the postsecondary experience, women statistically face unique challenges at a higher rate than their male counterparts. To mitigate these challenges and foster an inclusive learning environment, the integration of bimodal class delivery affords women the ability to access education in a way that harmonizes with their gendered expectations (Du et al., 2019). By combining traditional face-to-face instruction with flexible virtual learning, universities and colleges create educational experiences that accommodate women's unique needs and circumstances. Bimodal class delivery has the potential to lessen or remove many of the obstacles faced by women, enabling them to overcome geographical, temporal, and logistical constraints that impede their academic progress (Al Hassan & Shukri, 2017).

Additionally, many tools and resources support effective virtual learning experiences in a modern way that can complement the learning style of many educators. The integration of virtual learning platforms, hardware tools, and educational technologies offer opportunities for engagement, collaboration, and personalized learning experiences (Huertas et al., 2020). These cost-effective tools empower women to participate in their education actively and more frequently (Picciano, 2019).

When assessing the future of education, there is a clear competitive advantage of bimodal class delivery in promoting women's success in academia. Leveraging the power of virtual class delivery heightens institutional inclusion within pedagogical education (Best Colleges, 2022). Combining traditional in-person instruction with flexible virtual learning holds immense potential to support women's success in academia. By addressing the challenges and barriers faced by women, academic institutions can create a more equitable environment that serves as catalysts for women's advancement in the pursuit of intellectual growth.

Gender Inequality in Academia

As with many formal institutions, the academic environment is rife with inequities and gender biases for female learners. Women's educational experiences and opportunities are often unique from men's, and several compounding factors hinder academic prosperity (Casad et al., 2021). Some

of the inequalities women in educational environments experience are outlined in this section.

Family Structure

Traditional gender roles and expectations disproportionately assign greater domestic duties to female students within certain family structures. These obligations often require caregiving responsibilities as well (Williams, 2018). Gender biases that manifest within family structures can influence the allocation of educational resources and support. Familial attitudes towards female education can be influenced by patriarchal attitudes, assigning a lesser value to women's education or prioritizing early marriage over continued schooling (Shastri, 2014). These attitudes can restrict a female student's ability to attend classes and pursue educational opportunities.

Wage Gaps

Women, on average, earn less than men, often resulting in a higher financial burden in paying for tuition and other educational expenses. With regard to financing education, women are more likely to rely on student loans to finance their education than men. The gender wage gap can also delay or obstruct a woman's ability to achieve financial independence during the course of her studies, limiting autonomy and educational choices (Miller, 2017). All of these factors impact educational choices and career trajectories, potentially leading to lower representation in certain academic fields.

Transportation

Women encounter transportation-related challenges when accessing educational institutions, such as limited public transportation options and long commuting distances. Many transportation barriers directly influence women's participation in academic activities, including attendance, engagement, and access to campus resources (Babber et al., 2022). Additionally, women experience higher safety concerns and harassment while using public transportation, walking, or cycling. Fear of harassment or violence can restrict their mobility and access to educational institutions. In some contexts, women have limited access to safe and reliable transportation options (Statistic Canada, 2017), serving as another example of the tangible impediments women encounter when being physically present in educational settings.

Hidden Disabilities

Many developmental and learning disabilities are underdiagnosed or missed entirely in the female population, due to the fact that the markers for these disorders are traditionally based on male audiences (Saure et al., 2022). For example, girls with dyslexia may exhibit different symptoms and coping strategies compared to boys because they tend to have better verbal

skills, masking their difficulties with reading and writing (Kurokami et al., 2019). Similarly, women and girls with ADHD display more internalizing symptoms, such as daydreaming and inattentiveness, which can be overlooked or misattributed to other factors, such as anxiety or mood disorders (Ford-Jones, 2015).

Regarding neurodevelopmental disorders, women with autism spectrum disorder (ASD) tend to display different characteristics and social behaviour patterns compared to males, which can result in missed or delayed diagnoses. The diagnostic criteria and assessment tools for ASD were historically developed based on male presentations, leading to the under-identification of females (Young et al., 2018).

Cultural Expectations

Cultural values on gender roles can have a direct impact on women's support from their communities of origin in pursuit of educational benchmarks. Conversely, cultural biases within educational settings can affect women's experiences in academia, particularly for cultural minorities. Within the home, parental attitudes toward women's education directly impact familial support and investment in their daughters' education. Cultural norms relating to early marriage can interrupt or curtail a woman's education, thwarting the ability to attend classes in person (Mousa, 2021).

Caregiving

Women often bear a disproportionate share of caregiving responsibilities within families, which result in time constraints and reduced availability for academic pursuits. Worldwide, women account for the lion's share of unpaid caregiving responsibilities. With the lack of full engagement in academic pursuits, a reduction in career progression can result (Peetz et al., 2023).

