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Emancipatory Pedagogy Through Serialized Heuristic Reflection: Fostering Self-Awareness of Dental Students' Prejudicial Beliefs

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EMANCIPATORY PEDAGOGY THROUGH SERIALIZED HEURISTIC REFLECTION: FOSTERING SELF-AWARENESS OF DENTAL STUDENTS' PREJUDICIAL BELIEFS

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ABSTRACT

EMANCIPATORY PEDAGOGY THROUGH SERIALIZED HEURISTIC REFLECTION: FOSTERING SELF-AWARENESS OF DENTAL STUDENTS' PREJUDICIAL BELIEFS

by Deborah Narcisso

This study investigated dental students' prejudicial beliefs towards underserved patient populations as an upstream constituent of provider attitudinal barriers to care. The objectives were to explore the scope and nature of prejudicial beliefs, to assess the value of critical reflection as essential preparation for patient care, and to identify insights that would inform the preclinical curriculum that, ultimately, reduce oral health disparity.

The research used an integrated approach with qualitative and quantitative methods. An original serialized reflection assignment was introduced into the preclinical curriculum of 142 first year dental students to critically journal about the legitimacy of their a priori prejudicial beliefs. A purposive sample of 44 participants was obtained. Journals were analyzed for emergent themes and questionnaires for relevant context.

Results indicated dental students identified a range of prejudicial beliefs and, through self-direction, experienced awareness and transformation of their beliefs. Participants agreed that reflection had personal and educational value. Insights were identified that could enhance the preclinical curriculum. This contributes to the evidence base on pedagogical strategies historically focused on post-experiential reflection. Themes that were explored include concepts defining the nature of prejudicial beliefs that could guide and inform professional practice. A need was identified to conduct grounded theory research on awareness of prejudicial beliefs as an antecedent to attitude change.

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Despite advances in oral health care, America's marginalized populations continue to experience greater oral health inequities and deteriorating health. Rarely targeted as a causal factor are provider attitudes as a barrier to care. In an effort to eliminate oral health disparity, academic dentistry has applied numerous pedagogical methods to cultivate culturally competent dental students. Post-experiential reflection has proven valuable as a strategy for students to explore their experiences with diverse, high risk, and special needs patients; however, it is not without its challenges. Still largely unexplored is the potential of self-directed methods that engage dental students to reflect on their prejudicial beliefs before providing patient care.

The University of the Pacific Arthur A. Dugoni School of Dentistry has been actively engaged in ongoing curriculum reform, with a focus on cultural competency and social and emotional development. Within this context, this study introduced an original serialized reflection assignment into the preclinical curriculum. The purpose was to engage dental students in critical reflection of their own prejudicial beliefs, stimulate awareness of the potential impact of those beliefs, and encourage action to further explore and modify a priori prejudice in the interest of effective professional practice.

The aim of this study was to determine if self-directed, serialized critical reflection on the legitimacy of dental students' own a priori prejudicial beliefs has intrinsic value in a preclinical curriculum. The broader goal was to contribute to the evidence base of critical pedagogical strategies used to reduce prejudicial attitudes as a barrier to care such that, ultimately, oral health outcomes are improved.

Problem Statement

An immigrant Filipino family of six unexpectedly terminated care at its dental office; money was not the deciding factor nor was convenience of appointment time or office location. The parents in particular were in significant need of competent oral health care due to diagnoses of severe periodontal disease, compounded by medical comorbidities of hypertension and diabetes. This combination has potentially life-threatening consequences. Despite concerted efforts by its dental professionals to comprehensively educate and deliver technically competent care, the family abruptly transferred out of the dental practice never to be seen again. This anecdotal experience, drawn from professional practice, illustrates the subtle yet powerfully influential effect of human dynamics in the provision of culturally respectful care in a rapidly changing and multicultural world.

Despite attempts to address cultural competency through dental workforce strategies (Hilton & Lester, 2010), oral health outcomes among the underserved continue to decline (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention [HHS CDC], 2000). As the United States becomes increasingly diverse and inequities persist, dental leaders continue to search for solutions aimed at reducing oral health disparity. Understanding the scope of the problem begins with a description of dental diseases and its impacts, the factors contributing to oral health disease, and the range of mitigating strategies currently in use to provide equitable care.

Nature of the problem. David Satcher, M.D. concluded in the U.S. Surgeon General's report that "a 'silent epidemic' of oral diseases is affecting our most vulnerable citizens" (U.S. Department of Health and Human Services, Office of the Surgeon General [HHS OSG], 2000, p. 1). This epidemic is due in part to two dental diseases: tooth decay and gum disease ("Oral health topics," n.d.).

Tooth decay, or dental caries, is a transmissible bacterial infection. Bacteria thrive in oral environments high in carbohydrates and low salivary pH (Featherstone, 2004). If left undisturbed due to inadequate oral care, bacteria will mature into acid-producing plaque biofilm. These acids can decalcify tooth enamel and, if left untreated, may lead to dental caries. Caries can progress to extreme pain, suffering, and tooth loss. In rare cases, untreated infection may even lead to death ("Oral health," 2007; Otto, 2007).

Gum disease, or periodontal disease, is an infection of the gums, bone, and supporting ligaments. Gingivitis is a reversible consequence of bacterial biofilm; however, if left untreated, it may progress to periodontitis. Signs and symptoms of periodontitis may include loss of bone, loose teeth, bad breath, bleeding, and pain. Advanced periodontitis may also result in tooth loss ("Types of Gum Disease," 2010).

Unfortunately, the loss of teeth is often erroneously viewed as a natural consequence of aging instead of a preventable infection ("What is the burden," 2009). Unlike many medical conditions, advanced dental diseases are not self-curing. The extensive loss of tooth structure from decay and the loss of alveolar bone due to periodontal disease are largely considered permanent (Kwan & Peterson, 2010).

Impact of the problem. Dental diseases are both pandemic and endemic. Together, they constitute a major public health problem in terms of morbidity, mortality, and quality of life (HHS OSG, 2000; Peterson, Bourgeois, Ogawa, Estupinan-Day, & Ndiaye, 2005). According to the World Health Organization (WHO), the prevalence of dental caries and periodontal disease is a shared global burden, especially among marginalized populations ("What is the burden," 2009). Few people escape being victim to dental diseases; however, those at greatest risk are the underserved and high risk populations: young children and older adults; the medically compromised, homebound, or institutionalized; those with developmental disabilities; the homeless; racial and ethnic minorities; and those in low income groups (Allukian, 2008).

As the nation's guiding health promotion policy framework, Healthy People 2020 identifies oral health as a national focus area (HHS CDC, 2010). As shown in Table 1, several key oral health objectives are presented with the 2010 baseline disease prevalence report, along with their respective 2020 10% target reduction goals.

Table 1

Selected Healthy People Oral Health Objectives and Prevalences

Age	Objective	2010 Baseline Prevalence %	2020 Target Prevalence %
6-9	Untreated caries	28.8	25.9
13-15	Caries experience	53.7	48.3
35-44	Untreated caries	27.8	25.0
45-64	Permanent tooth loss	76.4	68.8
45-74	Destructive periodontal disease	12.7	11.4

Note. Adapted from *Healthy People 2020 Summary of Objectives: Oral health* (HHS CDC, 2010).

Dental caries experience is defined as a history of decay due to existing restorations, extractions, or current decay. For America's children, dental caries ranks as the most prevalent of all chronic diseases (HHS CDC, 2000). In California's 2006 Oral Health Assessment ("Mommy, it hurts," 2006), 70% of third graders had caries experience, 26% had untreated caries, and 4% had active pain and infection. Children at greatest risk were Latino or other minorities, the uninsured, and low income groups.

The American adult profile is not much better. Dye et al. (2007) reported oral health data from the National Health and Nutrition Examination Survey (NHANES) for the years 1999-2004. Caries prevalence for adults aged 20 to 64 years averaged 92%, with females averaging a slightly higher prevalence (93%) than males (91%). Untreated caries prevalence for adults aged 20 to 64 years averaged 25%. Rates were highest for Blacks (40%) and Mexican Americans (38%) as compared to Whites (21%). Root caries prevalence for Black adults aged 20 to 64 years was greater (21%) than Whites (13%).

Disparities are also evident in the national profile of periodontal disease. Dye et al. (2007) reported an overall 26% prevalence of periodontal disease for adults aged 20 to 64 years. The highest prevalence (17%) was reported for Blacks, compared to the lowest (6%) for Whites. In adults with mean gingival pocket depths that ranged between 4 – 7 millimeters, Blacks had the highest prevalence (31%), followed by Mexican Americans (25%), as compared to significantly lower prevalence in Whites (10%). Prevalence of gingival attachment loss between 4 – 7 millimeters in adults was again highest for Blacks (48%), as compared to Mexican Americans (39%), and Whites (30%).

Oral health is linked to general health. What is most distressing is the risk for increased morbidity and mortality due to the relationship between oral bacteria and systemic conditions (HHS OSG, 2000). As if oral diseases are not enough of an insult to health and well-being, this systemic link has been associated with increased inflammatory markers, increased risk of heart disease, stroke, diabetes, and bacterial pneumonia (HHS OSG, 2000; Meurman, Sanz, & Janket, 2004; Paraskevas, Huizinga, & Loos, 2008).

Besides eating and smiling, the mouth is a portal for effective socialization and communication; damage can deeply affect emotional well-being (Peterson, Bourgeois, Ogawa, Estupinan-Day, & Ndiaye, 2005). The U.S. Surgeon General's report, *Oral Health in America* (HHS OSG, 2000), described these consequences.

> Damage to the craniofacial complex, whether from disease, disorder, or injury, strikes at our very identity. We see ourselves, and others see us, in terms of the face we present to the world. Diminish that image in any way and we risk the loss of self-esteem and well-being (p. 4).

There are also social and economic costs to the prevalence of oral health problems (HHS CDC, 2002; "Mommy, it hurts," 2006). Children with untreated dental caries, pain, and infection are prone to experience nutritional deficits due to the inability to eat. Sleep deprivation and attention deficits in school can be due to chronic oral pain. Missing teeth affect speech and delay social development as well as contribute to embarrassment from an unattractive smile ("Mommy, it hurts," 2006). Moreover, nearly 52 million hours of school are missed annually by America's children. For adults, the greatest impact is in lost work hours and wages. In 1984, over 164 million work hours were lost, resulting in economic impacts to individuals and businesses across our nation (HHS CDC, 2002).

Contributing factors. The determinants of oral disease follow the same epidemiologic triad as other chronic and infectious diseases with the requirements of a host, agent, and environment. Correspondingly, oral diseases are influenced by both protective and causal factors. These factors include heredity, physical environment, social environment, lifestyle choices, and health policies (Burt & Eklund, 2005). However, disparity continues to exist due to economic and societal gradients that influence the distribution and severity of oral diseases in the United States and throughout the world (Kwan & Peterson, 2010; Sabbah, Tsakos, Chandola, Sheiham, & Watt, 2007). When oral health disparity plays an uneven hand to the most vulnerable people, it starts an inequitable chain of events manifested through contributing environmental factors, leading to barriers to accessing and utilizing oral health care and ultimately worsening health outcomes (Carter-Pokras & Baquet, 2002; Mertz, Manuel-Barkin, Isman, & O'Neil, 2000).

Individual host contributors to oral disease include cognitive, behavioral, affective, and biological factors (U.S. Department of Health and Human Services, Office of Minority Health [HHS OMH], 2008). Development of dental caries and periodontal diseases requires a susceptible individual host with one or more natural teeth. Host risk is increased by a cariogenic diet high in fermentable carbohydrates, acidic foods or beverages, poor daily oral hygiene skills, and salivary dysfunction (Darby, 2002; Featherstone, 2004). Genetic factors and systemic diseases are also influential contributors to oral diseases (Newman, Takei, & Carranza, 2002).

