

Article

Seeing and overcoming the complexities of intersectionality

Cate Thomas ^{1*}, Colleen MacMillan ², Merryn McKinnon ³, Hayley Torabi ⁴, Megan Osmond ⁵, Ellen Swavley ⁶, Tamzen Armer ⁷, Kimberley Doyle ⁸

¹ Charles Sturt University; cthomas@csu.edu.au

² CSIRO; colleen.macmillan@csiro.au

³ Australian National University; merryn.mckinnon@anu.edu.au

⁴ Australian National University; hayley.torabi@anu.edu.au

⁵ CSIRO; megan.osmond@csiro.au

⁶ University of Canberra; ellen.swavley@canberra.edu.au

⁷ Science in Australia Gender Equity (SAGE); tamzen.armer@sciencegenderequity.org.au

⁸ Charles Sturt University; kidoyle@csu.edu.au

* Correspondence: cthomas@csu.edu.au; Tel.: +61 407-312-741

Abstract: 1) Background: Intersectionality contests that individuals have multiple characteristics in their identity that cannot be siloed or deemed exclusive to each other. Understanding and utilising an intersectional lens in organisations can increase inclusion of individuals and organisational performance. An educational package known as the *Intersectionality Walk* (IW) was developed by the authors, piloted, and evaluated in order to break down the commonly held descriptors of diversity silos that fragments inclusion, and to understand how various identity characteristics compound disadvantage. The paper outlines the need to transition from siloed views of diversity to a more intrinsic view of identity to achieve inclusivity. 2) Methods: The IW was developed and trialled with a series of work-based scenarios and realistic multifaceted personas. Data collection occurred pre- and post- IW utilising a mixed methods approach. Responses to Likert scale surveys and open-ended questions were captured and analysed via inductive and ground theory perspectives. 3) Results: An improved awareness and understanding of individual knowledge, reflectivity and positionality relating to intersectionality and intersectional approaches was reported on completion of the IW. Further, responses reported how and why organisations can approach and improve inclusivity via using intersectional approaches. 4) Conclusions: The IW as an educational package has a positive impact and is a key linkage for all employers to build an inclusive culture and to harness the talent of all employees. Further research will occur to measure the implemented change in organisations following the IW.

Keywords: Intersectionality; gender equity; Intersectionality Walk; organisational change; inclusion; strategy; STEMM; diversity

1. Introduction

Intersectionality as a concept is growing and literature has been captured on the discourse of intersectionality-theory as a catalyst for social change and on intersectionality as the roots of activism [1-3]. However, the evaluation of intersectionality strategies or those strategies using an intersectional lens to transform organisational behaviour and culture are extremely limited, with even fewer evaluations occurring on what works in the Science Technology Engineering Mathematics and Medicine (STEMM) field [4, 5]. This paper focuses on the nexus of gender equity issues in STEMM organisations and intersectionality; that gender itself intersects with other forms

of inequity, oppression and disadvantage [6-8]. The importance of evaluating the development and introduction of intersectionality education, with respect to positive impact on individuals as future change-makers within organisations is also discussed. This paper highlights through original research why intersectionality is important in redressing simplistic views to inform positive social change at the individual, structural and organisational levels [9].

Intersectionality as a concept was introduced by Kimberlé Crenshaw in 1989 to disrupt the ideologies of how inequalities manifest as distinct silos of individuals by gender or by race rather than considering how different inequalities intersect, compound, and are mutually constitutive rather than mutually exclusive [10, 11]. Intersectionality was originally based in feminism and critical race studies and now is being more widely applied at the individual, structural and political levels, and across disciplines [11-16]. As Bowleg [10] (p. 1267) articulates "Intersectionality is a theoretical framework for understanding how multiple social identities such as race, gender, sexual orientation, socio-economic status, and disability intersect at the micro level of individual experience to reflect interlocking systems of privilege and oppression (i.e., racism, sexism, heterosexism, classism) at the macro social structural level". No longer can we work to a notion of universality or traditional thinking around inclusion and diversity [17] but instead we must work from a framework of intersectionality built on understanding of how the broader context of identity impacts on individuals differently, at different times and in different contexts. Through understanding intersectionality, we can examine how vulnerable populations, for example women of minority backgrounds, have additional facets to their identities or extra challenges to contend with including racism, racialised sexism, ableism, ageism, classism, and homophobia or transphobia. Intersectionality may have similarity to diversity; however, intersectionality challenges the status-quo by taking a holistic approach to human individuality, explores new approaches, enhances understanding and encourages inclusivity at the micro, meso and macro levels [10, 18, 19].

Through understanding intersectionality, we can acknowledge that gender diversity policies may have different outcomes for gender minorities of diverse backgrounds, which can be dependent on their levels of privilege [3, 7]. Organisations that want to attract and retain gender minorities of diverse backgrounds must pay attention to and address this [18]. They may, however, be hindered first by a lack of shared and consistent understanding, and then by traditional thinking around inclusion strategies that too often unintentionally set symbolic boundaries around diversity groups [20]. To fully appreciate the vastness of all human talent, thinking, and knowledge (see Figure 1 below), organisations need a rethink to embrace intersectionality at an organisational and research level – so that systemic, structural, and policy processes and delivery are responsive and inclusive to all.