Reproductive Health

Women's reproductive health can routinely disrupt academic engagement in many ways. Approximately 30-40% of women experience menstruation symptoms serious enough to disturb their lifestyle and routines (Siminiuc & Turcanu, 2023). Additionally, according to the World Health Organization (2017), access to reproductive healthcare, such as contraception, sexual health education, and medically professional abortion care, can also contribute to absenteeism. During pregnancy especially, women encounter limited access to accommodations and support.

Academic Bias

An abundance of evidence shows gender biases in grading and evaluation, with research indicating that female students may face lower expectations or be subject to stereotypes that affect their academic evaluations. This noteworthy prejudice can impact women's opportunities for advancement and recognition (Rivera & Tilcsik, 2019).

The Caregiving Crisis

Due to the unequal distribution of caregiving responsibilities (Htun, 2021), women are deeply impacted by the caregiving crisis.

Caregiver Demand

According to the United Nations' (2022) World's Women report, women performed 76.2% of unpaid care work, with an average of 13.8 hours of unpaid labour weekly, in addition to paid work, as compared to 10 hours of unpaid labour for men (data collected in 2020). There is a prominent demand for family as well as professional caregivers, and much of the requirement for these services is fulfilled by women (Htun, 2021).

Caregiver Burnout

When addressing caregiver health, findings from Statistics Canada (2023) reveal that more than half (56%) of unpaid caregivers experience fatigue due to their caregiving duties. In comparison, 44% report experiencing worry or anxiety within the last year, effectively leaving no caregiver unscathed. Not only are women more likely to be caregivers, but they are also more likely to report negative impacts from caregiving, such as feeling tired, worried, or anxious.

Impact on Women of Colour

Women of colour often carry a heavier caregiving burden due to cultural norms, familial expectations, and limited access to alternative caregiving resources. They are more likely to provide care for multiple generations within their families. Additionally, women of colour experience wage gaps and occupational challenges, which can limit their financial resources to afford quality caregiving support or take time off work to fulfill caregiving responsibilities (Tan et al., 2023).

When assessing the health disparities women of colour face regarding both sufficient access to healthcare and overall health outcomes, caregiving needs are increased both for the caregiver and for the family member(s) receiving care. Some of the barriers to accessing formal support systems, such as affordable childcare, respite care, and social services, are due to structural inequities and systemic biases (Mental Health America, 2023).

Safety On and Off Campus

Women are confronted with increased safety concerns both on and off campus, including issues of sexual harassment, assault, and gender-based violence. Worrying over this need for protection can impact women's sense of security, engagement in academic activities, and overall well-being (Etopio et al., 2019).

Women's Experience in Postsecondary Environments

Findings from Statistics Canada (2020) indicated that approximately 11% of female-identifying students experience incidents of sexual assault within a postsecondary setting. In contrast, the prevalence of sexual assault among male-identifying students was reported to be around 4%.

Experiences of Women and Men

Survey results from Statistics Canada (2020) revealed that women in Canadian postsecondary settings are more prone to encountering various forms of unwanted sexualized behaviours than men in the past year. The survey revealed significant disparities between women and men, with the most notable gaps observed in unwanted sexual attention, including whistling and "catcalls" (27% of women versus 6% of men), as well as unwelcome physical contact or invasion of personal space (21% of women versus 7% of men).

Experiences of Unwanted Behaviours

The findings of Statistics Canada (2020) also indicated that a significant proportion of women (23%) report feeling fearful due to unwanted sexual advances, whereas the corresponding percentage for men was merely 4%. Furthermore, approximately 25% of women encounter unwanted sexual attention in public spaces. These incidents usually involve males who are previously unknown to the victims, with approximately 11% of these instances occurring on public transportation. These encounters have noticeable repercussions, as half of the women modify their behaviours in response to their trauma.

Bimodal Class Delivery

Many of the obstacles previously listed can be remedied by offering women flexible virtual learning options as part of their studies.

Perception Shift

Interestingly, despite men in academia generally reporting higher annual incomes in comparison to women, unexpected findings by Best Colleges (2022) were discovered. It was observed that a higher proportion of men perceived paying for college as a greater challenge when compared to women when studying online. Specifically, 76% of men expressed this viewpoint, while 66% of women shared the same perception. Thus, incorporating a modern learning style into the classroom pays dividends for women's outlook on their observed struggles.

Obstacles Removed

More data from Best Colleges (2022) demonstrated that both male and female online students acknowledged the belief that female students face additional challenges. Nevertheless, when participants were asked to assess the degree of difficulty associated with various barriers to graduation,

such as staying on schedule with classes and maintaining a minimum GPA, women tended to perceive these obstacles as less formidable than their male peers.

Self-Regulation

By and large, women are exceptionally skilled at upholding curriculum targets as online learners. There is even data that suggests women display better learning performance with online learning than their male counterparts (Alghamdi et al., 2020); thus, more research is needed in this area to highlight the boons of flexible learning accommodations for women.