Agent causal factors are not present in the edentulous oral cavity of newborns (Darby, 2002); however, by adulthood as many as 500 microbial species have been cultivated in dental plaque (Newman, Takei, & Carranza, 2002). In dental caries, the common acidogenic bacteria include *Streptoccocus mutans, S. sanguis* and Lactobacilli. In periodontal diseases the predominant bacteria are *Prevotella intermedia* and *Porphyromonus gingivalis* (Darby, 2002; Newman, Takei, & Carranza, 2002).

The widespread prevalence of oral disease makes it clear that prevention is not a simple matter of teaching individuals how to use a toothbrush and dental floss (Dye et al., 2007). Individual responsibility for self-care is strongly influenced by environmental factors that are complex and deeply interconnected (Patrick et al., 2006). Environmental and community level systems are the indirect factors over which individuals have little or no control. They include the following: physical environment, social and cultural environment, economic barriers, institutions, organizational factors, and political factors (HHS OMH, 2008; Patrick et al., 2006).

Barriers to oral healthcare represent significant factors in oral health disparity. The California Dental Access Project (Mertz, Manuel-Barkin, Isman, & O'Neil, 2000) identified three levels of barriers to oral health care: consumer, provider, and systems level. These barriers represent the interconnected and interrelated aspects of this complex public health issue.

Consumer, or individual patient, barriers to care are experienced in four distinct areas: physical, financial, process, and attitudinal. Physical barriers are factors that impede the ability to receive care in a dental facility, e.g., location of offices,

convenience of appointment times, transportation availability, and the ability to take unpaid time off from work. Financial barriers are factors that impede the ability to pay for dental services, e.g., lack of dental insurance, low-income status, no flexible payment options, and discontinuance of public assistance programs in times of budget shortfalls. Process barriers are factors that impede consumers from navigating the dental delivery system (Mertz, et al., 2000). Attitudinal barriers experienced by consumers encompass three distinct areas. First, there are factors that involve the dental provider-patient relationship, e.g., ethnic, cultural, and linguistic differences. Second, there are factors that involve perception of oral health needs. Third are emotional factors that include fear of dental work, embarrassment of oral status (Mertz, et al., 2000), and fear of discrimination and mistrust (Smedley, Stith, & Nelson, 2003).

Rarely targeted as a causal factor, dental providers themselves have been identified as a barrier to oral health care (Grembowski, Anderson, & Chen, 1989; Mertz, Manuel-Barkin, Isman & O'Neil, 2000). Key factors among providers are financial, physical, and attitudinal barriers. Financial barriers are the most commonly cited grounds for dentists to limit the types of patients they are willing to serve in their practices. The business model for most dental practices is that of solo business owner. Economically, this engenders high overhead and offers little incentive for dental providers to cater to those who cannot afford their fees (Wendling, 2010). Physical barriers impede the delivery of professional care. These include limited hours of operation, limited openings in the schedule for emergency visits, non-mobile dental practices that exclude the homebound, and a lack of office accessibility for those with disabilities.

Dental provider attitudes towards the underserved are a seldom addressed barrier to care. Personal beliefs, assumptions, and values may differ with a diversity of consumers. Attitudinal barriers due to cultural and racial dissimilarities between the dental provider and consumer may lead to discrimination. Attitudinal barriers are also observed with the inherent power imbalance between well-educated and financially secure dental providers versus underserved populations (Mertz et al., 2000; Smedley, Stith, & Nelson, 2003).

The impact of provider attitudes towards marginalized populations can be subtle and persistent. Dental provider attitudes of discrimination, bias, stereotyping, and uncertainty are associated with provider-patient communication and clinical decision-making (Mertz et al., 2000; Smedley, Stith, & Nelson, 2003). Both communication and clinical decision-making are critical aspects of assuring health promotion efforts and health outcomes are successful (Perloff, Bonder, Ray, Ray, & Siminoff, 2006). Prejudicial attitudes affect willingness for vulnerable populations to obtain dental care; moreover, prejudicial attitudes may "influence the type and quality of service provided" (Patrick et al., 2006, p.5).

Lastly, system barriers to care impact both consumers and providers. The dental education system controls who is accepted into highly competitive dental programs; consequently, the dental workforce experiences less diversity compared to other health professions (Mertz & O'Neil, 2002). Additionally, the dental education system controls the offering of dental services for the underserved. Unfortunately, curricular reform to

address access and oral health care disparities has not kept pace with current community needs (ADEA, 2011; Patrick et al., 2006).

The most commonly tracked socioepidemiological variables for oral health include race, education, income, and gender. These variables, when combined with structural inequities to underserved and high risk populations, are associated with unequal oral health outcomes (Kwan & Peterson, 2010). Health equity can be understood as an ethical concept based in social justice. Inequality is considered an inequity when the distribution is systematically unfair to different groups of people (Braveman & Gruskin, 2003). California populations that experience the greatest inequities include low-income and homeless individuals, rural Californians, racial and ethnic minorities, non-English speaking individuals, children and the elderly, individuals with developmental disabilities, and the medically compromised (Mertz et al., 2000). Most interestingly, research suggests that disparity persists not because of clinical need and patient preferences, but due to healthcare systems and provider attitudes (HHS CDC, 2003).

The two most common dental diseases, dental caries and periodontal disease, are described as transmissible bacterial infections. As this section illustrated, the contributing factors for oral diseases go far beyond what can euphemistically be wiped away with a simple toothbrush. Contributing factors are multifactorial and intricately intertwined, leaving dentistry's leaders struggling to find the right combination of approaches to mitigate the distribution and severity of dental diseases affecting America's most vulnerable citizens.

Strategies and challenges. Dental diseases are not inevitable – they are preventable (Scott, 2002; Watt, 2005). Unmistakably, multiple barriers to an appropriate level of dental care exist; however, the impact to individuals and society "is tremendous as compared to the minimal investment required to prevent such harm (Mertz et al., 2000, p. 3-19).

Prevention and oral health equity have been identified as national priorities. Frameworks for action are addressed through the Surgeon General's National Call to Action for promoting oral health (HHS CDC, 2003) and public health's spectrum of prevention (Cohen, Chávez, & Chehimi, 2007). Furthermore, through initiatives at national, state, and local levels ongoing efforts work to reduce overall health disparity (HHS OMH, 2008; Satcher & Higgenbotham, 2008) and oral health disparity (Hilton & Lester, 2010; Kwan & Petersen, 2010).

It is through the dental delivery system that services are provided to consumers. The United States maintains a pluralistic system for the delivery of oral health care (Geurink, 2005). Of the practicing dentists, 92% operate out of private dental offices. Due to consumer and provider barriers to care, this resource is often unavailable and out of reach for one-third of our population (Mertz et al., 2000; Mertz & Finocchio, 2010).

Oral health care is also provided through a dental safety net. The dental safety net includes a variety of options: Federally Qualified Health Care Centers (FQHC), Medicaid dental practices, community clinics, federal and state prevention programs, mobile practices, hospital emergency room care, volunteer programs through local dental associations, and academic dental institutions (Edelstein, 2010).

Despite the extent of dental services and programs offered through the dental safety net, many states recognize they are not always effective due to inconsistencies in accessibility, range of services, and quality of care. California is a good example of the problems experienced by many states. On July 1, 2009 most Medicaid dental services for California's adults were discontinued due to budget shortfalls, leaving adults with limited treatment options and no prevention programs ("Denti-Cal," 2009).

Of the federal and state prevention programs, two of the most successful programs are fluoridation and dental sealants. For over 50 years, community water fluoridation has been heralded as safe, effective, affordable, and well-suited to addressing oral health inequities (Mason, 2005). California's 1995 state law requires cities with a minimum of 10,000 service connections to install community water fluoridation ("Community Water," 2010); however, currently only 27% of the state's population is being served by fluoridated water ("Synopses of State," 2009). Despite its proven track record, controversy surrounds community water fluoridation's use (Cheng, Chalmers, & Sheldon, 2007), leaving this prevention program largely underutilized.

Dental sealants have long been utilized in children's permanent molars to protect enamel pits and fissures from dental caries (Mason, 2005). An example is the California Children's Dental Disease Prevention Program. This program was designed to provide prevention for the state's low-income children through education, fluoride rinses, and dental sealants. However, due to severe budget deficits in the 2009-2010 fiscal year the program was discontinued indefinitely (California Department of Public Health, 2010).

Strategies through academic dental institutions. Academic dental institutions – dental schools – are an essential part of the dental safety net. In addition to training dentists for lucrative private practice, academic dental institutions are often responsible for picking up the slack left by dwindling resources. Dental education leaders noted, "Academic dental institutions are the fundamental underpinning of the nation's oral health" (ADEA, 2011, p. 988). To meet the oral health needs of the public and the educational requirements of dental students, significant didactic and clinical coursework is required.

Currently, California has the highest number of dental programs respective to the rest of the states, boasting five dental schools and 24 dental hygiene programs ("Accredited California," 2010; "Dental Education," 2010). The curriculum in academic dental institutions is guided by the Accreditation Standards for Dental Education Programs (Commission on Dental Accreditation [CODA], 2010), with several standards addressing the knowledge and skills dental students require in order to provide care to the underserved and special needs patients. These standards include the provision of student-delivered low cost patient care as well as effective interpersonal skills and communication techniques required to manage special needs and diverse patient populations. Additionally, students are required to be competent in critical thinking and in the application of ethics and professional responsibility. Absent from the requirements are courses in dental public health (CODA, 2010). This leaves dental educators the challenge of finding innovative ways of incorporating essential concepts and skills into an already densely packed program (Andersen et al., 2009).

For decades, the education of dental professionals was based on a strict foundation of the biomedical sciences. It was not until the 1960s that academic programs embraced the wider societal responsibility to underserved patient populations (Formicola & Bailit, 2004). Fortunately, dentistry's role in addressing oral health disparity has been strengthened as a result of current accreditation standards (CODA, 2010). To translate this mandate into real change, the American Dental Education Association (ADEA) has taken the lead in guiding academic dentistry's curricular reform efforts through policy and best practices recommendations (ADEA, 2010). However, there is still no consensus on how to accomplish the desired educational shift (DePaola, 2008).

Clearly, a need existed for a concerted approach to reduce oral health disparity through academic dentistry. In 2002, the Robert Wood Johnson Foundation funded the five year Pipeline Program tasking 15 dental schools – including five from California – to address this educational and societal need. Four objectives marked the Phase I and II programs: 1) increase students' clinical time treating underserved patients; 2) reform community-based curricula, such as adding cultural competency programs; 3) increase underrepresented and low-income minority dental student recruitment and retention and, 4) influence federal and state policies to sustain the Pipeline program ("California Pipeline," 2006). By the end of funding in 2007, results indicated a significant increase in time spent during extramural clinical rotations, increased hours and types of cultural competency curricula, and a slight improvement in underrepresented minority students (Andersen et al., 2009).

Participating Pipeline dental schools made several community-based curricular improvements. Some schools incorporated cultural competence into didactic courses or as a component of extramural rotations. Some schools implemented reflective components after community-based rotations. In fact, reflection was considered essential to the cultural competency learning process. Faculty also played a role. Some schools had faculty reinforce the value of provider-patient communication and rapport with diverse patients. One result from the Pipeline program was particularly interesting. When dental students were asked if they felt prepared to treat culturally diverse and underserved patients, 90% responded positively; however, administrators and faculty felt less confident in their abilities at 63% and 55% respectively (Hewlett et al., 2009).

