

# Online or onsite? Comparison of the relative merit of delivery format of Aboriginal cultural-awareness-training to undergraduate chiropractic students

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## Abstract

**Purpose** – The purpose of this paper is to work with Aboriginal and Torres Strait Islander people (ATSI), it is expected that non-ATSI health-care professionals become culturally aware; however, participants' perceptions of the relative merit of cultural awareness training (CAT) formats is uncertain.

**Design/methodology/approach** – The authors compared undergraduate students' perceptions of an asynchronous online format with onsite delivery formats of CAT using a mixed-method design. Students



Authors acknowledge the Aboriginal people of the many traditional lands and language groups of Western Australia where the clinical placements were conducted. They acknowledge particularly the Whadjuk Noongar people as the traditional custodians of this country and its waters and that Murdoch and Edith Cowan Universities stand in Noongar country. Authors pay their respects to Elders' past, present and emerging and also acknowledge their wisdom and advice in their teaching and cultural knowledge activities.

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**Data availability:** Data are available on reasonable request from the corresponding author.

from five successive cohorts ( $n = 64$ ) in an undergraduate programme were invited to complete a post-training survey which gathered quantitative and qualitative data.

**Findings** – Whilst feedback was positive regarding both formats, the onsite format was preferred qualitatively with several valuable learning outcome themes emerging from the results. These themes included; “perceived benefits of self-evaluation of students’ own culture whilst learning about Aboriginal culture”; “encouraging to be provided with scenarios, examples and exercises to enhance cultural awareness” and “engagement with the interactive facilitator approach”. There were differing views about the benefits of learning the history of oppression which warrant further research.

**Research limitations/implications** – Results may be applicable to undergraduate allied health students who participate in clinical immersion placements (CIPs) who participate in Aboriginal CAT.

**Practical implications** – Given the changing dynamic in education forced by the COVID-19 pandemic, more resources may need to be directed to improving online training and possibly combining formats in course delivery.

**Social implications** – The strength of the study is that the authors achieved a response rate of 100%, thus the results are highly significant for the sample. This sample represents 41.3% of chiropractic students who attended CAT and CIPs at this university over the course of 9 years, thus the results could be generalized to chiropractic students who participated in these types of placements.

**Originality/value** – To the best of the authors’ knowledge, this is the first study to compare student perceptions of different formats of Aboriginal CAT for final year chiropractic undergraduate students in Australia.

**Keywords** Adaptive technologies, Intercultural, Education, Ethnicity, Equity, Race, Health occupations, Chiropractic, Curriculum, Cultural competence, Racism, Social stigma, Vulnerable populations, Multiculturalism

**Paper type** Research paper

## Abbreviations

ABS = Australian Bureau of Statistics;  
AIATSIS = Australian Institute of Aboriginal and Torres Strait Islander Studies;  
ATSI = Aboriginal and/or Torres Strait Islander person;

Note: We recognize that there are various epithets adopted by Australians who identify as being Aboriginal/Indigenous and/or Torres Strait Islander. We also acknowledge some people do not prefer the acronym ATSI. As the people our students interact within the context of the immersion placements in Western Australia identify in the main as either “Aboriginal” or “Indigenous”, we have adopted these terms in most instances except when referring to the broader community of Aboriginal and Torres Strait Islander peoples across Australia.

CAT = Cultural Awareness Training;  
CESCEO = Conference of Education Systems Chief Executive Officers;  
CIPs = Clinical Immersion Placements;  
F2F = Face to face;  
MPQ = Multicultural Personality Questionnaire;  
NACCHO = National Aboriginal Community Controlled Health Organisation;  
RA = Reconciliation Australia;  
VPSC = Victorian Public Sector Commission; and  
WACRH = Western Australian Centre for Rural Health.

## Definitions

*Asynchronous education*; A general term used to describe forms of education, instruction and learning that do not occur in the same place or at the same time. It uses resources that facilitate information sharing outside the constraints of time and place among a network of people.

*Synchronous education*; A mode of educational communication where learning or instruction in which the learner receives lessons from the instructor at the same time period but not essentially in person or in the same place.

*Cultural awareness*; Is sensitivity to the similarities and differences that exist between two different cultures and the use of this sensitivity in effective communication with members of another cultural group.

*Cultural awareness training*; Also known as intercultural, cross-cultural and cultural competency training, gives learners the skills they need to understand, work and flourish in and with cultures other than their own.

*Cultural safety*; Actions that recognize, respect and nurture the unique cultural identity of a person and safely meet their needs, expectations and rights. It means working from the cultural perspective of the other person, not from ones' own perspective.

*Cultural respect*; The recognition, protection and continued advancement of the inherent rights, cultures and traditions of a particular culture.

*Cultural competence*; Becoming aware of the cultural differences that exist, appreciating and having an understanding of those differences and accepting them. It also means being prepared to guard against accepting ones' own behaviours, beliefs and actions as the norm.

*Cultural curiosity*; Refers specifically to the wonder, discovery and understanding of people from different cultural backgrounds in the ways they feel, think, communicate, behave and interact. Also encompasses the deep motivation to learn and empathize with different ways of working and living, which can include the culture's values, beliefs, norms and customs.

### *Welcome to country*

A "welcome to country" is a ceremony performed by Aboriginal or Torres Strait Islander Elders or Traditional Owners/Custodians who have been given permission, to welcome visitors onto their traditional land. Protocols for welcoming visitors to the country have been part of Aboriginal and Torres Strait Islander cultures for thousands of years. Traditionally, Aboriginal and Torres Strait Islander groups had clear boundaries separating their country from that of other groups. Crossing into another group's country required a request for permission to enter. A welcome to country occurs at the beginning of a formal event and can take many forms, including singing, dancing, smoking ceremonies or a speech in traditional language and/or English.