Tools for Success

There are many resources to create, fun, engaging, and modern classrooms for all learners. This section evaluates some that are currently available.

Educational Strategy

Educators can first begin adopting bimodal class delivery by opting for bimodal training if their academic institution offers remote livestream classes. Additionally, another strategy includes advocating for virtual learners when the classroom does not have the tools to produce live virtual classes, and becoming a bimodal champion for those who could immensely benefit from choice in their lecture delivery. Building virtual learning expectations into the course outline and having a strategic rollout for bimodal delivery is absolutely critical for communicating student expectations effectively. One way to integrate bimodal class delivery is by setting and enforcing virtual budgets and attendance grading.

Digital Aids

Because young learners actively engage with online platforms, particularly short-form videos, one key challenge in delivering information lies in identifying the elements that effectively capture their attention amidst the vast array of available content. Using topical, interesting, thought-provoking videos during lectures and conducting a post-viewing analysis is a fantastic way to bridge the communication between in-person and remote learners (Diaz-Infante et al., 2022).

Although lecture slides in PowerPoint are often created in Microsoft PowerPoint, web-based tools like Canva and Prezi incorporate seamless and professional graphics and transitions, creating visually spectacular content for all learners. User experience is a critical component of the learning environment (Robinson et al., 2019). Moreover, a method like gamification is not only a fantastic means of engaging learners, but also shown to have greater social benefits for women, rendering edutainment a viable means to promote class participation in a bimodal fashion (Rincon-Flores et al.,

2021). Tools like Kahoot and Quizlet can provide active learning and knowledge retention.

Hardware Tools

Although many hardware tools are available to support a hybrid learning model, noteworthy resources include the following:

1. Digital pens and writing pads, which allow handwritten notes and annotations to be digitally visible during bimodal classes. This can enhance engagement, facilitate real-time collaboration, and provide a more natural and interactive note-taking experience.
2. Dedicated microphones, such as lapel or boundary microphones, help improve audio quality and ensure clear and consistent sound for both in-person and remote participants. This reduces audio-related issues and enhances communication during hybrid meetings.
3. An audio mixing desk allows for the control and management of audio inputs and outputs in hybrid meetings. It enables audio customization, balancing sound levels, and optimizing audio quality, resulting in a more professional and immersive audio experience.
4. Strategic cameras, including PTZ (Pan-Tilt-Zoom) cameras or multiple camera setups, enable capturing and switching between different perspectives or meeting room views. This enhances visual engagement, enables better focus on relevant content or speakers, and creates a more dynamic and inclusive experience for remote participants.
5. A dedicated video-conferencing system provides a reliable and high-quality video communication platform for hybrid meetings. It offers features like screen sharing, chat, and participant management, ensuring seamless collaboration and effective communication between in-person and remote attendees.
6. Clickers or audience response systems enable real-time polling, quizzes, or surveys during hybrid meetings. They enhance participant interaction, gather instant feedback, and promote active engagement, making the meetings more dynamic and inclusive (Seppala, 2022).

Competitive Advantage

According to Marr (2023) for Forbes's Top 5 Education Trends of 2023,

a revolution is taking place in the domain of online learning, with massive online open courses (MOOCs) exploding in popularity. In schools, remote and online learning means that educators can reach students no matter how isolated their communities are. This could mark a huge step forward in providing equality of access to education. Women represent the significant majority of virtual learners in both graduate and undergraduate levels for institutions that offer this mode of

learning (Best Colleges, 2022). The convenience factor associated with online learning serves as a prominent motivator for women who opt for this style   of   education.

According to Statistics Canada (2020), college and university enrollment rates have been dropping since 2019, with a noteworthy decrease in college enrollment for both domestic and international students. Thus, the everchanging landscape of postsecondary education demands modern approaches to content delivery for women of many lived experiences.

Summary

Gender disparities in academia have persisted for centuries, hindering the advancement of women in higher education. Factors contributing to gender disparities include family structure, wage gaps, transportation limitations, hidden disabilities, cultural norms, caregiving responsibilities, reproductive health concerns, and academic bias (Yousaf & Schmiede, 2017). By embracing bimodal class delivery, colleges and universities can create an inclusive learning environment that caters to the unique needs of women and mitigates barriers to their success. Integrating bimodal class delivery offers flexibility and accessibility, enabling women to overcome geographical and logistical constraints. By combining traditional face-to-face instruction with virtual learning platforms, hardware tools, and educational technologies, women can actively engage in their education and expand their access to knowledge (Vandenbosch, 2022). Bimodal class delivery taps into women's affinity for virtual learning and addresses gender disparities in traditional academic settings, and is ultimately the future of education (Goyal, 2012).

Conflict of Interest
The author declares no conflict of interest.

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