Barriers were noted within community-based curricula. Most notably, faculty expressed inadequate time to conduct small group discussions or evaluate essays. Faculty also felt stressed about adding material to already overloaded courses. While experiential learning superseded didactic learning for improving cultural competency and communication skills, this was considered a challenge for schools with low patient diversity (Andersen et al., 2009). Integration of curricular changes was not easy for the participating schools. Dr. Paul Glassman, Principal Pipeline Investigator, noted challenges with the 3-year curriculum at the University of the Pacific. "There was doubt among the faculty and administration about the value of community-based education or a focus on cultural competence" (Thind, Andersen, & Davidson, 2009, p. S221).

Much has been learned from the Pipeline program, and researchers continue to explore a variety of promising pedagogical methods conducive to cultivating students

with knowledge, skills, and ethical professionalism for addressing oral health disparity. For example, many studies have investigated cultural competency, service-learning, and the role of dental student attitudes as opportunities to increase empathy, knowledge, and experience in treating diverse, vulnerable, and at-risk groups (Hood, 2009; Rowland, Bean, & Casamassimo, 2006; Wagner et al., 2008).

Other studies have focused on effective interpersonal communication skill development and emotional intelligence. These skills have been helpful in guiding students to become adept at interviewing patients from a wide range of backgrounds, i.e., multicultural, racial, and ethnic groups, and socioeconomic levels (Hannah, Lim, & Ayers, 2009; Wagner et al., 2007). To guide students in becoming independent dental professionals, studies on critical thinking (Chambers, 2009), case-based learning, heuristic strategies (Whip et al., 2000), and reflection (Strauss et al., 2003) have demonstrated their worth in enhancing didactic and experiential learning in community-based education.

Post-experiential reflection is the most common type of reflection noted in the dental literature. This includes reflection after community-based rotations, community service-learning (CSL) opportunities (Gadbury-Amyot, Simmer-Beck, McCunniff, & Williams, 2006; Keselyak, Simmer-Beck, Krust-Bray, & Gadbury-Amyot, 2007; Kunzel, et al., 2010; Strauss et al., 2003), and clinical experiences (Boyd, 2002; Hanson & Alexander, 2010; MacEntee, Pruksapong, & Wyatt, 2005). Post-experiential reflection is designed to help students learn from the actual experience, not just from classroom-based pedagogy (Fiddler & Marienau, 2008). A positive outcome from reflection was that

"students can move away from stereotyping and holding presuppositions about their experiences to a more personal exploration of their learning and themselves" (Brondani, 2010, p. 635).

The Institute of Medicine Report *Unequal Treatment* (Smedley, Stith, Nelson, 2003) clearly demonstrated that providers' prejudicial beliefs, bias, and stereotyping behaviors contribute to health inequity. Despite the structural challenges, dental educators and researchers have been motivated and innovative in their search and application of socially conscious pedagogy. Still missing from the literature, however, is research on pedagogical methods that engage students in self-discovery and critical reflection (Hendricson et al., 2006) on prejudicial beliefs and attitudes towards the underserved.

Research Objectives and Procedures

The aim of this study was to determine if self-directed, serialized critical reflection on the legitimacy of dental students' own a priori prejudicial beliefs has intrinsic value in a preclinical curriculum.

Research objectives. This research was designed to address the following objectives:

1. Determine if dental students' attitudinal self-awareness of a priori prejudicial beliefs was fostered through serialized critical reflection.
2. Explore the scope and nature of self-awareness of a priori prejudicial beliefs.
3. Determine if self-directed, critical reflection on prejudicial beliefs is perceived as valuable in dental students' preclinical preparation for patient care.
4. Contribute to ongoing research on dental provider attitudinal barriers to care, cultural competency, and professional preparation of the 21st century dental health care workforce.
5. Contribute to efforts towards reducing oral health disparities.

Research questions. This research was designed to address the following questions:

1. Was self-awareness of a priori prejudicial beliefs fostered through reflective journaling, and if so, what was the nature of participants' self-awareness?
2. Did participants experience personal value from preclinical critical reflection on their own prejudicial beliefs, and if so, how did they describe personal value?

3. What pedagogical insights and values can be drawn from dental students' critical reflective journaling on their own prejudicial beliefs that could inform the preclinical curriculum?

Research procedures. This study used an integrated approach of qualitative and quantitative methods to introduce an educational intervention in an ongoing curriculum. The study population of first year dental students was recruited through the University of the Pacific Arthur A. Dugoni School of Dentistry (Pacific) located at 2155 Webster Street, San Francisco, California, 94115. Of the 142 enrolled first year dental students, a total of 132 (93%) provided written consent to participate in the study. A purposive sample of 44 participants was selected based on essential inclusion criteria.

Permission and access to the study population was granted by Associate Professor of Dental Practice, Christine Miller, RDH, MHS, MA (Figure A1). The intervention was incorporated into the 2010 Autumn Quarter Integrated Clinical Sciences I (ICS-I) curriculum as part of the regularly scheduled assignments. The assignment was first introduced to the students on October 11, 2010, and it concluded on December 17, 2010.

The conceptual framework for this study was drawn from the educational approaches of humanism, critical pedagogy, and Transformational Learning Theory. Humanism is the foundational philosophy of academic dentistry. A humanistic pedagogy "inculcates respect, tolerance, understanding, and concern for others" (CODA, 2010, p. 10). Critical pedagogy is a social justice philosophy. The central goal is to develop students' critical consciousness by reflecting on existing power structures and injustice and, through reflection, seek to transform oppressive structures through social action and

empowerment (Darder, Baltodano, & Torres, 2003; Freire, 2009). Transformational Learning Theory is a constructivist approach that guides adult learners to critically examine their presuppositions and to revise their interpretation in order to channel future action (Mezirow, 1991). Together, these educational approaches guided all phases of this study.

Specifically designed for this study, the educational intervention introduced a serialized journaling assignment into an ongoing preclinical course for first year dental students. The goal of the intervention was to determine if critical reflective journaling could foster dental students' self-awareness of prejudicial beliefs and stimulate change in the interest of socially, emotionally, and culturally competent dental practice. An original heuristic was developed to guide students' critical reflection over a period of 5 weeks. Design of the Serialized Heuristic Reflection (SHR) assignment drew from the work of Moustakas (1990) and Seal, Naumann, Scott, and Royce-Davis (2010). The SHR consisted of five nested and progressive journaling prompts regarding a socio-cultural group about whom a participating student identified having an a priori prejudicial belief. Journaling was facilitated by use of electronic templates, each with instructions for critical reflection. All students in the first year cohort were given the assignment, however, only those who provided written informed consent were included in the study.

The study drew from four data sources: 1) the 2013 cohort class roster, provided by Pacific's Department of Dental Practice; 2) demographic data on participants' age, gender, and race, provided by Pacific's Office of Academic Affairs; 3) electronic journal submissions from those who agreed to participate in the study and, 4) a four-question

survey taken as part of the fifth journal assignment. Students' access to the SHR templates, secure submissions of completed journals, and release of the journals for analysis by the researcher were administered through the Pacific Sakai Collaboration and Learning Environment (Sakai) online course management system. Management of all data sources was conducted with strict fidelity to pre-approved security and confidentiality protocols.

The data were analyzed through both qualitative and quantitative methods. Participants' reflective journals were qualitatively analyzed using the constant comparative method. No pre-codes were assigned; analysis began with line-by-line open coding, followed by focused coding. Analysis was iterative until saturation and no new themes emerged. Demographic data and survey responses were quantitatively analyzed to construct the purposive sample and to provide context for the emerging themes. Data management and analysis protocols were designed and carefully followed to increase confidence in the results through consistency, credibility, and trustworthiness measures.

Conceptual Definitions

The following conceptual definitions were used in the design of this study.

A priori prejudicial beliefs

Prejudice is the perpetuation of a negative "socially shared judgment" (Wright & Taylor, 2003, p. 433) about distinct groups of people, e.g. race, ethnicity, religion. A priori prejudicial beliefs refer to prejudicial beliefs that were previously unexamined.

Attitudes

Attitudes are "a mixture of beliefs, thoughts and feelings that predispose a person to respond, in a positive or negative way, to objects, people, processes or institutions" (Brown, Manogue, & Rohlin, 2002, p. 703).

Critical thinking

Critical thinking is an active, conscious process using knowledge, applicable information, past experience, open-mindedness, and logic to augment the decision-making process (Behar-Horenstein, 2009; Hendricson et al., 2006).

Cultural competency

Among numerous definitions presented in the literature, this study approached cultural competency as "the ability to function effectively with members of different groups through cultural awareness and sensitivity when delivering services to culturally diverse populations" (Chávez, Minkler, Wallerstein, & Spencer, 2007, p. 105).

Cultural humility

An important addition to the construct of cultural competency, cultural humility "incorporates a lifelong commitment to self-evaluation and self-critique, to redressing the

power imbalances in the patient-physician dynamic, and to developing mutually beneficial and nonpaternalistic clinical and advocacy partnerships with communities on behalf of individuals and defined populations" (Tervalon & Murray-García, 1998, p. 117).

Dental provider-patient communication

Dental provider-patient communication is defined as indirect or direct patient contact that results in two-way verbal and/or non-verbal communication. Dental providers may include dental students and licensed dental professionals.

Emancipatory pedagogy

Emancipatory pedagogy has two meanings that were influential in the conceptual framework of this study. In the dental literature (Whipp, Ferguson, Wells, & Iacopino, 2000), emancipatory pedagogy is defined as a form of self-directed adult education. The purpose is to guide the student towards autonomy and lifelong learning. In the broader educational literature, emancipatory pedagogy is defined as critical reflection on existing power structures and injustices in order to transform oppressive structures through social action and empowerment (Freire, 2009).

Emotional intelligence

Emotional intelligence encompasses the range of social abilities needed to process and regulate emotions with resiliency, flexibility, perception, and empathy. An individual with high emotional intelligence is emotionally responsive to changing situations and diversity of people or environments (Mayer, Salovey, & Caruso, 2004; Tett, Fox, & Wang, 2005).

Heuristic/heuristic inquiry

In the dental literature, a heuristic is an organizational tool for note-taking, concept planning, and problem-solving (Whipp, Ferguson, Wells, & Iacopino, 2000). In the broader humanism literature, heuristic inquiry is an intensely reflective and step-wise process of discovery into the nature of human experience (Moustakas, 1990). Both the broader philosophical definition and the more practical definition from the dental literature were used in this study.

Intrinsic value

Intrinsic value refers to essential worth. Personal intrinsic value is a subjective appraisal of the worth of a resource or experience to an individual. Pedagogical intrinsic value is a subjective appraisal of the worth of a resource or experience to an educational effort.

Marginalized/underserved populations

Marginalized and underserved populations are social groups that experience health inequities, barriers to care, and poorer oral health outcomes. They include, but are not limited to, young children; older adults; the medically compromised, institutionalized, or homebound; those with developmental disabilities; the homeless; racial, ethnic, and cultural minorities; and those in low income groups (Allukian, 2008).

Preclinical curriculum

The dental preclinical curriculum precedes clinical rotations. It includes the didactic and laboratory courses designed to prepare dental students for providing care.

Reflection/critical reflection

Reflection is a form of active critical thinking that may involve various practices such as written journaling, group discussion, or photographic media (Strauss et al., 2003). Critical reflection is a specific type of reflection that addresses social, ethical, spiritual, psychological, political, epistemological, or other forms of human understanding. Critical reflection involves an active process to increase social consciousness and is defined as "the process by which students, as empowered subjects, achieve a deepening awareness of the social realities that shape their lives and discover their own capacities to re-create them" (Freire, 2009, p. 15).