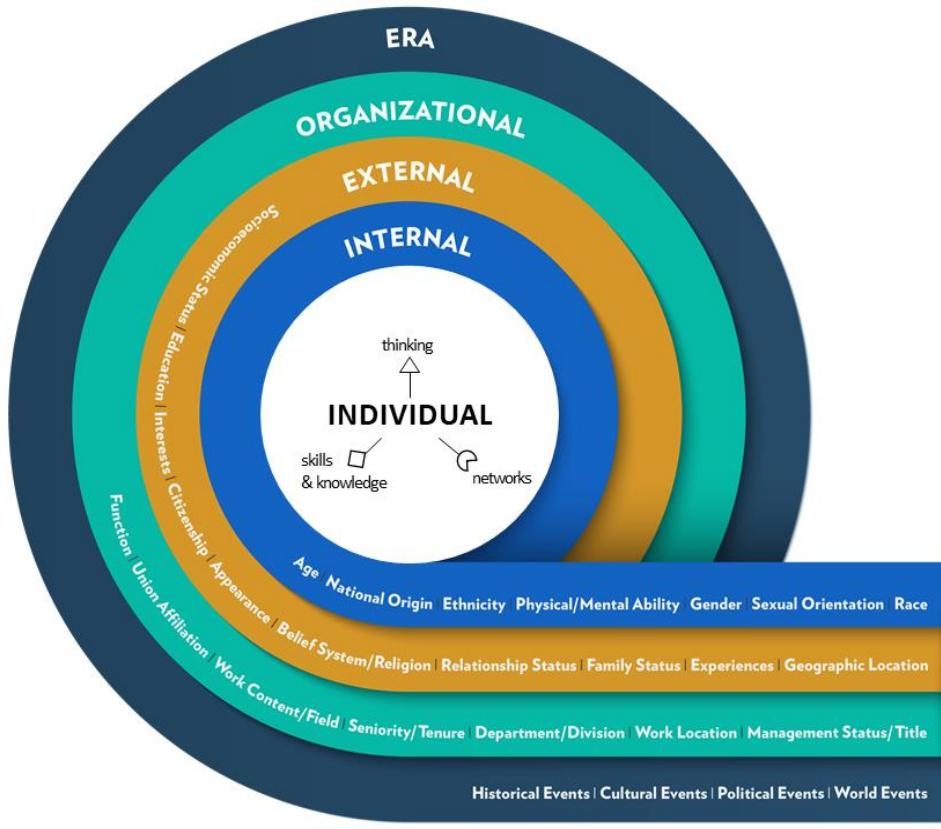


Figure 1. Individual's talents framework, for intersectionality.

As represented in Figure 1, an individual human holds intrinsic diversity of thinking, and acquired diversity of knowledge and skills, as well as networks, at any point in time. The intersections of an individual's gender, ethnicity, cultural background, linguistic background, age (and more) compound to create a unique individual with unique talents. This holds a wealth of potential for organisations, for innovation, and for valuing diverse individuals because it can expand enormously an organisation's quantum of diversity of thinking, knowledge and skills, and connectivity to diverse networks at multiple scales. There is a vast array of literature that discusses the various applications of an intersectional lens from a scholarly and research dimension. This literature provides insights into why intersectionality is important for understanding connections, client characteristics and behaviour, for service agencies for developing more holistic service provision, and for organisations in understanding and advancing equity [11, 19, 21-25]. It also recognises that intersectionality is not solely concerned with disadvantage. "What might seem like oppression in one setting can be experienced as privilege in another. Therefore, even oppression and privilege become contextual and relational" [18] (p.35). What is generally absent from the literature is the description of how to apply an intersectional lens through education and training to close the gap of a lack of knowledge on intersectionality, and why it is important for organisations including higher education institutions, to use intersectionality as a framework to provide environments where all individuals feel sought after for their talents and can thrive [26]. Applying intersectionality has the ability to disrupt and transform social inequalities and organisational rationale to go beyond traditional minority group thinking [27, 28]. The application of an intersectional lens requires critical reflection and thinking in order to move away from traditional gendered organisational structures and processes, and to move beyond the status quo [6, 7]. It challenges STEMM organisations and educational institutions to move beyond their traditional structures and processes, and to incorporate learnings from other disciplines to be transformative. Organisational research and education that utilises an intersectional lens with practical actions is needed to challenge the views and values of organisations [23]. Research should question how practices, policy, and politics perpetuate inequity

and inequality to re-focus on organisational social responsibility and to advance inclusion [23, 29-31]. Organisations should not only respond to diversity and inequalities but rather embrace intersectionality to harness diverse talent, human capital and capability, and cultivate a sense of belonging for diverse individuals. This is imperative for facilitating change and understanding real inclusion in organisations and practice. In a case example, STEMM or Science is not a single dimension and is moving away from a positivist approach to that of an intersectional approach, adopting an intersectional lens in research which provides a platform to reassess prior assumptions and identity formation, and to provide opportunities to redress inequalities such as sexism in science classrooms and labs [32, 33].

The authors identified a need to go beyond discussing theoretical applications of intersectionality to developing an educational approach to take intersectionality from theory to practice and evaluate the impact of the application of intersectionality education [4]. It was recognised that an intersectional approach would facilitate a greater understanding of how multiple forms of discrimination may interact and compound to narrow STEMM contribution and participation at all stages of the 'STEMM pipeline'. Moving from intersectional theory to practice will assist in the development of a diverse and productive STEMM workforce operating at its full human potential. Key to this was the foundation of transformative learning and the building of an evidence base of practice promoting an intersectional view of inclusion, using an education module as a teaching moment pedagogy that required participants' critical self-reflection and self-evaluation of behaviours beyond the nominal universal diversity identities [29]. The consideration of the importance and role of leadership is paramount for an intersectional focus to deliver change, not only by individual behavioural modelling, but by understanding disadvantage, and to challenge thinking, behaviour, structures, policy, systems and power [20, 30, 34]. The educational package was developed to place individuals, using personas, into the shoes of others who have different and potentially vulnerable identity characteristics. This was to challenge the participants' own concepts of intersectionality and to expand their thinking and logic of diversity and inclusion – to go beyond their own world view [8]. The shared recognition of the impact intersectionality has on employees in the workplace and testing of real-time mitigation strategies described here can then be used to enhance the capability of organisations to achieve gender equity outcomes.