### *Acknowledgement of country*

An "acknowledgement of country" is an opportunity for anyone to show respect for Australia's Traditional Owners and the continuing connection that Aboriginal and Torres Strait Islander peoples have to the land, sea, sky and waterways. An acknowledgement of country can be performed by an Indigenous or non-Indigenous person and is generally offered at the beginning of a meeting, speech or formal occasion (RA, 2021).

## Introduction

Contemporary Australia considers itself a multicultural society, notwithstanding the predominant culture for over 200 years being Anglo-Celtic (Forrest and Dunn, 2006). The most recent Australian census found almost half of the population originates from a cultural background other than Anglo-Celtic and around 21% speak a language other than English in approximately 300 languages (ABS, 2018). At the start of the twenty-first century, however, 90% of Aboriginal and Torres Strait Islander (ATSI) languages still surviving the arrival of Europeans were considered endangered (AIATSIS, 2020; Dalby, 2015). Whilst in

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the 2016 census the proportion of people identifying as ATSI had risen to 3.3% (ABS, 2018), many are still facing enormous pressure to lose their traditional cultures and languages to be “successful” in contemporary Australia (Habibis *et al.*, 2016).

Culture is a broad term with many contextual definitions (Gopalkrishnan, 2018) influenced by a range of issues including; gender, class, religion, language, nationality and race which all contribute to a person’s view of themselves (Amorin-Woods, 2016a, 2016b; Bean, 2006; Tribe, 2005). Australian society has become increasingly culturally diverse, with the arrival of non-ATSI people, however, health practitioners still tend to work from a mono-cultural perspective, often being poorly equipped to provide appropriate care as community groups express frustration with the stereotypic tone of clinical practice guides. This is nowhere more starkly illustrated than in the provision of healthcare for the First Australians (Thackrah and Thompson, 2013) where the ongoing health-care crisis reflects “generations of neglect, lack of cohesive public policy and failure to provide sufficient resources” (NACCHO, 2020).

Ethnocentrism permeates Australian society and the inability to incorporate world views into health and educational systems perpetuates domination and discrimination as Aboriginal people and other minorities often feel disconnected from mainstream society. This manifests in distrust towards mainstream services (Durey *et al.*, 2016) and underutilization of health care (Alford, 2015). As an illustration, in community care, health professionals, in particular, medical practitioners often misdiagnose “ethnic” patients with both somatic and mental health issues due in part to ignorance of cultural differences (Cross and Bloomer, 2010; Gonzales, 2018). Similarly, in Australian tertiary education, where the student population has reached unprecedented levels of cultural diversity, curricula and pedagogic practices are largely failing to adjust to the multicultural nature of its population (Gonzales, 2017).

There is a ubiquitous tendency in healthcare and tertiary education to adopt a generic approach of cultural transference which assumes customs, feelings, experiences and perspectives can be replicated across cultures due to culturally held assumptions and worldviews of providers and educators (Ho *et al.*, 2004). In other words, there is an erroneous belief that “if I view it or experience it in this manner, so will the other” (Amorin-Woods, 2016a, 2016b, 2020). Guidelines for multicultural approaches in teaching and therapeutic approaches which fail to provide cultural sensitivity in practice run the risk of providing services that are themselves discriminatory (D. Amorin-Woods, 2020; Ridley *et al.*, 2000). It is known that institutional compliance with a model of healthcare that lacks a robust critical reflection of racist assumptions underpinning service delivery reinforces symbolic violence. The fact that such practices are covert or even unrecognized by the agents involved is insidious, further perpetuating rather than reducing disparities in the delivery of health care (Henry *et al.*, 2004). Failure to acknowledge elements of culture and race in approaches and programmes is likely to negatively impact relationship building, as well as on service outcomes (Helms and Cook, 1999; Kim *et al.*, 2005).

Australian universities aiming to address a diverse multicultural student populations’ learning needs may benefit from reviewing curricula and delivery practices. Beuckelaer (2012) for instance suggested that lecturers who display open-mindedness and cultural empathy are more likely to succeed in multicultural classes (Beuckelaer *et al.*, 2012). Universities have a role in advancing curricula that aim to create an educational environment supporting intercultural competence, challenging biased theory and history in textbooks, adjusting media and educational materials to be inclusive and providing equal opportunity for people regardless of social-financial status. They should also acknowledge

diverse student learning styles, adjust instructional delivery to meet cultural diversity and progress social justice values through social action principles (Gonzales, 2017).

#### *Cultural awareness training*

There are known challenges and opportunities inherent in the provision of health services for people of cultural backgrounds different from the provider. Interrelated concepts such as cultural “awareness”, “competence”, “sensitivity”, “safety” and “curiosity”, are all critical to acknowledge and understand (Amorin-Woods, 2020; Curtis *et al.*, 2019; Truong *et al.*, 2014). When discussing culture, it is important to be mindful of the nomenclature and terminology used, so one needs to be sensitive around the definitive use of the term “cultural competence” (D. Amorin-Woods, 2020). It is naïve to assume practitioners or students can acquire cultural competence by completing an online course or attending a one or two-day training session to become somehow competent in any specific culture (Shepherd, 2019). Not only is this unrealistic but more importantly, it is in itself, discriminatory (D. Amorin-Woods, 2020; Pope-Davis *et al.*, 2003; Ridley *et al.*, 2000). In enhancing the level of knowledge and understanding (of a group, system, agency or in this case a student programme) about a specific culture, there is a need to contemplate the two intertwined concepts of cultural awareness and sensitivity. As part of cultural awareness training (CAT), a participant becomes aware of *some* of the traditions, customs, values and languages of a culture acquired through cultural sensitivity as they ideally engage with respect, curiosity and humility. Cultural sensitivity is an *ongoing* process involving *curiosity*. It does not have an expiry date, working with cultural diversity leads to working from a place of “knowing” and “not knowing” (Amorin-Woods, 2020; Falicov, 1995; Quappe and Cantatore, 2003).