Self-awareness

Self-awareness is a state of being that requires a methodology for gaining self-knowledge. Areas of understanding may include psychological and social issues (Richards, 2009) that explore attitudes, beliefs, values, and feelings (Cook, 1999).

Social and emotional competence

Social and emotional development applies emotional intelligence for improved socialization. It is defined as the "desirable, sustainable enhancement of personal capacity to utilize emotional information, behaviors, and traits to facilitate desired social outcomes" (Seal et al., 2010, p. 2). Social and emotional competency has been a key part of recent curricular reform at the University of the Pacific Arthur A. Dugoni School of Dentistry, the setting for this study.

Limitations

Potential research design limitations included the decision to use a non-experimental approach without random sampling. This limitation was considered acceptable based on the primary objective of exploring the nature of self-awareness of prejudicial beliefs through qualitative analysis. Quantitative analysis of questionnaires was used to triangulate data and corroborate qualitative findings.

Potential participant limitations included the possibility of misunderstanding the intent of the research study, fear of invasion of privacy, and potential emotional risk. These concerns were addressed by assuring that participants had time to ask questions before signing the consent form. Participants were assured there were safety measures in place to protect privacy, and that the journals would not be collected or read by faculty. In addition, each student was given a list of resources in the event the research brought up an emotional response for which they required support.

All interventions applied for the first time introduce potential limitations to the research design. In this research, the Serialized Heuristic Reflection (SHR) templates were not piloted to a subset of the dental students. However, quality and integrity of the instruments were protected through the oversight of template design by Dr. Seal, primary developer of the Social and Emotional Competence model integral to the SHR design.

Potential for researcher bias was a final design limitation. Qualitative analysis may misinterpret participants' journals during the coding process. To address this potential bias, this researcher maintained an audit trail journal that noted emerging personal feelings and beliefs that impacted key decisions made during analysis.

Significance

As a component of the dental curriculum, critical reflection may add an opportunity for students to utilize self-direction in the pursuit of their learning and autonomy development. It may reduce faculty preparation time as students take personal responsibility for learning through self-discovery. As a preclinical activity, reflection may provide an opportunity for students to explore prejudicial beliefs and consider the impact of their own attitudes on patients. Preclinical preparation could benefit students' social and emotional skills with improved provider-patient communication.

As a method for curriculum reform, the study's intervention may contribute to efforts to meet CODA (2010) standards and ADEA (2010) policy recommendations for a more socially-conscious approach to dental education. It may provide an alternative for cultural competency by focusing instead on cultural humility. Significance could also be reflected in the opportunity to move away from a lecture-based pedagogy to one that promotes more critical thinking, critical reflection, and transformational learning.

As a contribution to research on provider attitudes to care, the results of this study may inform dental educators and researchers of the value of preclinical .reflection, distinct from post-experiential reflection. As a contribution to addressing oral health disparity, the results can be used to cultivate dental student awareness of a priori prejudicial beliefs that might impact provider-patient rapport and communication. Experience with this intervention may increase student confidence and communication skills with all patient types. The outcome of improved communication may be reflected in better oral health compliance, leading to improved oral health outcomes.

Chapter 2

Oral health disparity is an ongoing public health challenge at every level (Kwan & Peterson, 2010; Mertz, Manuel-Barkin, Isman, & O'Neil, 2000). As the source of our nation's oral health workforce (ADEA, 2011), academic dental institutions are in position to apply pedagogical methods aimed at dental provider attitudes as a barrier to oral health care. Dental education leaders agree, and in response, they have called for curricular reform to better prepare future dental professionals to meet the needs of an increasingly diverse and underserved population (Haden et al., 2006; Hood, 2010; Pyle et al., 2006).

In the first section of this chapter, academic dentistry's efforts to address oral health disparity will be reviewed by highlighting key accreditation standards that align with societal needs. The second section will illustrate the dental student population addressed in this study. The intent will be to better understand the scope of dental school applicants in terms of their diversity and attitudes towards the underserved. The third section describes the conceptual framework for this study. Humanism, critical pedagogy, and Transformative Learning Theory are presented as the influential educational approaches that inform pedagogy aimed at oral health inequity.

The chapter concludes with an analysis of the academic dental literature aimed at reducing oral health disparity in the United States. The studies reviewed address dental educational methods used in the curricular areas of ethics and professionalism, behavioral sciences, cultural competency, and critical thinking.

Academic Dental Institutions

Early in American history, there was a time when a patron could sit in a barber chair for a haircut and shave, and then conveniently have that painful tooth extracted. These early dentists were called barber-surgeons (Daniel, Harfst, & Wilder, 2008). Over the next 200 years, training in the dental arts progressed as an unregulated mix of hands-on training, family apprenticeships, and medical school instruction (Chernin, 2009b). Remarkably, it was another 200 years before the first independent academic dental institution was founded for the formal training of dental surgeons. From the Baltimore College of Dental Surgery's first 1840 graduation of a mere five dental students (Chernin, 2009a), to the 2008 graduation of 4,794 students throughout the 55 accredited U.S. dental schools (Okwuje, Jones, Anderson, & Valachovic, 2010b), dental education has seen significant changes over the years. Regulation through accreditation of educational programs has been particularly vital in assuring these institutions produce practitioners competent in caring for our nation's oral health needs.

The accreditation of academic dental institutions is overseen by the Commission on Dental Accreditation (CODA). Recognized by the United States Department of Education, CODA was established in 1975 to serve "the public by establishing, maintaining and applying standards that ensure the quality and continuous improvement of dental and dental-related education and reflect the evolving practice of dentistry" (CODA, 2010, p. 2). As the technology and practice of dentistry progresses, and the needs of a diverse public expand, so, too, do the standards by which schools are accredited. The Commission acknowledges the need for an educational environment that

pedagogically balances the needs of students with the needs of the public. Chiefly, the goal of the Commission's core educational principles and standards of accreditation is to assure an expected level of excellence for the practice of dentistry in a demographically and technologically changing society (CODA, 2010).

The educational environment expected by the Commission is one that fosters quality and innovation. CODA's core educational principles and accreditation standards form the backbone of the organization's requirements. The core educational principles include a humanistic environment, critical thinking, self-directed learning, comprehensive patient-centered care, and diversity (CODA, 2010). These principles are relevant to both didactic learning outcomes and the provision of clinical care, and are also echoed throughout the standards.

Humanism is the foundational philosophy of academic dentistry. A humanistic environment instills mutual respect among and between faculty, students, and patients. Gone are the threatening and intimidation tactics of previous educational environments. The intent is that this translates into empathetic and compassionate patient care (CODA, 2010). "Students who are respected learn to respect their patients, both present and future, as living human beings, as individuals with a diversity of backgrounds, life experiences, and values" (Haden et al., 2006, p. 1267).

The core educational principles of critical thinking and self-directed learning are essential for dental students who are preparing to work in an unsupervised capacity with a diversity of patients. Critical thinking is an active, conscious process using knowledge, applicable information, past experience, open-mindedness, and logic to augment the

decision-making process (Behar-Horenstein, 2009; Hendricson et al., 2006). Pedagogical methods for instilling critical thinking throughout didactic courses are relatively clear cut; however, there is a great degree of subjectivity with clinical applications (CODA, 2010). In a clinical capacity, critical thinking is vital due to the vagaries inherent at all levels of patient care. The core principle of self-directed learning guides students to move away from dependent faculty-centered instruction and encourages autonomy (CODA, 2010). Both critical thinking and self-directed learning are valuable CODA core principles for strengthening dental students' ability to function independently and adopt the capacity for lifelong learning.

Comprehensive patient-centered care is the end goal of dental students' entire educational process. This core principle embraces sensitivity to patients' individual preferences and considers the social determinants of health as integral to the process of health care delivery (CODA, 2010). The core principle of diversity is equally essential in the delivery of patient care. The Commission expects academic dental institutions to create an educational environment that cultivates compassionate student providers who are able to provide care for a variety of patient types (CODA, 2010).

In addition to CODA's core educational principles are the standards for accreditation. Meeting the Commission's six standards determines whether academic dental institutions obtain and maintain their accreditation status. Key among them is Standard 2, the Educational Program (CODA, 2010). Nowhere in the standards are educational leaders directed with more purposeful intention to address oral health disparity than the subsections on ethics and behavioral sciences curricula.

Accreditation standards for ethics curricula call for students to learn the use of professional codes of conduct and ethical theories in addressing professional practice. In particular, the intent of this subsection is that ethics "should guide judgment and action for issues that are complex, novel, ethically arguable, divisive, or of public concern" (CODA, 2010, p. 25). Clearly, curricula that address complex social justice issues are central to matters of public concern.

Accreditation standards for behavioral sciences curricula state in part, "Graduates must be competent in managing a diverse patient population and have the interpersonal and communications skills to function successfully in a multicultural work environment" (CODA, 2010, p. 24). This subsection is worth quoting in its entirety due to its relevance to this study.

> Students should learn about factors and practices associated with disparities in health status among subpopulations, including but not limited to, racial, ethnic, geographic, or socioeconomic groups. In this manner, students will be best prepared for dental practice in a diverse society when they learn in an environment characterized by, and supportive of, diversity and inclusion. Such an environment should facilitate dental education in:
>
> - basic principles of culturally competent health care;
> - recognition of health care disparities and the development of solutions;
> - the importance of meeting the health care needs of dentally underserved populations, and;
> - the development of core professional attributes, such as altruism, empathy, and social accountability, needed to provide effective care in a multi-dimensionally diverse society (CODA, 2010, p. 24).

Since 1923, the leading national organization representing academic dentistry is the ADEA – American Dental Education Association ("Who we are," 2011). The ADEA guides institutions and dental practitioners in determining best educational practices through policy aimed at dental educational programs (ADEA, 2010). However, there are

concerns that curricula are not meeting CODA's standards aimed at graduating socially conscious providers. When surveyed about academic dentistry's effectiveness in serving the public good, 64% of dental and public health leaders responded that the role was being fulfilled, but more needs to be done (Davis et al., 2007). Most disconcerting, the authors noted several respondents perceived that dental education has failed at "producing socially responsible graduates who fully understand their responsibilities to the community as members of the profession" (Davis et al., 2007, p. 1014).

To address the disconnection between what is mandated and actual facilitation in the classroom, ADEA policy language guides academic dental institutions' societal obligations: "Market forces, societal pressures, and professional self-interest should not compromise the professional objective of equitable and adequate oral health care for all Americans" (ADEA, 2010, p. 745). This statement is strong language in favor of oral health equity. However, considering the ubiquitous solo-practice model is quite lucrative even in these economic times (Levin, 2010), professional self-interest among the licensed vanguard still reigns as evidenced by dental economics editorials publicizing methods for increasing profitability (Malcmacher, 2010; Musikant, 2010).

This dichotomy between ADEA educational policy and the stark reality of academic implementation is a challenge. DePaola (2008) asserts that not only has dental education not evolved to address an increasingly diverse patient population, but there has been no consensus on how to accomplish the desired educational paradigm shift. To meet this challenge, ADEA formed the Commission on Change and Innovation in Dental Education (ADEA CCI) to explore and manage educational reform efforts (Pyle et al.,

2006). In making the case for shaking up a 50-year old educational system, ADEA CCI took the bold position of admitting that as an organization they had lost sight of their role in serving the public good. ADEA further confessed their failings in conveying the core values of social responsibility, noting that traditional pedagogical methods were ineffective for today's critically-thinking student (Pyle et al., 2006). Interestingly, the principles for change advocated by ADEA CCI are nearly identical to the principles outlined in the accreditation standards; however, there is a renewed opportunity for vigor in achieving these standards as they relate to oral health equity. It is the beginning of a paradigm change that may truly shake up the status quo in dental education.