The educational package developed was a set of resources, to equip staff members within institutions and organisations to facilitate an "Intersectionality Walk" (IW) - an authentic and experiential activity for a participating group of 10-15 people, to broaden their understanding and appreciation of the impact of intersectionality in the workplace. The IW as an exercise provides a practical demonstration of the compounding effect of multiple factors of identity that can disadvantage people in the workplace. It is an action-based activity on how intersectionality affects an individual's engagement at work, and how identification and mitigation of structural barriers can change this. It also deliberately includes an educational component on how to achieve impactful structural change - through inclusion.

The set of resources developed - the "Intersectionality Walk Pack" - include a briefing video providing an overview of intersectionality in the context of Australia's Women in STEM Decadal Plan and the UK's Athena SWAN Principles; a guide to facilitating the IW; and a downloadable pack with personas and scenarios, ready to pick up and use within any organisation. There is also a "Virtual Intersectionality Walk Tracker" available, to facilitate the IW in online settings.

The IW is conducted in a circle of no more than ideally 15 people. Multiple circles can be accommodated provided there is sufficient room and facilitators. Each circle is led by a facilitator who hands out personas and reads out scenarios which will determine the steps taken by participants. Participants take on a persona, then take one or more steps backwards in each scenario, depending on the compounding factors that impact on their persona in that scenario. If the IW is being conducted virtually, the participants keep a tally of how many virtual steps they have taken. At the completion of the IW, feedback from participants is sought about the changes that could be made to the workplace scenarios to be more inclusive for their persona. The facilitator incorporates the suggested changes into the scenarios and re-runs the IW to assess the effect of the changes.

EXAMPLE SCENARIO: There is a task requiring after hours work, for at least a couple of weeks, over the next 6 months – the exact timing is not known. The team working on the task, are all “Aussie”, white and male. Your manager has asked for more volunteers and has offered a trip to a high-profile conference as an incentive. You have always wanted to have the opportunity to attend this event.

Do you volunteer for the after-hours work? Do you feel your contributions are valued?

EXAMPLE PERSONA: Li is a female research academic. She is from a non-English-speaking background and does not have any family in the country. She is married with a full-time employed spouse, and she is in the late stages of pregnancy.

In the above example, we can see how Li could be impacted by multiple factors of her identity. The team is predominately white, male, and Australian-born. Li, as a woman from a non-English speaking background, may feel less inclined to volunteer for the task. Further, being pregnant and with no family in the country, she is unlikely to be able to attend the high-profile conference, or volunteer for after-hours work. In this instance, we can see how Li would take multiple steps away from the inner circle, and how this demonstrates to participants the compounding effect of intersectionality in the workplace.

The IW was used to research the understanding of the theory and practice of intersectionality and inclusion at the individual, career, and institutional levels. Both qualitative and quantitative data were obtained and analysed, with a focus on the individual and institutional scales. Here we report the findings of this research and discuss the implications of the IW as an educational resource for enabling meaningful and structural inclusive change in diversity and inclusion practices that take a holistic approach to individuals and for realising the benefits for organisations.

2. Materials and Methods

2.1 Evaluation data collection

Evaluation data were collected via a pre- and post-questionnaire with the IW participants. Ethical approval for the study was provided by the Australian National University (2020/005) and Charles Sturt University (H20357) Human Research Ethics Committees. The IW was first trialled at the “Catalysing Gender Equity 2020 Conference” held in February 2020 in Adelaide, Australia. Participants registered to attend the session three weeks prior to the conference and upon registration were sent an invitation to participate in the study, an information sheet and a link to the online questionnaire. Participation in the study was not a requirement for participating in the IW Workshop at the conference.

The questionnaire, hosted on QualtricsTM, comprised closed and open-ended questions that aimed to identify how well participants felt they understood intersectionality and its impacts on careers, and how well equipped they perceived themselves and their workplaces were to respond to intersectional issues. Questions specifically asked how they would define intersectionality, what they felt were important factors in intersectionality (for example religion, gender, sexual orientation, marital status), whether they agreed they had a personal role to play in promoting inclusive practices and policies, and which characteristics of intersectionality were important at their institution. They were asked to reflect upon whether their workplaces recognised or addressed intersectionality and what structural barriers may exist. Participants were also asked to reflect upon whether they felt intersectionality issues had influenced their career, positively or negatively. Responses to the questionnaires were submitted before the IW session at the conference, with each participant using a unique identifier consisting of their mother’s maiden name and their date of birth. These identifiers were used to match the pre- and post-IW responses.

The week following the conference, all registered attendees were sent an email with a link to the follow-up questionnaire. It asked many of the same questions regarding personal understanding of intersectionality and its impacts as described above, how to respond appropriately to intersectional

issues and to again reflect on whether their organisation recognised and/or addressed intersectionality and associated structural barriers. It also asked if any element of the IW changed their perception of intersectionality, positively or negatively, and to comment on the most and least useful parts of the IW for them.

2.2 Data analysis

The open-ended responses were collated and coded by one author, with the code categories derived from close reading of all the words in responses [35] which were then grouped into similar themes through an inductive process of category development [36]. This project used a grounded theory approach, which allows for patterns to emerge from the data. Grounded theory is a qualitative and a constructivist design of inquiry “in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants. This process involves using multiple stages of data collection and the refinement and interrelationship of categories of information” [37] (pg.13). Given there is little known about the understanding and lived experience of intersectionality of individuals within Australian institutions, using an inductive approach [38] such as grounded theory enabled the use of the stories and experiences of participants to identify meaning, emerging themes and establish a preliminary theoretical framework [39]. In turn, these were used to identify potential paths for further analysis. Pseudonyms are used in the presentation of results.