Indeed, cultural awareness workshops generically have sometimes been criticized as being superficial, essentialized, divisive, infantilizing, impractical, prone to cultural overshadowing and lacking in evidence basis. Shepherd (2019), for example, is very critical, highlighting there is little evidence to suggest that cross-cultural training can improve the knowledge, confidence and attitudes of health professionals although acknowledging there is some weak evidence that patient satisfaction with the clinical encounter improves after health professionals undergo cross-cultural training. In addition, he is of the view the evidence for the impact of CAT on anti-prejudice or bias reduction interventions is poor (Shepherd, 2019).

When western educational programmes are based on what is believed to be a “correct” way of teaching this is invariably based on a “one size fits all” model, created in white, middle-class principles which itself risks being a discriminatory approach, devaluing uniqueness and difference in being and relating (Crichton and Scarino, 2007; Raheim *et al.*, 2004). Whilst consideration and inclusion of cultural awareness and cultural sensitivity are needed, it is essential to translate this into developing a working model that considers the difference between *individualist* and *collectivist* peoples, especially when interacting with collectivist cultures such as Australian Aboriginal people (D. Amorin-Woods, 2020). Historically researchers tend to assume that there is little variation across human populations, manifesting in a widespread supposition that so-called western, educated, industrialized, rich, democratic countries are representative of *all* societies (Henrich *et al.*, 2010). To illustrate, 92% of papers in developmental psychology use data collected from English-speaking countries and western Europe (Nielsen *et al.*, 2017). There is a corresponding tendency by non-Aboriginals to view all Aboriginal people as “the same”. These generalizations are incorrect, as across Australia these peoples exhibit great diversity and variation (VPSC, 2021).

### *The Mi Cultvre model*

In clinical practice, the practitioner, regardless of profession, needs to be mindful of being culturally sensitive to the diverse needs of people who consult them from different backgrounds. To this end, Deisy Amorin-Woods, a South American (Peruvian)/Australian cross-cultural Family Therapist and educator (2016) developed a therapeutic model with the acronym; “Mi Cvltvre” [1] which incorporates key themes relevant to working with people from diverse backgrounds. These themes being; “meaning”, “identity”, “community”, “views”, “language and land”, “traditions”, “values”, “roles”, “rituals”, “religion”, “ecology” and “environment” (*DA-W’s-Mi Cultvre Model*) (Amorin-Woods, 2016a, 2016b, 2020). These values and considerations underpin working cross-culturally irrespective of professional health-care context. This model originated from the developer’s experience as a migrant as she observed the systemic tendency to apply monocultural methods of practicing and teaching to multi-cultural groups. This is an inherently biased, discriminatory and racist approach. *Mi Cultvre* is designed to challenge practitioners’ myopic views from the dominant “white” perspective of seeing, being, feeling, learning and relating to the world. So, therefore, this model is used as a prompt for practitioners to be mindful of the multi-layered influences and elements involved in working with culture and cultural diversity. The elements included in the model are embodied in collectivist societies such as Aboriginal Australian cultures. This model was intended to be used or incorporated as part of assessment or screening tools and part of the ongoing clinical practice when working with people from diverse cultures. In the educational realm, this includes consideration of these elements in developing teaching programmes and assessment tools.

When working in diverse health-care settings, practitioners require technical and intercultural skills, as well as “multicultural” attributes as described by Ponterotto (2006). These attributes include; being emotionally stable, secure in one’s multiple identities (e.g. racial, gender, religious and ethnic), intellectually curious regarding novel cultures, culturally empathic, feeling centred with regard to spirituality, cognitively flexible, introspective and committed to social justice (Ponterotto *et al.*, 2006). These skills and attributes are highly valued to function in multicultural environments and are greatly needed in multicultural universities and health-care systems (Gonzales, 2017).

### *Aboriginal people, health care and racism*

Cultural training activities are critical to acknowledge and understand concerning the role of health professionals in maintaining stigma, racism and exclusion towards Aboriginal people or conversely, becoming a tool of positive change. Health professionals in Australia continue to maintain a gatekeeping role of exclusion for minorities that has exacerbated the underutilization of health services by minorities, including Aboriginal people (Gonzales, 2018). Fear and distrust of institutions projected to anyone representing them such as health professionals have further exacerbated the marginalization of Aboriginal people. Being dispossessed of their country and culture, Aboriginal people often find attempts by the dominant (“Wadjela” [2] culture to reach them to be tokenistic (Durey and Thompson, 2012; McKenna, 2014; Truscott, 2000; Wilson *et al.*, 2016). Expressions of distress vary across cultures (Kirmayer, 1989) and it may just be possible that spinal and neuro-musculoskeletal pain in Aboriginal people might sometimes be associated with the loss of culture and stoicism to survive adversity without connection to the country. It is, therefore, important to acknowledge the dimensions of cultural awareness in the complex kaleidoscope of psychosocial mind-body interactions that are intrinsic to Aboriginal peoples’ way of being [...]*if the land is sick, we’re sick* (Rigby *et al.*, 2011).

Experiencing racism has been recognized as an important social determinant of health. The stress of experiencing racism may even manifest in a physical increase in inflammation and a decrease in antiviral response (Thames *et al.*, 2019). Indeed, improved clinical health care and other health promotion initiatives may not be likely to eliminate health inequalities in the absence of fundamental changes in how non-Aboriginal people behave towards Aboriginal people, especially if racism is perpetrated by health professionals (Larson *et al.*, 2007).