The Commission on Dental Accreditation and the American Dental Educators Association aspire to bring dental education into the 21st century. Change is difficult for both students and faculty; nonetheless, ADEA CCI acknowledges the urgency in exploring methods that can best transform dental education (Pyle et al., 2006). If the aim of dental education is to prepare graduates to provide oral health care for diverse populations (ADEA, 2011), this calls for a different pedagogical style (Haden et al., 2006) also capable of developing lifelong learners proficient in self-direction and critical reflection (Haden et al., 2006; Sweet, Wilson, & Pugsley, 2009). A new critical pedagogy requires a new type of dental student who is up to the challenge.

The Population

The following describes the study's sampling frame of dental students matriculated in dental schools throughout the United States.

Dental students. Today's dental school applicants are a far cry from the 1840 graduates of Baltimore College. Currently, applicants are required to have undergraduate degrees, high grade point averages, high Dental Admission Test and Perceptual Ability Test scores, deft psychomotor skills, and behavioral measures such as compassion and good communication skills (Curtis, Lind, Plesh, & Finzen, 2007). Evolving admissions criteria and demographic changes have put a new face on today's dental student.

Applications to dental schools have increased (Okwuje, Jones, Anderson, & Valachovic, 2010b). In the 18 year period between 1990 and 2008, dental school applications increased from 5,123 to 12,178 respectively. This demonstrates there is no shortage of applicants to feed the labor pool of future dental professionals.

Demographically, there has been a shift in gender distribution from the previously male-dominated profession (Okwuje et al., 2010b). Dr. Patricia Blanton (2006) recalls a time when females made up only 2% of the enrollees. As shown in Table 2, there was a 5% increase in female enrollees between 2000 and 2008. This shift in demographics reflects a distribution that is inching up on being representative of the general population. As of 2008, the national female dental student enrollment rate (44%) was less than national (51%) and California (50%) rates for females in the general population (U.S. Census Bureau, 2010).

Table 2

Comparison of the 2000 and 2008 United States Dental School Enrollees by Race, Ethnicity, and Gender

		Race/Ethnicity						Gender	
		White	Asian	Latino	Black	Native	Other	Male	Female
Year	*n*	%	%	%	%	%	%	%	%
2000	4,234	67.5	22.0	5.0	5.0	0.5	0.0	59.7	39.1
2008*	4,794	58.1	21.8	5.8	5.5	0.9	6.0	55.8	44.2

Note. Adapted from *Annual ADEA survey of dental school seniors (*Okwuje et al., 2010b)
Asian = Asian/Pacific Islander. Native = American Indian/Alaska Native. Other = other races
* = 2.3% of enrollees did not report race/ethnicity

Despite mandates and efforts targeting increased student diversity (Pendleton & Graham, 2010; Price & Grant-Mills, 2010), little has changed with regard to the racial and ethnic distribution of underrepresented minority (URM) students – Latino, Black, and American Indian/Alaska Native. As shown in Table 2, there was a small (1.7%) increase in URM students over an eight year period. This is far off the mark for being representative of the general population. In 2008, the URM national dental student enrollment rate (12.2%) was disproportionate relative to national (30%) and California (46%) rates for URM individuals in the general population (U.S. Census Bureau, 2010).

Additional variables paint a picture of today's dental student as highly focused on academic achievement. Mean age of the 2008 enrollees was 25 years (Okwuje et al., 2010b), suggesting the majority of students matriculated soon after completing their undergraduate education. This same cohort received undergraduate degrees primarily in the sciences, with only 5% of students having earned humanities or social science degrees. In fact, only 12% of dental schools require prerequisites in the behavioral sciences (Dunning, Lange, Madden, & Tacha, 2011).

Student educational debt is essential in understanding the economic realities graduates face. In 2009, the average student debt was $164,000, with 20% having graduated with high debt ($250,000). Henzi, Davis, Jasinevicius, and Hendricson (2007) noted students' dissatisfaction with the rising cost of dental school. One student's lament was telling: "COST!!! Soon, only rich students will be able to afford this education – a poor representation of the general population" (p. 639).

Economic realities may likewise be reflected in senior students' opinions on the importance of service to vulnerable and low-income populations as one of several reasons for selecting dentistry as a career. Although not highlighted in their report, the results from Okwuje et al. (2010a) reveal stark differences: importance was ranked lowest for White students (22.6%), as compared to Native Hawaiian/Other Pacific Islander (63.2%), Latino (50%), Black (48.4%), and Asian (39.5%). Interestingly, the majority (80%) of seniors agreed their school's educational environment promoted learning about cultural diversity, 75% agreed providing care to all segments of the population is an ethical responsibility, and 65% agreed everyone should have access to care regardless of ability to pay. However, only 38% responded that they intended to work in underserved areas.

Dental school applicants currently face stiffer competition and requirements for enrollment. The diversity of students still does not reflect a comparable distribution in the general population. Moreover, the typical applicant is under-prepared with the prerequisites necessary for meeting the social demands of an increasingly diverse America. Lastly, while most dental students demonstrated good intentions, it did not translate into students' post-graduate plans to serve underserved populations.

Conceptual Framework

The philosophical foundation of dental education is firmly grounded in humanism (CODA, 2010; Haden et al., 2006); however, educational and social philosophies are increasingly drawn upon for influence in the dental sciences (Darby & Walsh, 2003; Sweet, Wilson, & Pugsley, 2009). There is a paucity of research literature demonstrating theory applied in dental educational settings; nevertheless, this presents an opportunity to explore what exists, what is missing, and position theory to contribute to a new paradigm in dental education. For that reason, three educational approaches comprise the conceptual framework for this study: humanism as the foundational theory of academic dentistry aimed at creating a humanistic educational environment; critical pedagogy due to current curriculum reform efforts addressing oral health disparity; and Transformational Learning Theory for guiding adult learners to critically examine their presuppositions and to revise their interpretation in order to channel future action.

Humanism. A humanistic educational environment, humanistic educational methodology, and humanistic patient care – while different – all share a commonality with the philosophy of humanism. In academic dentistry, the humanistic educational environment is focused primarily on relationships among faculty, students, and patients (CODA, 2010).

> A humanistic pedagogy inculcates respect, tolerance, understanding, and concern for others and is fostered by mentoring, advising and small group interaction. A dental school environment characterized by respectful professional relationships between and among faculty and students establishes a context for the development of interpersonal skills necessary for learning, for patient care, and for making meaningful contributions to the profession (CODA, 2010, p. 10).

While humanism weaves throughout students' coursework and interactions with faculty, third-year dental student Morton (2007) inadvertently revealed a one-dimensional aspect that belies the true extent of a humanistic environment. Humanism isn't simply a shift in faculty attitudes from condescending to collegial collaboration with students. Humanism also incorporates whole student learning outcomes (Rogers, 1983) that blend the scientific with the behavioral sciences (Sweet, Wilson, & Pugsley, 2009).

Morton's (2007) unilateral perspective appears to be reflected in a lack of dental education research aimed at designing and assessing humanistic pedagogical strategies. Dental educators confirmed an interpretation of a humanistic environment as one that promotes dignity and compassion when students interact with patients (Haden et al., 2006; Roth, 2007). Haden et al. (2006) asserted that respect is a two-way street between faculty and students; moreover, this respect should transfer over to patient care by valuing individuals' culture, diversity, and values. The authors also suggest that humanistic values translate into essential patient rapport skills, such as respectful patient communication (Haden et al., 2006). There is a disturbing trend, however, in that surveyed students felt too much time was wasted on behavioral and social sciences coursework that rounds out the dominant science-based curriculum (Heinzi et al., 2007). In their enthusiastic rush to meet clinical requirements, students may neglect to notice the object of their training is a live patient in the chair.

Humanistic pedagogical strategies are, however, used in dental hygiene education, and can serve as an example of its pedagogical application in humanistic patient care. Dental hygiene educators use human needs theory (Darby & Walsh, 2003) – heavily

influenced by Maslow's (1946) hierarchy of needs. Human needs theory as applied to oral health promotion focuses on humanistic care aimed at the whole patient (Darby & Walsh, 2003). Whereby self-actualization – or achievement of full human potential – is the pinnacle of Maslow's (1946) hierarchy, optimum oral health is the goal in the human needs continuum.

Human needs theory is one that presents dental hygienists with "a holistic and humanistic perspective for dental hygiene by addressing the client's needs in the physical, emotional, intellectual, and social dimensions" (Darby & Walsh, 2003, p. 29). Curricula are designed to guide the dental hygienist in understanding the patient's needs. They include the role of the environment on the appointment, the influencing factors on oral health, and the impact of dental hygiene interventions relative to the client's social, cultural, and environmental factors (Darby & Walsh, 2003). Despite the benefits to educating future dental hygienists, Sato et al. (2007) assert that additional exploration in learning strategies was recommended. Maslow's hierarchy of needs is, nevertheless, just one piece of a humanistic education. For this reason – and the notable lack of research addressing humanism in academic dentistry – an expanded understanding of humanism should be explored for its value in educating future dental professionals.

Drawing from humanistic psychology (Maslow, 1946; Moustakas, 1985; Rogers, 1979), humanistic educational theory came out of the educational movement of the 1970s and 1980s (Underhill, 1989). Moving away from behaviorism, humanistic psychologists believed the determinants of behavior were due to individuals' beliefs, attitudes, feelings, and values; consequently, its inclusion in curriculum objectives was considered essential

(Combs, 1981). Humanistic education has been defined by the Association for Supervision and Curriculum Development (as cited in Combs, 1981) as pedagogy which it committed to several key practices. Humanistic education promotes learners' self-actualization, develops behavioral skills such as interpersonal communication conducive to living in a multicultural society, involves students in participatory education, and it encourages lifelong learning and whole student learning (Underhill, 1989).

A humanistic educational approach to whole student learning was strongly influenced by the work of Carl Rogers (1983). Whole student learning combines both cognitive left-brain and creative right-brain learning perspectives. Rogers envisioned a fully functioning and self-actualized human being in which experiential student learning is made more meaningful through a holistic process. Education should be personalized, self-initiated, all-encompassing, and self-evaluated. Affective processes are instrumental to holistic and humanistic education (Combs, 1981; Rogers, 1983), most notably the role and primacy of human emotions in adult learning (Dirkx, 2006). If students do not connect learning to what emotionally affects them, it has little meaning; furthermore, without emotional learning, pedagogies suffer (Combs, 1981; Dirkx, 2006).

Academic dentistry continues to lean towards a left-brain pedagogical style (Pyle et al., 2006), and it could be argued that dental education is therefore not humanistically balanced. Consequently, an expanded view of humanism was foundational in the conceptual framework guiding this exploration of the emotions, attitudes, and values of dental students.

Critical pedagogy. The practice of dentistry is a human enterprise in which care is humanistically delivered. Accordingly, a humanistic educational environment provides the philosophical foundation for the practice of dentistry (CODA, 2010). However, elevating the importance of oral health disparity in both dental educational standards (CODA, 2010) and policy language (ADEA, 2010) portends a necessary paradigm shift. This shift requires a radical form of humanism "that aims to liberate the individual from the fetters of ignorance, caprice, prejudice, alienation, false consciousness" (Aloni, 1997, p. 89). It is a form of humanism in which educators "should become agents of transformation rather than of conservation" (Aloni, 1997, p. 95).