3. Results

3.1. Quantitative assessment of understanding of theory and practice of intersectionality and inclusion at the individual and institutional levels.

Participant quantitative responses to the pre- and post-IW sliding-scale survey questions were analysed. The key results were that initially there was limited understanding of intersectionality and how to practice inclusion, and that the IW improved participants' understanding of both conceptual and practical aspects of intersectionality. More than a third of respondents (36%) reported not having a good understanding of intersectionality prior to the IW; however, after the IW 100% of respondents said they agreed / strongly agreed that they had a good understanding of intersectionality (Figure 2). In terms of individual practice, a third of respondents reported not knowing how to use inclusive behaviours and practices prior to the IW; however, after the IW 100% of respondents reported that they knew how to use inclusive behaviours and practices (Figure 2). Almost half of participants were not aware of institutional strategies to change structural barriers hindering intersectionality prior to the IW, while after the IW 88% of respondents reported that they had awareness of strategies to utilise toward structural change at the institutional level (Figure 3).

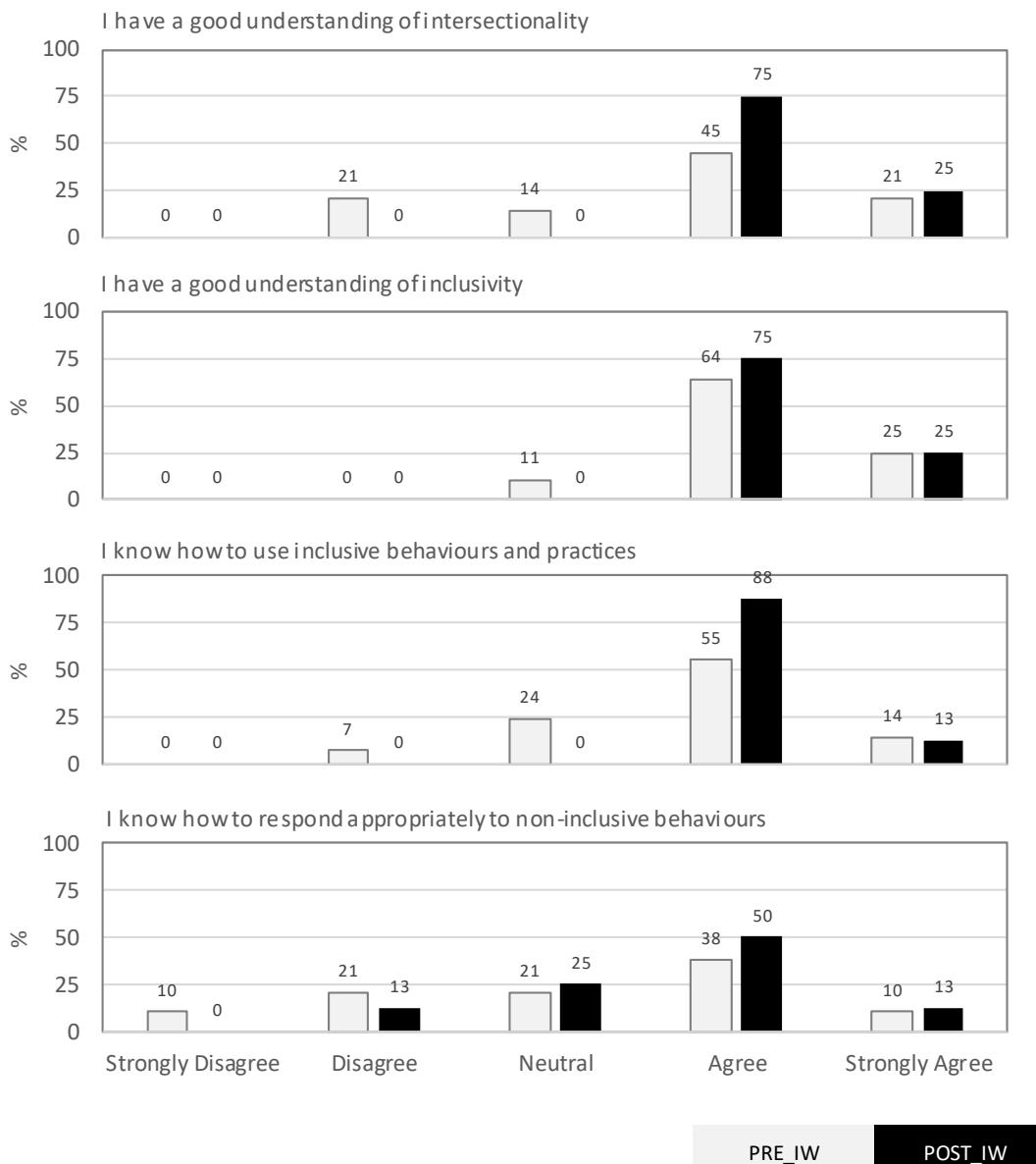


Figure 2. Intersectionality Walk participant survey responses as individuals, before and after the IW. Survey responses are shown as % positive responses for each category. PRE_IW denotes before the IW (N = 29), POST_IW denotes after the IW (N = 8).