*University students.* University student populations (including chiropractic) reflect societal diversity, except for ATSI representation, which remains very low (DESE, 2018). Only 0.4% of Australian chiropractors, for example, identify as being ATSI compared to 3.3% of the broader population (ABS, 2018; CBA/Ahpra, 2020). Thus, in a society that is becoming increasingly multicultural, Australian universities need to consider expanding Aboriginal-CAT, especially as universities accommodate international students who contribute to the increased diversity and milieu of university life, however, are mostly unfamiliar with Aboriginal culture. Anecdotally, non-Aboriginal students often find the allure of the Australian outback enticing and clinical interaction with Aboriginal people fascinating, along with an altruistic desire to provide services to these communities. Consequently, many are motivated to participate in non-metropolitan clinical immersion placements (CIPs). Thus, to mitigate tokenism, it is important to address cultural diversity and social justice from both a local and overseas student perspective.

Educators need to acknowledge the cultural diversity of students and those to whom they provide care in clinical placements. This means curricula need to encompass innovative learning opportunities that address such diversity. Part of this process involves students identifying their own worldview. They may then become aware of biases they may hold about other groups, reducing the likelihood of erroneous generalizations and assumptions being made. Thus ideally, a course that is interactive includes an opportunity to practice holding *cross-cultural conversations* (D. Amorin-Woods, 2020; Amorin-Woods *et al.*, 2021; Rollins *et al.*, 2013). After all, many Aboriginal people highly value narratives and stories around language, land and “country”. If non-Aboriginal students are to interact effectively, they need to mindfully acknowledge these elements (Buchanan *et al.*, 2018).

Provision of learning activities regarding Aboriginal culture is becoming ubiquitous across health-care sectors and organizations in Australia. It is especially important to prepare chiropractors to be culturally aware as the chiropractic profession traditionally has underserved ATSI communities (Adams *et al.*, 2017a, 2017b). As part of their training, Chiropractors must be equipped to provide care in a culturally safe manner which is required by the code of conduct regulating clinical practice (Ahpra-CBA, 2020). Cultural educational frameworks are part of the health sciences in the medical, nursing, occupational therapy, social work and psychology courses to increase cultural knowledge, attitudes and skills (Durey, 2010), however, little is known in the chiropractic educational space.

It is generally assumed that cultural training for health professionals is desirable (Browne and Mokuau, 2008; Chu *et al.*, 2016; Helms and Cook, 1999; Pope-Davis *et al.*, 2003), as is the involvement of consumers in healthcare (Lee *et al.*, 2009), however, there have been few attempts to study perceptions of training among undergraduate health-care students. Little is known about:

- whether CAT results in changes in attitudes and beliefs which may, in turn, lead to improved provision of health services to Aboriginal people (Lin *et al.*, 2009; Shepherd, 2019) or; and
- optimal modes of CAT delivery.

In fact, evidence for the effectiveness of Aboriginal-cultural training programmes in Australia remains meagre (Downing *et al.*, 2011; Shepherd, 2019). Some studies have found that students receiving CAT become more conscious of racism and its pervasive institutional nature, as well as the extent of “white privilege”. Therefore, they are more perceptive in their analysis of possible racism and more inclined to address it and take action (Kernahan and Davis, 2007). It is important to note, on the other hand, that if CAT does not lead to insight and reflection around privilege and dominance, this may be because it is a tokenistic process to satisfy those in power and unlikely to be effective (Shepherd, 2019; Sue and Sue, 2015).

Since 2006 the chiropractic programme at our university has conducted annual CIPs in regional, rural and remote Western Australian townships and Aboriginal communities as part of the final 5th-year chiropractic clinical practicum. These communities typically have difficulty accessing health services. There is some evidence these placements are a step in the right direction to engender positive graduate attributes such as altruism, community service and social conscience and create a propensity to move to non-metropolitan regions after graduation (Amorin-Woods *et al.*, 2019). During the placements, undergraduate chiropractic students under supervision provide pro-bono services according to current evidence-based protocols (Amorin-Woods *et al.*, 2014a, 2017; Amorin-Woods and Losco, 2016; Amorin-Woods *et al.*, 2014b, Parkin-Smith *et al.*, 2015; Parkin-Smith *et al.*, 2017). Before participating in these CIPs, chiropractic students must complete CAT, either via an asynchronous (Farros *et al.*, 2020) online module (WACRH, 2020) or onsite in face-to-face (F2F) sessions delivered by local Aboriginal people.

## Methods

### *Settings and formats*

The onsite (F2F) courses we studied were conducted by different presenters each year at various locations including on the university campus and at external locations such as the offices of supporters of the CIP (mining companies). The presenters were Aboriginal people from Western Australia, sometimes employed by the university and sometimes as paid consultants who provide training as a commercial enterprise. Sessions usually ran over 2 days and often involved exercises such as participants role-playing as “skin-types” (Sharp *et al.*, 1992) and participating in reflective sessions describing their previous interactions with Aboriginal people. The sessions would usually be conducted using PowerPoint and videos and often involved traditional components such as didgeridoo performances and message sticks. The asynchronous online course was one provided by the Western Australian Centre for Rural Health (WACRH) which has been specifically designed for health practitioners and students participating in non-metropolitan placements. It contained text, audiovisual and quizzes to assess learning. Participants are able to download a certificate on completion and chiropractic students attending a CIP were required to do so as evidence of having completed the course.

To date, there have been no published studies specifically investigating perceptions held by chiropractic undergraduate students towards Aboriginal-CAT specifically relating to the format of delivery they receive prior to participation in CIPs. We aimed to compare student perceptions of the relative merit of onsite and online delivery cultural training formats to final year chiropractic, undergraduate students, prior to participation in a CIP.

### *Data collection*

This study used a mixed-method design. We collected data using an online survey portal (SurveyMonkey, 2021). Participants in this study were recruited from five consecutive cohorts



of 5th-year undergraduate chiropractic students. Students completed a CAT training course before their CIP, either asynchronous online (WACRH, 2020) [3] or onsite (F2F).