This radical form of humanism is critical pedagogy. As an educational philosophy, critical pedagogy is an "educational movement, guided by passion and principle, to help students develop consciousness of freedom, recognize authoritarian tendencies, and connect knowledge to power and the ability to take constructive action" (Giroux, 2010, p. B15). What follows is a review of emancipatory pedagogy as found in the dental and medical educational literature, followed by a review of selected critical pedagogical principles that are relevant to dental education.

In a review of the literature, only one academic dental institution employed emancipatory pedagogy as a teaching strategy (Whipp et al., 2000). In an effort to break free from traditional pedagogy, dental educators acknowledged that technical knowledge must be balanced with other forms of knowledge. Influenced by the work of Habermas, pedagogical balance was approached through a threefold view of knowledge: technical, practical, and emancipatory.

Technical knowledge in academic dentistry is developed in didactic classes that focus on science-based courses, using a cognitive and positivistic approach to learning. Practical knowledge is "developed by those interested in social interaction and communication" (Whipp et al, 2000, p. 861), and it is achieved through critical thinking or problem-based learning, case-based competencies, communication skill development, and direct patient care. Practical – or subjective – knowledge, combined with the students' technical knowledge, create a holistic blend of the art and science of dentistry. Emancipatory knowledge is that which develops lifelong, self-directed learners for autonomous practice. It increases self-awareness through reflection benefiting emotional and social competency. Moreover, emancipatory knowledge enhances a sense of social responsibility that promotes "ethical decision-making, and individual empowerment often derived through a critique of the social and political forces that shape and hinder personal and professional activities" (p. 861). Emancipatory pedagogy expands and focuses the art and science of dental education to address oral health care for diverse, underserved patient populations.

Critical pedagogy holds greater precedence in the medical education literature. Critical social theory (Boychuk-Duchscher, 2000; Brown, 2000) and emancipatory pedagogy (Romyn, 2000) are reported in the nursing literature as contributing to an educational paradigm shift from a behavioral to a humanistic approach in nursing care. Boychuck-Duchscher (2000) further clarified Habermas's third area of knowledge as one that positions critical reflection as a step in interpersonal communication: "Emancipatory interest centers upon power relationships which influence perception by intentionally

distorting communication. Through reflection the individual can go beyond structurally frozen norms toward a consciousness which both examines and reconstructs meaning for greater self-knowledge" (p. 456). Romyn (2000) defined emancipatory pedagogy as "teaching that has a freeing or liberatory function" (p. 120). This is approached through four teaching constructs: the cultivation of critical thinking, the development of equality in power dynamics, fostering awareness of disparity, and "transforming oppressive social structures within the larger social context" (p. 119).

The framework for critical theory was developed by Giroux, Freire, Habermas, Gramsci, and other pioneers. The educational goal with critical theory is to develop students' critical consciousness that fosters reflection on existing power structures and injustices, and seeks to transform oppressive structures through social action and empowerment (Darder, Baltodano, & Torres, 2003; Freire, 2009). Darder, Baltodano, and Torres (2003) outlined nine principles that capture the essence of critical pedagogy, several of which provide insight and guidance for dental educators.

The principle of cultural politics seeks to empower marginalized students by transforming pedagogical practices that contribute to inequity and injustice. One suggested method places the onus on students' shoulders, such that students should understand their own history and how it has shaped their lives. Through understanding their cultural politics students can "construct what they perceive as truth" (Darder, Baltodano, & Torres, 2003, p. 11). To achieve self-knowledge would require dental educators to create spaces in the curriculum to allow students time to reflect on their cultural politics and the impact it may have on their professional practice.

The principle of praxis seeks to promote a pedagogy that combines theory and practice through "an ongoing interaction of reflection, dialogue, and action" (Darder, Baltodano, & Torres, 2003, p. 15). Theory in conjunction with practical application is inherent in clinical education practices; however, it could be argued this is not as clear an option with didactic courses such as ethics and cultural competency training. The inclusion of reflection in the curriculum, small group discussion, and development of an action plan would be a practical strategy.

The principle of dialogue and conscientization is strongly influenced by the Brazilian educator, Paulo Freire (2009). "*Conscientização* or conscientization is defined as the process by which students, as empowered subjects, achieve a deepening awareness of the social realities that shape their lives and discover their own capacities to re-create them" (p. 15). The ideal process for critical social awareness is through respectful dialogue between faculty and the dental student, followed by further reflection, analysis, and dialogue in which to generate a deeper understanding.

Critical pedagogy currently has no formal place in academic dentistry; however, there are stepping stones paving the way. This includes a strong grounding in humanism and precedent in medical literature. In addition, several principles – traditionally reserved for empowering the disenfranchised – can influence academic dentistry towards a more egalitarian culture that reflects on patient care.

Transformational learning theory. Academic dentistry's curriculum reform efforts require a transformational type of change, one that "cultivates critical thinking, evidence-based practice, and lifelong learning" (Crain, 2008, p. 1100). If critical pedagogy is the future, and transformation the need, then the path for acquiring conscientization through critical reflection requires an adult learning theory to pave the way. Transformational Learning Theory (TLT) has been applied in adult educational research (Baumgartner, 2001; Dirkx, 1998; Mezirow, 1997; Taylor, 2007) and dental education (Boyd, 2002; Hanson & Alexander, 2010), and was therefore selected as part of a theoretical framework for research aimed at transforming attitudes of adult learners.

There is a paucity of literature on the use of transformational theory in dental education research. In one study on reflective learning, Hansen and Alexander (2010) utilized TLT as a theoretical framework for assessing dental hygiene students' journals. Students critically reflected on their clinical experiences and humanistic care process. The assessment rubric was influenced by Mezirow for identifying reflective versus non-reflective students, but these research procedures utilized just the tip of the TLT iceberg.

Transformational Learning Theory is a constructivist theory of adult education predicated on critically examining presuppositions and revising the interpretation in order to channel future action (Mezirow, 1991). The difference between childhood and adult learning is that a child's frame of reference is involuntarily constructed through socialization. Adults, on the other hand, can challenge biased and distorted presuppositions by reframing their understanding, or meaning perspectives. As Mezirow (1991) proclaimed, critical reflection on meaning perspectives and meaning schemes

constitutes a “major imperative of modern adulthood” (p. 35). Critical reflection and meaning perspectives are essential components of Transformational Learning Theory.

Critical reflection involves an active process to increase social consciousness and is defined as “the process by which students, as empowered subjects, achieve a deepening awareness of the social realities that shape their lives and discover their own capacities to re-create them” (Freire, 2009, p. 15). Critical reflection is considered an essential skill required of autonomous learners who will ultimately function as “socially responsible thinkers” (Mezirow, 1997, p. 8).

Meaning perspectives are “the structure of assumptions within which one’s past experience assimilates and transforms new experience” (Mezirow, 1991, p. 42). The unique compilation of three types of perspectives – epistemic, sociolinguistic, psychological – make up an individual’s meaning schemes, which is “the particular knowledge, beliefs, value judgments, and feelings that become articulated in an interpretation” (p. 44). Meaning schemes are often unexamined and may be comprised of distorted assumptions leading to dysfunction in adulthood. As Mezirow (1991) pointed out, ethnocentric individuals who believe in their own racial or cultural superiority have sociolinguistic meaning perspectives – often the result of unconscious childhood socializations. This type of sociocultural distortion may be an unexamined belief that contributes to hegemonic ideologies that lead to “blind prejudices or biases such as racism, sexism, and chauvinistic nationalism” (p. 131).

As critical thinkers, adult learners are able to challenge and refine their meaning perspectives. However, not all learning is transformational. Some beliefs and attitudes

are not only distorted, but blocked from consciousness, and any attempt to challenge beliefs may be met with immense anxiety (Mezirow, 1991). As long as a meaning perspective such as ethnocentrism sits contentedly within an individual's frame of reference, the likelihood of change is doubtful. This is where critical "self-reflection can lead to significant personal transformations" (Mezirow, 1997, p. 7).

Transforming a meaning perspective begins with either a single disorienting dilemma or a snowballing of several experiences that necessitate challenging long-held presuppositions. This is followed by an active practice of critical self-reflection to re-evaluate meaning perspectives. Interpretation of new meaning perspectives are evaluated through reflective discourse with others and followed up with an action plan. This process is iterative and it can involve emotions and feelings that add complexity to the transformative process (Baumgartner, 2001). Transformational education develops independent thinking in students; moreover, it provides educators with "a rationale for selecting appropriate educational practices and actively resisting social and cultural forces that distort and delimit adult learning" (Mezirow, 1991, p. 11).

The conceptual framework for this study included humanism, critical pedagogy, and Transformational Learning Theory. By honoring the foundational theory of humanism, and acknowledging a new paradigm of critical pedagogy on the horizon of academic dentistry, TLT is effectively positioned to guide research on transforming unexamined providers' prejudicial attitudes.

Educational Methods

Vulnerable populations experience increased rates of morbidity and mortality, increased barriers to care through no fault of their own, and little control over their health outcomes. But while leaders in health care understand this dynamic, Shi and Stevens (as cited in Dharamasi, 2006) noted there is no consensus on a solution. What is agreed is that academic dentistry's curriculum change efforts are key factors; moreover, they must not simply be a top dressing, but assure change efforts are imbedded in the culture of the dental education environment (ADEA, 2010; Haden, 2006; Roth, 2007). The following section presents a literature review of educational methods used to address the issue of oral health disparity through innovation in curricula. The curricular areas will cover ethics and professionalism, behavioral sciences, cultural competency, and the integration of critical thinking throughout curricula.

Ethics and professionalism. A course in ethics and professionalism is required of all dental students. Ethics are used to "guide judgment and action for issues that are complex, novel, ethically arguable, divisive, or of public concern" (CODA, 2010, p. 25). The American Dental Association (ADA) code of ethics (ADA, 2011) includes the following principles: patient autonomy, nonmaleficence, beneficence, justice, and veracity. In a review of the dental education literature, educational approaches regarding social responsibility are reviewed, gaps are identified, and highlights described with one study's suggestion for enhancing students' social consciousness through ethics curriculum reform.

Methods for teaching ethics have shifted over the last 30 years (Berk, 2001). Educational methodologies now include case-based learning, problem-based learning, small group discussions, and interdisciplinary teaching. Two studies demonstrated similarities among three strategies: use of community-based service-learning as an active learning strategy, followed by reflective journaling, and an assessment of attitude change (Gadbury-Amyot, Simmer-Beck, McCunniff, & Williams, 2006; Rubin, 2004). In both studies, positive attitudes related to ethical behavior were identified and post-experiential journals qualitatively verified the positive experience. Limitations from these studies noted that baseline attitudes and beliefs should have been established (Rubin, 2004) and that there was considerable time involvement with comprehensive journal reviews (Gadbury-Amyot et al., 2006).

Observed student outcomes after ethics courses were completed found there was a detachment between what is taught and ethical praxis (Bertolami, 2004; Dharamsi, 2006). Dental students (n=232) were surveyed on what they learned in their ethics course (Sharp & Kuthy, 2008). The most frequently cited subject matter identified by the students included confidentiality (21%), informed consent (21%), and working with children and teenagers (19%). If that is the extent of what the students found valuable, it could be argued the ethics curriculum is failing them and the underserved public at large. Bertolami (2004) and Rubin (2004) agree ethics courses alone are unable to change behavior. The authors illustrated this failure in three areas: classroom education alone is insufficient for change, ethics is uninteresting to students, and curricula “do not cultivate an introspective orientation to professional life” (Bertolami, 2004, p. 415).