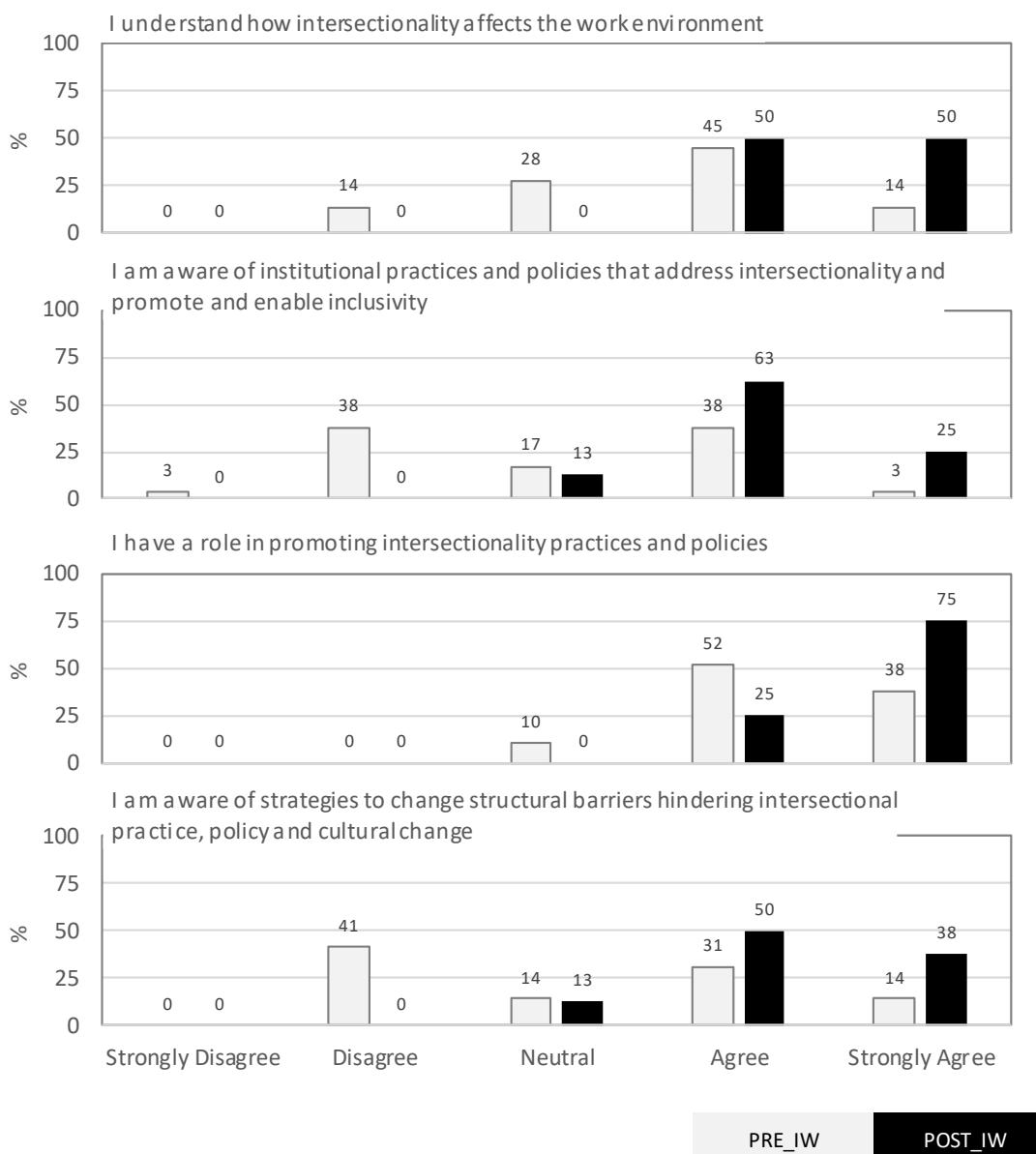


Figure 3. Intersectionality Walk participant survey responses reflection their view of institutions, before and after the IW. Survey responses are shown as % positive responses for each category. PRE_IW denotes before the IW (N = 29), POST_IW denotes after the IW (N = 8).

3.2. Qualitative results

A total of nine matched (pre/post) complete responses were received and retained for qualitative analysis. All respondents were asked whether they felt intersectional issues had impacted their careers, positively or negatively. Four respondents indicated that they felt they had, with the impact considered negative for all but one respondent who felt there were positive and negative aspects:

My direct experience of shame and stigma has given me great insight into parallel experiences of discrimination. I have done a lot of work advocating for reducing boundaries to participating and diffusing the access to power. (Sam, pre-IW response)

One participant did not feel that they were affected and three were unsure if they were impacted or not. It is these three participants where the greatest changes were observed in the post-IW responses. Eden wasn't sure if intersectional issues had affected her in the pre-IW survey or if they had, it was largely positive: "Privilege of being an educated white woman". Post-workshop, her answer was still a maybe, but her interpretation of the impacts had changed to negative: "Caring responsibilities for my three children meant that I stepped away from the paid workforce for 10 years".

Similarly, Riley showed a stark difference in how she perceived intersectional issues had affected her when comparing her pre- and post-responses:

As a young woman with no caring responsibilities, I have experienced gendered stereotypes and the related barriers, but most of my colleagues think I'm white so I don't think I've had too many race/cultural background issues. (Riley, pre-IW)

As a young white-presenting woman without caring responsibilities I am able to do things like go to conferences, travel for workshops, and network internationally, which opens up many opportunities that wouldn't otherwise exist. (Riley, post-IW)

Riley's pre-workshop response seems to imply that because she could 'hide' an aspect of her identity, she felt she was not adversely affected. Post-workshop, the notion of 'hiding' aspects of her identity is still apparent; however, she believes not having some of the other intersectional identities such as mother or care-giver actually provides her with some benefit.