All students eligible to participate ( $n = 64$ ) received an email invitation to their student email account which contained a link to the online survey. Due to small individual cohort sizes, to preserve anonymity, demographic details such as gender and age were not collected in the survey. These reported details were independently sourced elsewhere from university records.

We used the standard internal university unit feedback survey which contained 13 generic statements around topics such as understanding the course concepts, purpose, preparation, organization, communication and enthusiasm of presenters. There were quantitative options on a 4-point Likert scale and also 3 open-ended questions:

- Q1. What are 1 or 2 specific aspects that helped you learn during this course?;
- Q2. What are 1 or 2 specific aspects that hindered or interfered with your learning during this course?;
- Q3. Please give 1 or 2 specific, practical suggestions on ways to improve this course.

#### *Data analysis*

Upon completing the collection phase, data were exported from the SurveyMonkey platform into SPSS (V.24) for cleaning and statistical analysis. Categorical data were descriptively analysed using frequency distributions and percentages. The statistical assumption that the data were normally distributed was assessed using Kolmogorov-Smirnova and Shapiro-Wilk Tests for skew and kurtosis. Medians and mode were then used to describe data as they were not normally distributed. Missing data were reported as proportions. Differences between groups were assessed using independent samples *t*-tests and Mann-Whitney U test and qualitative thematic analysis performed using Microsoft Excel.

For the conventional content analysis, all comments were initially read and thematically coded under the question headings by 2 researchers independently who are co-authors (LA-W and HG). After all, comments were thematically coded, they were then re-read and coded as being a positive or negative perception of the training or a suggestion relating to a themed question and compared. Conventional and summative content analyses of qualitative data as described by Hsieh and Shannon were undertaken by the two researchers independently (Hsieh and Shannon, 2005). For the conventional content analysis, responses were initially read individually and coded according to the response, then through an open coding process, responses from each group were read individually and coded according to “helped learning”, “hindered learning” or a “suggestion”. Each category was then examined to ensure internal homogeneity and external heterogeneity and confirm associations between them. The qualitative responses were then quantified and tabulated through a summative content analysis process where responses in each of the categories developed for the conventional content analysis were counted and if applicable, expressed as a proportion. If a respondent misunderstood the question, their responses were recorded, however, if they stated “nil” or “nothing” the response was not counted. Qualitative results are presented in a tabulated stepwise manner as identified themes/categories and content analysis.

#### **Results**

All eligible students invited ( $n = 64$ ) responded to the survey in reply to the email invitations, 36 (56%) men and 28 women. In total, 53.1% completed the asynchronous online

course, with 3.1% missing data or skipped the question. We did not collect data on the racial or cultural background of individual students.

*Quantitative results*

Kolmogorov-Smirnova and Shapiro-Wilk tests showed data in all domains to be non-parametric (sig < 0.001), thus comparison of groups used principally Mann-Whitney U tests (*t*-tests are also reported). Categorical data are presented as frequency distributions and percentages with differences between groups presented as *t*-tests and Mann-Whitney U test (Table 1). Of the domains compared, only 3 were significantly different. These domains were; *the subject matter was demonstrated enthusiastically* ( $p = 0.03$ ); *It was clear what I was*

Item	Format	Mean	SD	Mode	Median	Missing (%)	<i>t</i> -test	MW-U
1. The course, gave a good understanding of the concepts covered	online	3.1	0.75	3	3	12.3	0.38	0.54
2. The purpose of the course was well explained as it related to the placement	onsite	3.3	0.44	3	3	10.8	0.06	0.06
	online	3.0	0.71	3	3			
3. The course was well prepared	onsite	3.3	0.46	3	3	12.3	0.1	0.12
	online	3.1	0.71	3	3			
4. The course was well organized	onsite	3.4	0.56	3	3	12.3	0.27	0.30
	online	3.2	0.66	3	3			
5. The course content was communicated effectively	onsite	3.4	0.55	3	3	15.4	0.21	0.23
	online	3.2	0.7	3	3			
6. The subject matter was demonstrated enthusiastically	onsite	3.4	0.56	3	3	16.9	0.04	0.03
	online	3.0	0.75	3	3			
7. The presenter encouraged student participation in discussions	onsite	3.4	0.62	3	4	23.1	0.1	0.09
	online	3.2	0.56	3	3			
8. Scenarios were presented to apply what was learned	onsite	3.5	0.57	4	4	15.4	0.22	0.19
	online	3.1	0.6	3	3			
9. Student responsibility for further learning was encouraged	onsite	3.3	0.73	3	4	16.9	0.19	0.19
	online	3.0	0.76	3	3			
10. The course was accommodating to student differences	onsite	3.2	0.67	3	3	33.8	0.21	0.23
	online	3.2	0.56	3	3			
11. The course format was helpful if difficulties were encountered	onsite	3.4	0.5	3	3	32.3	0.97	0.75
	online	3.3	0.59	3	3			
12. It was clear what I was expected to learn in this course	onsite	3.3	0.81	0	3	16.9	0.04	0.05
	online	3.1	0.58	3	3			
13. The course provided me with useful feedback	onsite	3.4	0.56	3	3	23.1	0.03	0.03
	online	2.8	0.75	3	3			
<i>t</i> -test sig two-tailed					Missing	18.6		

**Table 1.**  
Quantitative  
comparison of  
groups

expected to learn in this course ( $p = 0.05$ ) and *The course provided me with useful feedback* ( $p = 0.03$ ). One domain; *the purpose of the course was well explained as it related to the placement* was close to significance ( $p = 0.06$ ), with the remainder not significantly different. Students were positive towards both formats, the significant differences being related to the format of delivery.