Most of the ethics literature was aimed at informing licensed dentists. Topics covered discussion on leadership through service to others (Certosimo, 2009), access to care (Dharamsi, Pratt, & MacEntee, 2007; O'Toole, 2006), professional mindfulness (Lovas, Lovas, & Lovas, 2008) and empathy (Nash, 2010). However, there is still a need for a comprehensive approach to the development of ethical practitioners. Beemsterboer's (2006) suggestion to address ethics across three points in time serves as a potent suggestion for cultivating ethical dentists. These include admissions criteria that seek those of altruistic character, pedagogical methods applied throughout all four years of dental school, and ongoing cultivation of ethical behaviors after graduation.

Behavioral sciences. The primary focus of a behavioral sciences curriculum is patient-centered care. The standards specify that "Graduates must be competent in managing a diverse patient population and have the interpersonal and communications skills to function successfully in a multicultural work environment" (CODA, 2010, p. 24). The role of communication in patient-centered care cannot be underestimated. Perloff et al. (2006) noted that a provider's "beliefs, expectations, and attitudes – learned through culture and shaped through social experiences – profoundly influence the dynamic dance of doctor-patient interaction" (p. 837). Poor communication with minority patients can result in prejudiced behavior resulting in stereotyping, miscommunication, and loss of trust. In contrast, "culturally competent communication may be an important way to reduce inequities" (Perloff et al., 2006, p. 844).

Communication in behavioral sciences. A failure of academic dentistry to adequately address oral health disparity is due, in part, to a lack of culturally competent communication programs (Broder & Janal, 2006). Courses and methods for teaching communication and interpersonal skills were explored by Yoshida, Milgrom, and Coldwell (2002). Throughout 40 North American dental schools, a surprising 20% did not teach communication, the majority (65%) of schools did not have a stand-alone course on communication, and the majority (60%) that offered courses in communication was held only during the first two years of school. This is problematic, especially when sophistication of skills should be advancing over the final two years during the time when the more challenging special needs patients are seen by senior dental students (Yoshida, Milgrom, & Coldwell, 2002).

The most common method for teaching communication was lecture-based pedagogy (100%), with role playing (45%) and video-based demonstrations (40%) less commonly used (Yoshida, Milgrom, & Coldwell, 2002). Hannah, Millichamp, and Ayers (2004) utilized a comprehensive approach to communication training that included simulated patients, case-based scenarios, videotaped interviews, and role playing. One workshop used role playing with simulated patients, with a focus on personal and patient emotions as an integral component of interpersonal communication. Students reported that the simulated patients were the most helpful. Video-taping of students' interviewing skills, while helpful, produced a high level of apprehension.

Of the communication course topics covered, Yoshida, Milgrom, and Coldwell (2002) noted that 88% of schools addressed communication skills, followed by patient

interviewing (70%), patient education (68%), and cultural diversity (58%). The use of interpreters and role playing with patient-instructors were two methods that improved communication skills. Roland (2008) investigated interpreters for improved communication with linguistically diverse patients. The recommendation was that interpreters should not negate the need for students to understand the cultural norms, values, attitudes, and health beliefs of different racial and cultural groups. The use of patient-instructors (PI) to represent culturally diverse patients was also studied (Broder & Janal, 2006; Wagner et al., 2007). Broder and Janal (2006) considered self-reflection critical to the process, but a limitation was a loss of communication skills over time. Future research recommendations with PIs included addressing students' attitudes, beliefs, and behaviors associated with communication with diverse patients (Wagner et al., 2007).

Emotional intelligence in behavioral sciences. Together with communication skills, effective interpersonal skills are specified in the academic standards (CODA, 2010). Communication is a social act and it is a behavioral skill that can be taught as part of emotional and social competence (Hannah, Lim, & Ayers, 2009). Emotional intelligence (EI) of providers has been linked to improved patient satisfaction (Wager, Moseley, Grant, Gore, & Owens, 2002), patient-centered care (Birks & Watt, 2007), dental student clinical interview performance, and social skills and communication (Hannah, Lim, & Ayers, 2009).

Emotional intelligence, as opposed to cognitive intelligence, encompasses the range of social abilities to process and regulate emotions with resiliency, flexibility,

perception, and empathy. An individual with high EI responds to uncertainty, ambiguity, and unfamiliarity common with exposure to stress, changing situations, and diversity of people or environments (Mayer, Salovey, & Caruso, 2004; Tett, Fox, & Wang, 2005). Goleman (as cited in Dirkx, 2008) defined EI as one that "reflects self-awareness of one's own feelings and emotions, as well as those of others" (p. 14). Dirkx (2008) underscored the powerful role emotions contribute in a holistic approach to adult transformative learning. Jarvis (as cited in Dirkx, 2008) contended that "emotions can have a considerable effect on the way we think, on motivation and on beliefs, attitudes and values" (p. 11).

High emotional intelligence is a critical asset when students are engaged in provider-patient communication. Several studies have investigated the relationship between EI and perceived stress in dental students (Pau & Croucher, 2003; Pau et al., 2007). Naidu, Adams, Simeon, and Persad (2002) discovered increased stress when students transition from preclinical to clinical coursework. The stress in moving to patient care could be explained by Dogra, Giordano, and France (2007). The authors investigated the concept of uncertainty and ambiguity as an emotional factor in clinical patient encounters with medical students, particularly those from diverse patient populations that require skills in cultural competence. Those students with a higher aptitude for managing ambiguity were capable of less-biased thinking, increased emotional flexibility, and the ability to consider a broader foundation for understanding interpersonal encounters. The authors' recommendations were to caution against reinforcing a fact-based teaching style and highlighted the importance of self reflection.

Cultural competency. Comprising by far the largest body of evidence for research aimed at reducing oral health disparity, cultural competency programs have been a staple of academic dentistry for many years. CODA (2010) standards emphasize this trend by stipulating the need for diversity and cultural competency as integral to the academic experience. However, there are no requirements for academic dental institutions to conduct specific courses in public health and cultural competency, leaving this standard to be integrated throughout curricula (Rowland, Bean, & Casamassimo, 2006). CODA defines cultural competence and cultural competence training for dental students as follows:

> Cultural competence is having the ability to provide care to patients with diverse backgrounds, values, beliefs and behaviors including tailoring delivery to meet patients' social, cultural, and linguistic needs. Cultural competence training includes the development of a skill set for more effective provider-patient communication and stresses the importance of providers' understanding the relationship between diversity of culture, values, beliefs, behavior and language and the needs of patients (CODA, 2010, p. 14).

In a review of a decade's worth of cultural competency education across U.S. dental schools, the overall results were not flattering (Rowland, Bean, & Casamassimo, 2006). The majority (97%) of schools surveyed did not require faculty to take a cultural competency course. The majority (82%) of schools did not have a separate cultural competency course, but did integrate into other coursework. The majority (62%) of schools did not use a specific cultural competency text book or standardized published course materials. Moreover, 37% of students did not have a positive opinion of their training. The most common training method was lecture (88%), followed by small group discussion (67%), case studies (55%), videos (36%), and problem-based learning (24%).

In a systematic review on the effectiveness of cultural competency training for health professionals, there was evidence that knowledge, attitudes, and skills were improved (Beach et al., 2005). However, despite evidence that training improved patient satisfaction, there was insufficient evidence whether training improved health outcomes and health equity. The authors suggested that "interventions that focus on the avoidance of bias, general concepts of culture, and patient-centeredness are promising strategies that should be prioritized for further study" (p. 367). This recommendation is significant in light of studies that have identified healthcare provider bias and prejudicial attitudes as a barrier to care (Mertz, Manuel-Barkin, & Isman, 2000; Smedly, Stith, & Nelson, 2003).

The assessment of dental student attitudes is an essential part of cultural competence (Brown, Manogue & Rohlin, 2002). Assessing attitudes is fundamental due to the deleterious influence of provider attitudes – particularly prejudicial attitudes – on patient care (Mertz, Manuel-Barkin, & Isman, 2000; Smedly, Stith, & Nelson, 2003). The consequences of prejudice, bias, and stereotyping by health care providers range from subtle and unintended biases that may affect treatment recommendations, to the larger societal issue of healthcare disparity. Most healthcare providers consider prejudicial attitudes and behaviors to be politically incorrect and socially immoral. However, the challenge in addressing this pervasive and intractable issue is that "the vast majority of healthcare providers, like other members of society, may not recognize manifestations of prejudice in their own behavior" (Smedly, Stith, & Nelson, 2003, p. 162).

Cultural competency and dental student attitudes towards a variety of patient types have been studied extensively. They include special needs (Krause, Vainio,

Zwetchkenbaum, & Inglehart, 2010), the underserved (Smith, Ester, & Inglehart, 2006), ethnic and racial diversity (Wagner et al., 2008), individuals living with HIV/AIDS (Mulligan, Seirawan, Galligan, Lemme, 2006; Seacat, Litt, & Daniels, 2009), those with intellectual disabilities (DeLucia & Davis, 2009), older adults (Nochajski, Waldrop, Davis, Fabiano, & Goldberg, 2009), the homeless (Habibian, Elizondo, & Mulligan, 2010), the overweight and obese (Magliocca, K., Jabero, Alto, & Magliocca, J., 2005), individuals self-identified as lesbian, gay, bisexual, and transgender (Anderson, Patterson, Temple, & Inglehart, 2009), and low-income populations (Lévesque et al., 2009). Among those missing from the literature are studies that investigated dental students' attitudes towards social or cultural groups of their choosing.

Fortunately, dental students' negative attitudes can be modified (Brown, Manogue, & Rohlin, 2002; Wagner et al., 2008). In the preceding studies, educational methods to address dental student attitudes included lecture (DeLucia & Davis, 2009), training courses (Mulligan et al., 2006), case studies and vignettes (Seacat, Litt, & Daniels, 2009), patient-instructor program (Wagner et al., 2008), video (Lévesque et al., 2009), and community-based clinical rotations (Habibian, Elizondo, & Mulligan, 2010). None of the reviewed studies utilized reflection as a primary educational methodology, and none required dental students to explore their attitudes as a self-directed activity.

Cultural competency training is a critical requirement in the dental curriculum (ADEA, 2010; CODA, 2010). However, despite this promotion, there is "little evidence of a trickle-down to its member institutions [that] is apparent in the dental literature" (Rowland, Bean, & Casamassimo, 2006, p. 985).

Critical thinking. Dental institutions have worked tirelessly to appropriately prepare students for increased diversity in patient populations by integrating cultural competency into didactic and clinical instruction (Hewlett et al., 2009). However, a major goal of dental education is to develop autonomous, critical thinkers who are able to accommodate the vagaries of dental practice (Haden, 2006). To meet this goal, CODA (2010) standards specify a dental environment that promotes critical thinking in which students are able to "show intellectual breadth by thinking with an open mind, recognizing and evaluating assumptions, implications, and consequences; communicate effectively with others while reasoning through problems" (p. 10).

Critical thinking in the dental profession is defined as "the reflective process in which individuals assess a situation or evaluate data by using mental capacities characterized by adjectives such as compare, analyze, distinguish, reflect, and judge" (Hendricson et al., 2006, p. 930). Its value in the dental curriculum creates proficient dental health professionals and provides long range public health benefits such as access to affordable, quality care (DePaola & Slavkin, 2004). Although students may academically rank at the top of their class, the ability to translate this into problem-solving abilities with live patients is another matter (Hendricson et al., 2006).