Participants were asked before and after the IW about the structural barriers to addressing intersectional issues in their workplaces. Almost all of the participants identified barriers which arose due to a 'lack of...' something. In the pre-IW survey, a lack of awareness was the most commonly identified barrier ($n = 4$). This lack of awareness was paired with a lack of policies by one respondent, and a lack of resources by another whose comment exemplifies the nature of most answers to this question:

The biggest problem at my institution is the scarcity of resources and the belief that equity work is not worth the cost - this is exacerbated for thinking about how various inequities intersect. (Reid, pre-IW)

In the post-IW survey, four of the respondents retained elements of their pre-IW answers, namely regarding a lack of awareness ($n = 1$), policy ($n = 1$) and resources ($n = 2$). Five respondents changed their answers entirely from awareness and accountability to a lack of data ($n = 2$), a lack of leadership ($n = 2$) and one respondent changing from a lack of accountability to identifying multiple barriers:

Too many to warrant discussion here - not much is in place to address any issues although there are some things in place to improve support of women (Peta, post-IW)

In both pre- and post-IW surveys, the need for data was a recurring theme both as a structural barrier and as evidence that barriers had been addressed. Of the four respondents who listed data, each was consistent in highlighting the need for long term data collection both to help overcome structural barriers, and to indicate evidence that barriers had been successfully addressed as exemplified in Jo's responses:

I think the key structural barriers are about monitoring and evaluating our diversity, and discrimination. In order to know what's wrong in the system, we first need to measure it - and have the accurate and comprehensive, and transparent measures in place (Jo, post-IW, structural barrier)

An evidence-based Monitoring and evaluation measure (MERI) that uses accurate language and looks at all aspects of human diversity and discrimination (Jo, post-IW survey, evidence that barriers had been addressed)

4. Discussion

The results from the study signified that participants, by undertaking the educational IW, had an improved understanding of firstly of what intersectionality is, and secondly, how to bring about structural change at the individual and institutional levels.

In addition to improving understanding, participating in the IW also influenced some participants' perception of how issues of intersectionality may have influenced their careers – positively or negatively - consistent with the idea of oppression and privilege being contextual [18]. What was surprising was that this pilot study found evidence of people choosing which identities to 'make public' in a professional setting, through the responses of one participant (Riley). Perhaps it is not so surprising that someone would choose to obscure their cultural background (or gender identity or disability or any other identity) to avoid additional barriers to professional progress, but rather that evidence of it was found so readily. This highlights systemic issues that illustrate, even within those with a demonstrated interest in Gender Equity Diversity Inclusion (GEDI), organisations are not yet creating environments where people feel their talents are the most important factor in their career.

One key finding from this study is the importance of data, with the lack of awareness, resources and tools to collect data related to intersectionality consistently cited as barriers to progress and the presence of intersectionality data considered an indicator of success. As this study has shown, even those with a vested interest in intersectional issues are approaching the problem with an imperfect understanding of what intersectionality is, let alone how they may facilitate meaningful inclusion at an individual or organisational level. In order to create truly inclusive workplaces, we need data. Data will enable us to develop an accurate description of where we are starting from, set realistic and achievable targets, and to identify potential impediments on the path of progress. In considering the approach to the educational IW, the deliberate *use of personas and carefully crafted scenarios was instrumental to evoke positive change*. The use of personas provided the opportunity for participants to 'think' and 'be' outside their normal practice and behaviour, and thus the personas were successful in expanding the individual's worldview. The personas and scenarios were tools for reflexive practice for each individual – to experience something they previously had not experienced, that is, the 'as close to' real-world lived experiences of others. This practice also aids in a richness and depth of empathy towards others. The use of personas is an evidence-based pedagogy for adult learners to experience difference and to form empathy for others [40, 41]. What this demonstrates is *how 'experiencing' catalyses reflection and change*. By asking participants to 'step into the shoes of others' they gained deeper personal reflection and insights as cited in the qualitative results section. This level of reflection and change would likely not occur for participants in a lecture style professional development.

In the case of the IW, *the personas and scenarios did impact on the self-reporting improvement of awareness and understanding*. Even though the responses pre- and post- IW did show self-reporting improvement had occurred, at this stage the authors have not progressed data collection to the point of knowing if that self-reflection of increased awareness actually translated into changed behaviour and implementation of strategy. Further research design and data collection will occur to allow this.

The data and results are positive; however, it must also be noted that the impact of the level of awareness in the cohort potentially *underestimates the impact of the IW* (pre- and post-knowledge/awareness). Why? By virtue of their attendance at a gender equity conference, the

individuals in this cohort all had a general understanding of gender equity and related issues and were predominately from this field of study; this could suggest an underestimation of the potential impact of this educational tool on those in other fields. As the IW continues to roll out across the Australian Higher Education and Research sector and other key partners, data will be analysed by cohort, and across cohorts, to learn how the IW can be best targeted to reach its full potential.

More education to translate theory to practice is needed. As we witness the term intersectionality being used more frequently, it is now critical that shifts occur for deeper understanding of what it actually is, how it translates and applies to real-world structures, 'exclusion' and 'inclusion', and how to practically change the system through expansive inclusion to realise value at the individual and institutional levels. Measuring what people understand intersectionality to be – such as in the pre-IW used here – is important and useful. It can identify the maturity levels of a group of individuals or even an institution. *Only through reflective education such as the IW will change occur.*

Responses and questions arose from the IW and data collection as to what extent are people hiding/minimising/obscuring elements of their identity in order to not be disadvantaged in their career and being excluded. *The IW provides an opportunity for education to redress a lack of lived experience or awareness.* Using personas and scenarios highlights, for example, the potential negative impacts of being a woman from a minority background on a career trajectory; often such impacts are not recognised until pointed out. Working in a siloed diversity framework will not lead to change. Applying an intersectional lens demonstrates the need for an *intrinsic view of human identity*. Until such time as policy and organisational mantras move away from the siloing effect of diversity characteristics, and move to applying an intersectional lens, the ability of individuals to fully contribute their talents to organisations will not be realised. What the IW has demonstrated is that it provides an opportunity for organisations to consider how various characteristics intersect to compound both/either disadvantage and/or privilege, and to respond. The IW (and applying an intersectional lens) provides a *ground-breaking linkage to organisational performance and culture* if applied as an educational tool to modify behaviour and thinking.