*Qualitative results*

Responses to three questions in relation to the method of delivery were categorized on: helped learning, hindered learning and suggestions for improvement were quantified and tabulated by separating the responses by topics under each category. The results of the data transformation are presented as raw numbers and proportions within the category (Table 2). With respect to the data transformation analysis, the majority (67.9%) of qualitative responses to *helped learning* across the 13 domains favoured the onsite format, whilst the majority (55.2%) of comments in *hindered learning* concerned the asynchronous online format. The clear majority (86.4%) of positive suggestions were directed towards the onsite format and just over half (53.8%) of negative suggestions were for the online format.

Themes and categories	Course	Helped		Hindered		Suggestions			
		(n)	(%)	(n)	(%)	Positive (n)	(%)	Negative (n)	(%)
<i>Learning outcomes</i>									
Allow self-evaluation	Online	6	7.7	0	0.0	0	0.0	0	0.0
	Onsite	7	9.0	1	3.4	0	0.0	0	0.0
Conflicted on aboriginal history and racist attitudes	Online	2	2.6	3	10.3	1	4.5	0	0.0
	Onsite	8	10.3	2	6.9	3	13.6	1	4.5
In-depth understanding	Online	4	5.1	1	3.4	0	0.0	0	0.0
	Onsite	10	12.8	0	0.0	2	9.1	0	0.0
Scenarios enhanced motivation for placement	Online	3	3.8	0	0.0	0	0.0	0	0.0
	Onsite	3	3.8	2	6.9	3	13.6	0	0.0
Engagement with presenter was conducive to learning	Online	0	0.0	0	0.0	0	0.0	0	0.0
	Onsite	13	16.7	1	3.4	0	0.0	0	0.0
<i>Logistics</i>									
Format	Online	6	7.7	4	13.8	1	4.5	5	22.7
	Onsite	10	12.8	2	6.9	8	36.4	2	9.1
Technology	Online	2	2.6	2	6.9	0	0.0	0	0.0
	Onsite	2	2.6	1	3.4	0	0.0	2	9.1
Misunderstood question	Online	0	0.0	1	3.4	1	4.5	0	0.0
	Onsite	0	0.0	2	6.9	3	13.6	0	0.0
Length	Online	0	0.0	5	17.2	0	0.0	2	9.1
	Onsite	0	0.0	0	0.0	0	0.0	0	0.0
Location/timing	Online	2	2.6	0	0.0	0	0.0	0	0.0
	Onsite	0	0.0	2	6.9	0	0.0	1	4.5
<i>Total responses received</i>	Total responses	78		29		22		13	
	Total online	25		16		3		7	
	Total onsite	53		13		19		6	
	Onsite % of category	67.9		44.8		86.4		46.2	

**Table 2.**  
Quantification of qualitative responses (data transformation)

**Notes:** Nil, none, nothing responses not counted in the table, some responses addressed multiple categories, % = within categories

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### Themes

Two main themes each with five categories emerged from the qualitative data. The first theme was learning outcomes and course content such as scenarios, self-evaluation, challenging beliefs, understanding and engagement with the presenter. The second theme concerned logistical issues such as technological challenges, timing, convenience and misunderstandings.

### Learning outcomes

Students recognized a benefit in CAT from self-evaluation of their own culture whilst learning about Aboriginal culture in both formats. Both onsite and online CAT formats were perceived to encourage insight into their morals and values and the relevance of reviewing these to acknowledge those of Aboriginal people towards constructing a nation that respects the contribution of all members in the community. In response to the survey question; “What are 1 or 2 specific aspects that helped you learn during this course?”, respondents shared learned insights such as; “Recognising and respect for the special place, culture, rights and contribution of Aboriginal and Torres Strait Islander peoples” and; “where good relationships between First Australians and other Australians become the foundation for local strength and success” and “the enhancement of our national well-being” (*onsite*) and; “It helped me to learn cultural differences and ensured that I was prepared and showed respect to these differences” (*online*).

There were conflicting views about learning the history of Aboriginal oppression and some evident persistent “closed-minded” attitudes, especially among the online participants. For example, we note critical comments from one respondent after completing the online course. The response (in part); “remove this piece of crap and lip service to the left-wing apologists that hinder progress and racial understanding. I was extremely annoyed I had to do this. I am Australian, I come from the bush, I’ve been to university I don’t need a course to tell me what I already know”, illustrates the need for future evaluation of CAT effectiveness in changing attitudes. Whilst outside the scope of this study, the effectiveness of either format in changing attitudes or beliefs is an important consideration for future studies in CAT.

Although students appreciated the value of learning from the past, some found that focusing on the past did not allow them to identify current issues, for example; “Maybe explain that some people of Indigenous descent don’t adhere to the traditional ways anymore. I spent a whole new consult avoiding eye contact with a fellow who was rather confused with my odd behaviour” (*online*) and; “Heavy emphasis of old culture and the culture of today was ignored, which is extremely different” and, “The course didn’t really address cultural experiences we could come across when in the Aboriginal communities whilst on placement. The course covered a lot of history, which is important, in general, however, less important for placements such as this” (*onsite*). These responses highlight the importance of not overgeneralizing when interacting with Aboriginal people and the risk of CAT creating essentialized behaviours in students.

Although both onsite and online courses highlighted unfamiliarity with Aboriginal culture, there was a sense that some content of the presentation did not have a relevant context. It is apparent that some students’ unfamiliarity with Aboriginal culture did not allow them to perceive the role of history and discrimination as elements of understanding current societal challenges. Some found it encouraging to be provided with scenarios, examples and exercises to enhance their cultural awareness and were, thus, motivated to engage with Aboriginal culture on their clinical placements. For example, in response to what helped learning, one shared; “Examples/exercises where you put yourself in other

people's situation and see that the solutions to some issues are not always as simple as you think they may be" (*onsite*). This quote highlights the relevance of demonstrations, practical activities and bringing scenarios to class as important activities to enhance learning and ascribe meaning. This feature is particularly relevant when people try to gain an insight into an unfamiliar culture as shared by an onsite student; "Learning cultural differences and acceptance; hand signals and how Aboriginal people communicate with each other" (*onsite*). Facilitating awareness of a culture different from "western" values and worldview reduces the anxiety of the unknown and consequently encourages motivation and enthusiasm to work together.

Students expressed the desire for a more in-depth understanding and meaning within the Aboriginal culture in the context of the chiropractic profession, illustrated in an online course suggestion; "Have a greater focus on (chiropractic) management of Aboriginal people in culturally appropriate ways".

Many found the qualities and skills of the presenter conducive to learning in the onsite sessions. Some examples are; "The presenters' communication was friendly and somewhat personal, removing formality helped the messages to be conveyed" and; "recognizing and respects the special place, culture, rights and contribution of Aboriginal peoples; and where good relationships between First Australians and other Australians become the foundation for local strength and success; and the enhancement of our national well-being", then; "The openness and calmness of the speaker when talking about subjects such as racism and public perception" and; "The presenter was great".

Familiarizing students with Aboriginal culture is facilitated more by the onsite F2F interactive nature of presentations which cannot be present in an online format. This is again illustrated by an online course response; "This course did not help with ways to approach, talk and effectively manage Aboriginal people in culturally appropriate ways" in contrast to; "Great presenter- very knowledgeable and approachable [...] It (the course) contains learning resources which were interactive based to help inform about Aboriginal history, culture and current issues" and; "It (the course) prepared you for what to expect during the trip especially to Aboriginal communities" (*onsite*). This representative collection of responses demonstrate that students valued the onsite presentation over the online course as displaying the whole interaction between presenter and course attendees. Many aspects of the interactivity, subtle communication patterns, nuances in body language and relational atmosphere created by onsite presentation are apparently lost in an asynchronous online course.

#### *Logistics of course delivery*

The other themed group of categories was labelled as logistical issues of course delivery. These items consisted of comments about the challenges encountered regarding format, technological malfunctions such as computer freezing, the length of the course and the flexibility and timing around when students were able to complete the course. A selection of examples of the logistical issues encountered for each format is reported in this section.

#### *Online course logistical responses*

Participants in the online course were generally positive of the format feedback; "The ease of guiding myself through the course -the feedback that the answers gave especially when something was wrong. It allowed me to understand why my response was wrong and which one and why a certain response was correct". However, several mentioned technical problems with the audio-visual components of the online course; "The computers in the Chiropractic clinic would freeze and crash" and, "Some videos didn't work on my computer".

The majority of responses critical of the length of the course were directed at the online format, for example; “Some of the text was too long and I found it difficult to get through such a volume of text”, “Being an online course, it became quite tedious” and, “I found it quite boring and found myself tuning out”. Conversely, students found the convenience of the online format to be an advantage; “Flexible time – I could learn it anywhere and at my own time”.

#### *Onsite course logistical responses*

The responses from the onsite participants towards the onsite format of the course were generally positive; “The presentation was well presented and clear (PowerPoint), entertaining and informative”. However, several reported problems of a technological nature such as; “Could not see PowerPoint” and, “The lecture was a bit broken up as the presenter didn’t have the correct lecture slides with him, so he had to chop and change between multiple old lectures”. Several students found the inflexibility of the onsite course timing to be a negative aspect; “We did the course at a busy time in our university course”.

### **Discussion**

The advent of the COVID pandemic has necessitated a complete rethink of education delivery and in most cases, educators have been forced to provide effective teaching online. This shift in pedagogical medium is forcing academic institutions to adapt and quickly rethink how they deliver teaching and learning. Paul and Jefferson (2019) found no significant difference in student performance between online and F2F learners overall and they concluded there is a similar ability to translate environmental science concepts for non-STEM [4] content in both traditional and online platforms (Paul and Jefferson, 2019).

We found, however, that differences in student perceptions concerning the format of delivery of CAT specifically contextualized for Aboriginal Australians by chiropractic students emerge through analysis of qualitative data. We noted the significant differences ( $p < 0.05$ ) quantitatively related to domains that were not in common across both formats which were; enthusiastic demonstration; clarity of outcomes; and feedback (purpose was borderline significance). These significant differences are important, highlighting the advantage inherent in onsite delivery of CAT, as purpose, outcomes, feedback and enthusiasm are vital components of learning. Some specific examples that can be incorporated in CAT are a mix of experiential case scenarios in class and practical activities linked to intercultural interactions that are likely to facilitate multicultural learning (Mak *et al.*, 1999). Our study corroborates previous findings that experiential activities around the issues of intercultural effectiveness modelled by instructors may have a greater impact on university students than just delivering generic content (Browne and Mokuau, 2008). Therefore, incorporating culturally sensitive approaches and models such a *Mi Cultvre* will assist in achieving this.

An online CAT delivery format has advantages in likely being cost-effective and straightforward to deliver once the modules are created (we did not investigate the financial cost of creating, updating and delivering either course format). Some participants complained the online course was “long” and “boring”. The online format, however, allows uniformity and the ability to verify completion. Onsite courses may be more individually expensive, however, they allow for direct interaction with Aboriginal people as presenters and for rapport to be created at a presenter/participant level (however, again, we did not investigate relative cost). Components such as feedback, question and answer, body language, emotion, role-playing and contextualized activities are also intrinsic to the onsite format. Onsite sessions allow for personalization, feedback, questions and answers, emotional interactions and nuances concerning body language among other features.