4.1 Limitations and future work

This was a pilot study. All of the participants were at a gender equity and inclusion conference and so likely had a higher-than-average understanding of intersectionality and engagement in diversity and inclusion work. Scaling to a larger cohort of organisational leaders and staff may allow a more robust assessment into the effectiveness of the IW in translating intersectional theory to practice. It may also give insight into potential knowledge gaps between leaders, who often have greater access to development supporting organisational diversity policies and aspirations, and general staff, who typically are offered less developmental support but are nevertheless asked to implement and support those policies and aspirations in their day to day work and interactions. Inviting organisational policy-makers, as opposed to leaders, to participate and comparing pre- and post-IW responses and proposed mitigation strategies may further reveal the impact of perceived structural barriers at the levels and roles where policies are shaped and implemented and where translation of aspiration to implementation can often be frustratingly incremental. The need to measure progress is clear and the next step for the authors. This gap in the data is due to the infancy of the roll out of the educational IW; however, we cannot evaluate progress (or absence thereof) unless we measure.

4.2 Further research

As previously indicated, further research and data collection is required to measure the education impact on the development of organisational systems to respond, that is to the increased awareness and understanding of intersectionality within the organisational environment. The

challenge is moving the data collection from a pre- and post- IW scenario to include a more longitudinal aspect to benchmark and measure organisational change.

5. Conclusions

The IW as an educational initiative has demonstrated its impact to increase awareness and understanding of intersectionality and inclusion. It is potentially a tool for all employers to build an inclusive and responsive culture, and to harness the talent of all employees; the counter scenario is that when institutions do not take a holistic approach to individuals who are diverse and experience intersectional disadvantage, then there is a loss of talent from institutions and limits the competitive edge organisation may hold. An individual's increase in awareness, and understanding of intersectionality, empathy for others, and the acknowledgement of one's own role in promoting intersectional practice leads to positive changes in redressing to institutional structural barriers, systems, and cultures. In order to achieve structural change, inclusion is key; however, this requires education and strategies with an intersectional lens to be employed in all aspects of the organisation. The IW educational package is a ground-breaking linkage for practice, performance and culture, and has been achieved through the careful and purposeful pedagogical approaches chosen. The preliminary pilot data indicates the IW educational package has merit and that data-capture is imperative to measure changes to awareness and understanding of intersectional practices that promote structures, systems and cultures which ultimately advance inclusion. The research that was undertaken and reported is the catalyst for further work and longitudinal evaluation of the impact of the IW educational package on change within organisations.

Supplementary Materials: The Intersectionality Walk resources are available online at <https://www.sciencegenderequity.org.au/resources/>

Author Contributions: Conceptualization of paper, C.T.; Methodology, C.T.; M.M.; and C.M.; Formal Analysis, C.M.; and M.M.; Investigation, C.T.; C.M.; and M.M.; Resources, C.M; C.T; M.M.; and M.O. Data Curation, M.M.; Writing-Original Draft Preparation, C.T.; M.M.; C.M. and H.T.; Writing-Review & Editing, C.T.; M.M.; C.M.; H.T.; K.D.; T.A.; M.O.; and E.S.;

Funding: This research received no external funding.

Acknowledgments: The authors wish to acknowledge the support of Science in Australia Gender Equity for their support in progressing the issue of intersectionality, diversity and inclusivity. We also acknowledge the early contributions of Kerry Elliott (CSIRO) in helping to shape the direction of the IW.

Conflicts of Interest: The authors declare no conflict of interest

References

1. Carastathis, A., *The Concept of Intersectionality in Feminist Theory*. *Philosophy compass*, 2014. **9**(5): p. 304-314.
2. Knapp, G.-A., *Intersectional Invisibility: Inquiries into a Concept of Intersectional Studies*, in *Framing intersectionality: debates on a multi-faceted concept in gender studies*, H. Lutz, M.T. Herrera Vivar, and L. Supik, Editors. 2011, Routledge: London (England). p. 187-205.
3. Severs, E., K. Celis, and S. Erzeel, *Power, privilege and disadvantage: Intersectionality theory and political representation*. *Politics* (Manchester, England), 2016. **36**(4): p. 346-354.
4. Muntinga, M.E., et al., *Toward diversity-responsive medical education: taking an intersectionality-based approach to a curriculum evaluation*. *Advances in Health Sciences Education: Theory and Practice*, 2015. **21**(3): p. 541-559.