Given the qualitative responses for both formats were generally positive, with the strengths and weaknesses of each format identified in our study, we recommend consideration be given to *combining formats* when providing students with CAT where feasible. For example; all students could be required to complete a generic online course and then a contextualized onsite course before or during participation in a CIP, a strategy subsequently used in at least one CIP collaborating with our university. Of course, this is separate from following important protocols such as “acknowledging country” and being “welcomed to the country” when visiting or working on Aboriginal Lands (RA, 2021). Our findings corroborate other studies that have found students express a strong preference for class discussions to be conducted F2F, reporting that they felt more engaged and received more immediate feedback, than in online discussion. Asynchronous online and F2F activities may lead to similar levels of academic performance, but it seems that students would rather do written activities online but engage in discussions in person (F2F). Course developers could aim to structure courses so that students can benefit from both the flexibility of online learning and the greater engagement experienced in onsite F2F discussion (Kemp and Grieve, 2014).

The student’s feedback emphasizes the importance and applicability of the *Mi Culture* model to CAT, as contemporary ideas and issues are also intrinsic to the model. Regardless of the duration of the CAT course, the *Mi Culture* model highlights and encourages a process of an *ongoing commitment* to learning *without an expiry date*. Learning is *continuous*, thus addressing the “tokenistic”, “lip service” criticisms expressed by students.

The *Mi Culture* model makes explicit content to be included in CAT training. All the elements of the model are relevant. Students’ responses revolve around the relevance of “meaning” in Aboriginal culture. “Meaning-making” for Aboriginal people that takes place in a given situation, time and place is constructed in fluid and regional cultural and social contexts. So “meaning-making” can only take place by adopting a humble and respectful attitude of “cultural innocence” through a novel encounter, involving deeply listening to the meta-cultural messages and cultural discourses (Amorin-Woods, 2016a, 2016b).

The students highlighted several elements such as “customs” and “language”. As the model explains, language is saturated in culture and it is through language, as well as customs that culture can be appreciated, expressed, explained and understood (Amorin-Woods, 2016a, 2016b). Another element, which was raised was that of “community”. It is essential to be sensitive and respectful when entering into another’s space, community and land because Aboriginal people possess a deeply layered and life-long relationship to “country”, encapsulating land, home, community, family and “being” (RA, 2021).

An interactive course that encourages participation and presents scenarios of working with Aboriginal populations, as well as including activities and role-playing, is already known to enhance communication and learning opportunities for students (Lumby and Farrelly, 2009; Torino and Donnelly, 2011). Thus, not unexpectedly, we found in this study that an onsite learning opportunity cannot be completely replaced by online training as an online format lacks the richness of the F2F experiences including body language and interaction with people of Aboriginal background.

Finally, it is opportune to observe that these data were collected and the paper originally largely drafted prior to the COVID-19 pandemic. Students, educators, health professionals and society generally are all living the experience of the COVID-19 pandemic as a collective challenge. The societal and educational chaos is real and ongoing. Australian society, in common with the majority of the world, is dealing with challenges including increased xenophobia which accentuates the need for effective CAT (Amorin-Woods, 2016a, 2016b). Whilst we are all impacted, it is different depending on where we are located, on our culture, our ecological system and the politics of the setting (Amorin-Woods, 2021a, 2021b; Amorin-Woods *et al.*, 2021, 2020).

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Thus, with the move towards an online format of delivery of education and training, an online format's limitations may be superseded by a pragmatic reality. Online formats of delivery may constitute the only viable option in some contexts.

### *Strengths and limitations*

The strength of the study is that we achieved a response rate of 100%, thus the results are highly significant for the sample. Further, this sample represents 41.3% of all chiropractic students who attended CAT and CIPs at this university over the course of 9 years, thus the results could be generalized to chiropractic allied health undergraduate students who participated in these types of placements. In retrospect, it was apparent that the instrument as generally applied for unit feedback at the university did not allow enough granular or sophisticated data analysis. There is a need to incorporate more open-ended questions to capture more qualitative data, consequently, the survey instrument was of limited utility, and therefore it is recommended the use of another outcome measure such as the multicultural personality questionnaire be considered for future studies (van der Zee and van Oudenhoven, 2000). As this study was only evaluating student perceptions, no conclusions are drawn with respect to the effectiveness of either format. Another limitation is that the onsite sessions were not all presented by the same person or in a standardized format and content, thus we were not able to control for variations in the delivery of these courses. Finally, this study was limited to CAT and does not address other important protocols such as acknowledgement and welcomes to “Country” (RA, 2021).

### **Conclusions and recommendations**

Due to the advent of the COVID-19 pandemic, a number of adjustments have been made in teaching, learning and student engagement as most teaching and learning moved online, thus an evaluation of relative perceptions of CAT format delivery is timely. In the aftermath of the COVID pandemic, it is vital this gap in the evidence be addressed. The “new normal” dynamic posed by COVID-19 has meant that educators are searching for ways to continue to support student learning outside the traditional F2F setting. Consequently, many are looking towards online solutions.

In early 2020, most universities around the world and in Australia, transitioned from relatively low levels of online content to nearly 100% by virtue of necessity, almost overnight. So, what will happen in a transition to a “new normal”? Most studies to date have evaluated real-time learning whereas we studied a preformatted (asynchronous) module. Studies such as ours are vital to shedding light on the possible ramifications for education in the aftermath of the pandemic.

Although students qualitatively preferred the onsite format of CAT delivery over online, the difference was not quantitatively different as students responded favourably towards both formats. However, we found onsite learning sessions cannot be completely replaced by online training. An interactive onsite course encourages participation and presents scenarios, as well as including activities and role-playing enhances communication and learning opportunities for students. Notwithstanding, in the post-era of the COVID-19 pandemic, online delivery modes may constitute a workable format. Where feasible, a combination of formats is highly recommended with consideration of the *Mi Culture* Model being incorporated in CAT curricula.

### **Notes**

1. In the Peruvian Quechua language  $v = u$ .



2. Wadjela = white person in Noongar language.
3. The online module is regularly updated.
4. STEM = science technology engineering and mathematics.

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