5. McKinnon, M., *The absence of evidence of the effectiveness of Australian gender equity in STEM initiatives*. Australian Journal of Social Issues, 2020: p. 1- 14.
6. Acker, J., *Gendered organizations and intersectionality: problems and possibilities*. Equality, Diversity and Inclusion: An International Journal, 2012. **31**(3): p. 214-224.
7. Dennissen, M.H.J., Y.W.M. Benschop, and M.C.L.v.d. Brink, *Rethinking diversity management: An intersectional analysis of diversity networks*. Organization studies, 2020. **41**(2): p. 219-240.
8. Manyweathers, J., et al., *The Lived Experience of Gender and Gender Equity Policies at a Regional Australian University*. Social sciences (Basel), 2020. **9**(7): p. 115.
9. Shields, S.A., *Gender: An Intersectionality Perspective*. Sex roles, 2008. **59**(5-6): p. 301-311.
10. Bowleg, L., *The Problem With the Phrase Women and Minorities: Intersectionality - an Important Theoretical Framework for Public Health*. American Journal of Public Health, 2012. **102**(7): p. 1267-1273.
11. Cho, S., K.W. Crenshaw, and L. McCall, *Toward a Field of Intersectionality Studies: Theory, Applications, and Praxis*. Signs: Journal of Women in Culture and Society, 2013. **38**(4): p. 785-810.
12. Bilge, S., *Intersectionality Undone: Intersectionality from Feminist Intersectionality Studies*. Du Bois review, 2013. **10**(2): p. 405-424.
13. Corus, C. and B. Saatcioglu, *An intersectionality framework for transformative services research*. The Service Industries Journal, 2015. **35**(7-8): p. 415-429.
14. Dhamoon, R.K., *Considerations on Mainstreaming Intersectionality*. Political Research Quarterly, 2010. **64**(1): p. 230-243.
15. Green, M.A., C.R. Evans, and S.V. Subramanian, *Can intersectionality theory enrich population health research?* Social Science & Medicine, 2017. **178**: p. 214-216.
16. Shaw, L.R., F. Chan, and B.T. McMahon, *Intersectionality and Disability Harassment: The Interactive Effects of Disability, Race, Age, and Gender*. Rehabilitation Counseling Bulletin, 2012. **55**(2): p. 82-91.
17. Thomas, G. and N. Macnab, *Intersectionality, diversity, community and inclusion: untangling the knots*. International Journal of Inclusive Education, 2019: p. 1-18.
18. Marfelt, M.M., *Grounded intersectionality*. Equality, Diversity and Inclusion: An International Journal, 2016. **35**(1): p. 31-47.
19. Ruel, S., *The "silent killers" of a STEM-professional woman's career*. Equality, Diversity and Inclusion: An International Journal, 2018. **37**(7): p. 728-748.
20. Vallas, S. and E. Cummins, *Relational Models of Organizational Inequalities: Emerging Approaches and Conceptual Dilemmas*. American Behavioral Scientist, 2014. **58**(2): p. 228-255.
21. Al-Faham, H., A.M. Davis, and R. Ernst, *Intersectionality: From Theory to Practice*. Annual Review of Law and Social Science, 2019. **15**(1): p. 247-265.
22. Hankivsky, O., et al., *An intersectionality-based policy analysis framework: critical reflections on a methodology for advancing equity*. International Journal for Equity in Health, 2014. **13**(1): p. 119-119.
23. Heiskanen, T., et al., *Gender Issues on Change Agenda – Practising Intersectionality in Action Research*. Gender, Work, and Organization, 2018. **25**(5): p. 459-474.

24. Liu, H., *Re-radicalising intersectionality in organisation studies*. Ephemera, 2018. **18**(1): p. 81-101.
25. Ruiz Ben, E., *Intersectionality in the Practice of Mixed Methods Gender Research*. Journal of Research in Gender Studies, 2018. **8**(1): p. 73-88.
26. Carver, P., *Mission Statements - Adopting Intersectionality as a Framework in Higher Education*. Journal of Business Diversity, 2020. **20**(1): p. 17-27.
27. Núñez, A.-M., J. Rivera, and T. Hallmark, *Applying an intersectionality lens to expand equity in the geosciences*. Journal of Geoscience Education, 2020. **68**(2): p. 97-114.
28. Steinfield, L., et al., *Transformative intersectionality: Moving business towards a critical praxis*. Journal of Business Research, 2019. **100**: p. 366-375.
29. Azzopardi, C., *Cross-Cultural Social Work: A Critical Approach to Teaching and Learning to Work Effectively across Intersectional Identities*. The British Journal of Social Work, 2020. **50**(2): p. 464-482.
30. Pullen, A., et al., *Radical politics, intersectionality and leadership for diversity in organizations*. Management Decision, 2019: p. 1-14.
31. Thomas, J., C. Thomas, and K. Smith, *The challenges for gender equity and women in leadership in a distributed university in regional Australia*. Social Sciences, 2019. **8**(6): p. 1-9.
32. Avraamidou, L., *Science identity as a landscape of becoming: rethinking recognition and emotions through an intersectionality lens*. Cultural Studies of Science Education, 2020. **15**(2): p. 323-345.
33. Viruell-Fuentes, E.A., P.Y. Miranda, and S. Abdulrahim, *More than culture: Structural racism, intersectionality theory, and immigrant health*. Social Science & Medicine, 2012. **75**(12): p. 2099-2106.
34. Hendricks, K., et al., *Intersectionality as a matter of time*. Management Decision, 2020: p. 1-16.
35. Miles, M.B. and A.M. Huberman, *Qualitative data analysis: An expanded sourcebook* (2nd ed.). 1994, Newbury Park, CA: Sage.
36. Mayring, P., *Qualitative Content Analysis*. Forum, Qualitative Social Research, 2000. **1**(2).
37. Creswell, J.W. and J.D. Creswell, *Research design: qualitative, quantitative, and mixed method approaches*. Fifth edition. ed. 2018, Los Angeles: SAGE.
38. Alston, M. and W. Bowles, *Research for social workers: an introduction to methods*. 4th edition. ed, ed. W. Bowles. 2018, Sydney: Allen & Unwin.
39. Creswell, J.W., et al., *Qualitative Research Designs*. The Counseling Psychologist, 2016. **35**(2): p. 236-264.
40. Canham, S.L. and A. Mahmood, *The use of personas in gerontological education*. Gerontology & Geriatrics Education, 2018. **40**(4): p. 468-479.
41. Zagallo, P., et al., *Through the Eyes of Faculty: Using Personas as a Tool for Learner-Centered Professional Development*. CBE Life Sciences Education, 2019. **18**(4): p. ar62 1-21.