Critical thinking educational methodologies include problem-based learning (Moore, 2007), self-directed learning, and reflective learning (Hendrickson et al., 2006). Reflective learning is an effective strategy to teach critical thinking skills (Strauss et al., 2003; Hendricson et al., 2006; Sweet, Wilson, & Pugsley, 2009).

There are several methods for dental students to engage in critical reflection. These include the photo-narrative method of analyzing photographs to understand feelings and ideas, critical incident reports, mentored small group discussions, case studies, videos, focus groups, and reflective journaling (Strauss et al., 2003). Numerous dental researchers (Boyd, 2002; Brodani, 2010; Gadbury-Amyot, Simmer-Beck, McCunniff, & Williams, 2006; Hanson & Alexander, 2010) commend written journaling as a successful pedagogical method for reflective learning; however, health educators as a whole continue to face challenges with implementation into their curricula (Epp, 2008).

Post-experiential reflection is the most common type of reflection noted in the literature. It is designed to help students learn from the actual experience, not just from classroom-based pedagogy (Fiddler & Marienau, 2008). This includes reflection after community-based rotations, community service-learning (CSL) opportunities (Gadbury-Amyot et al., 2006; Strauss et al., 2003), and clinical experiences (Boyd, 2002; Hanson & Alexander, 2010). Other studies focused on post-experiential reflection with special needs populations (Keselyak, Simmer-Beck, Bray, & Gadbury-Amyot, 2007) such as children (Lalumandier, Victoroff, & Theurnagle, 2004) and geriatric patient populations (MacEntee, Pruksapon, & Wyatt, 2005).

In a novel approach, Brondani (2010) required dental students to reflect before, during, and after a CSL program. Pre-experiential reflections highlighted students' expectations, challenges, and motivations. Reflection during CSL addressed changing expectations and experiences when students were in contact with community participants. Post-CSL reflection focused on successes, failures, and lessons learned. A positive

outcome was that “Students can move away from stereotyping and holding presuppositions about their experiences to a more personal exploration of their learning and themselves” (p. 635). With this one exception, pre-experiential reflection activities appeared to be an underutilized pedagogical strategy.

Reflective journal designs were discussed with minimal attention to detail. Boyd (2002) provided a three-sentence guideline for students to reflect on their clinic experience. Gadbury-Amyot et al. (2006) simply instructed students to write a one-page reflection paper on their clinical experience. Lalumandier, Victoroff, and Theurnagle (2004) asked students to write about their clinical experience with children. No wonder faculty are challenged with the prospect of adding reflective journaling to a dental curriculum. Whipp et al. (2000) did mention the use of heuristic strategies as a step-wise process to assist in ethical decision-making. However, no studies reviewed utilized heuristic strategies to guide students in critical reflective learning.

Methods for students to submit their reflective journals spanned several different formats: handwritten (Brondani, 2010; Hanson & Alexander, 2010); E-mail (Brondoni, 2010); electronic blogs (Hanson & Alexander, 2010); and upload to a pass-word protected intranet site (Brondani, 2010). Data analysis for reflective journals varied, with the majority utilizing the constant comparative method (Brondani, 2010; Hanson & Alexander, 2010; Gadbury et al., 2006; Keselyak, Simmer-Beck, Bray, & Gadbury-Amyot, 2007) as well as other theme-based analyses (Lalumandier, Victoroff, & Theurnagle, 2004). In an example of using the constant comparative method, Hanson and Alexander (2010) based their analysis on Mezirow’s Transformational Learning

Theory and Kember et al.'s (as cited in Hanson & Alexander, 2010) coding scheme for the purpose of identifying reflective and non-reflective thinking.

Several observations in the use of reflection are of notable importance. Boyd (2002) concluded that reflection as an educational methodology is not employed to its maximum potential; its use would likely intensify the process of critical thinking, especially if reflection is integrated throughout the dental school curriculum (Gadbury-Amyot et al., 2006; Strauss et al., 2003). Boyd (2002) and Strauss et al. (2003) noted the essential role of emotions as an affective component of the reflective process. Strauss et al. explained that through journaling "the opportunity to analyze experiences and to identify and express emotions and insights on social and ethical issues serves to legitimize the worth of student perceptions and engages them in ethical and critical reasoning" (p. 1241). Boyd (2002) related that reflection is effective in helping students work through the stress of ambiguous situations typical with clinical encounters.

Limitations were evident with several of the studies investigating reflective learning. Bush and Bissell (2008) noted their students did not see value in written reflection which supports the preference for students to receive, and not create, knowledge. Brondani (2010) expressed the greatest challenge in getting students to critically reflect at a deeper and more analytical level. Several authors (Hanson & Alexander, 2010; Strauss et al., 2003) admitted that thoughtful reflection does take time, and this could be problematic with overbooked student schedules. Lastly, MacEntee, Pruksapon, and Wyatt (2005) acknowledged that the content of students' journals should be met with a healthy dose of skepticism.

Summary

The focus of dentistry has evolved since the first dental school opened in 1840. Academic dental institutions are now tasked to produce practitioners competent in caring for our nation's oral health needs, with curricula designed to develop socially responsible dental providers knowledgeable and skilled in providing care for a diversity of patients.

Paving the way for dental educators to accomplish CODA's standards is the philosophical underpinnings of a humanistic education, which is gradually being influenced by the socio-political leanings of critical pedagogy. Educational methods used by faculty span a broad spectrum of purpose and design. They include courses in ethics, behavioral sciences, cultural competency, and critical thinking. However, academic courses alone are unable to change students' social justice attitudes and moral behavior.

The goal of academic dentistry is to develop autonomous, critical thinking, lifelong learners who are capable of providing oral health care for all Americans. While educational reform is attempting to prepare socially conscious providers, this organizational paradigm shift is still seeing a disconnection between accreditation mandates, facilitation in the classroom, and improved outcomes among the students. What is apparent from this review of the literature is that there are gaps in how to cultivate a more enduring, self-directed approach for future dental providers to address prejudicial attitudes as a barrier to oral health care.

Chapter 3

While dental diseases are preventable, the playing field clearly is not equitable. Despite national and state prevention programs, the dental safety net, and dental curricular improvements, there are gaps in the oral health care delivery system affecting access to care (Mertz & Finocchio, 2010). Rarely addressed as a causal factor are provider prejudicial attitudes as a barrier to care. In an effort to contribute to eliminating these disparities, academic dentistry has applied numerous pedagogical methods to cultivate culturally competent dental students and, ultimately, licensed dental professionals. Post-experiential reflection has proven valuable as a strategy for students to explore their experiences with patients; however, it is not without its challenges to faculty and students.

To address a research gap and pedagogical challenges, the aim of this study was to determine if self-directed, serialized critical reflection on the legitimacy of dental students' a priori prejudicial beliefs has intrinsic value in a preclinical curriculum. This study introduced an original serialized reflection assignment into the preclinical curriculum. The purpose was to engage students in critical reflection of their own prejudicial beliefs, stimulate awareness of the potential impact of those beliefs, and encourage action to further explore and modify a priori prejudice in the interest of effective professional practice. The broader goal was to contribute to the evidence base of critical pedagogical strategies and professional preparation methods used to reduce oral health disparity.

Research Objectives and Questions

Research objectives. This research was designed to meet the following objectives:

1. Determine if dental students' attitudinal self-awareness of a priori prejudicial beliefs was fostered through serialized critical reflection.
2. Explore the scope and nature of self-awareness of a priori prejudicial beliefs.
3. Determine if self-directed, critical reflection on prejudicial beliefs is perceived as valuable in dental students' preclinical preparation for patient care.
4. Contribute to ongoing research on dental provider attitudinal barriers to care, cultural competency, and professional preparation of the 21st century dental health care workforce.
5. Contribute to efforts towards reducing oral health disparities.

Research questions. This research was designed to address the following questions:

1. Was self-awareness of a priori prejudicial beliefs fostered through reflective journaling, and if so, what was the nature of participants' self-awareness?
2. Did participants experience personal value from preclinical critical reflection on their own prejudicial beliefs, and if so, how did they describe personal value?
3. What pedagogical insights and values can be drawn from dental students' critical reflective journaling on their own prejudicial beliefs that could inform the preclinical curriculum?

Definitions

The following operational definitions were used in the design and implementation of this study.

A priori prejudicial beliefs

In this study, a priori prejudicial beliefs are the unexamined prejudicial beliefs, attitudes, or assumptions held by the participants about their SSPs. An a priori prejudicial belief was operationalized as participants' quotations that described prejudicial assumptions, emotions, and feelings towards their SSP.

Critical reflection

In this study, critical reflection was the purposeful activity of Pacific dental students reflecting on their prejudicial beliefs as a way to raise awareness about the legitimacy of those beliefs. Critical reflection was operationalized as journal content that was substantive and representative of this type of reflection. Basic criteria included: participants had personal experience with their selected socio-cultural population, sources of prejudicial beliefs were identified as an actual personal experience or part of the participants' cultural or family narrative, participants described feelings and emotions about their beliefs, and change efforts and plans for future action were described.

Foster

In this study, to foster self-awareness of a priori prejudicial beliefs was to stimulate, but not direct or expect, a particular outcome from the process of critical reflection. The intention of the assignment was not to change prejudicial beliefs and attitudes, but to cultivate and encourage active critical reflection of prejudicial beliefs.

Heuristic/Serialized Heuristic Reflection

A heuristic is an organizational tool for note-taking, concept planning, and problem solving (Whipp, Ferguson, Wells, & Iacopino, 2000). In this study, a progressive series of heuristics was developed to guide Pacific students' reflective journaling. The Serialized Heuristic Reflection (SHR) – described in detail in Instrument Development – was the original multi-week tool used as this study's intervention.

Participants

Participants were defined as the Pacific dental students who provided written consent to participate in the study. Participants were operationalized as the students who were selected through inclusion criteria to be in the purposive sample for this study.

Pedagogical value

Pedagogical value was operationalized two ways. First, through participants' responses to the post-journaling survey question, "I believe there is educational value in students fostering self-awareness of beliefs prior to providing clinical care." Participants' responses were limited to agree/disagree with the statement. Second, through qualitative analysis, pedagogical value was operationalized as quotations that represented participants' subjective interpretation of their appraisal of critical reflection as an educational method applied in the preclinical curriculum.

Personal value

Personal value was operationalized two ways. First, through participants' responses to the post-journaling survey question, "I experienced personal value in fostering self-awareness of my assumptions/beliefs." Participants' responses were limited to agree/disagree with the statement. Second, through qualitative analysis, personal value was operationalized as journal statements that represented participants' subjective interpretation of their appraisal of critical reflection.

Preclinical curriculum

The preclinical curriculum was defined in this study as the first academic year of coursework before Pacific dental students began interacting with assigned patients in the Pacific's dental clinic or through extramural clinical rotations.

Selected socio-cultural population (SSP)

Selected socio-cultural population (SSP) was defined in this study as participants' selection of population subgroups described by specific social or cultural characteristics such as race, ethnicity, age, gender, sexual orientation, religion, body size, or socioeconomic status. Participants were instructed to identify an SSP of their choosing about which they may have had an assumption or unexamined belief.

Self-awareness

Self-awareness is a state of being that requires a methodology for gaining self-knowledge. Areas of understanding may include psychological and social issues (Richards, 2009) that explore attitudes, beliefs, values, and feelings (Cook, 1999). In this study, self-awareness of prejudicial beliefs was operationalized as participants' quotations that demonstrated a state of being in which participants had, or attempted to have, personal insight associated with their attitudes, beliefs, or assumptions towards their SSP.

Self-directed

A focus on self-directed learning guides students to move away from dependent faculty-centered instruction and encourages autonomous learning (CODA, 2010). For this assignment, Pacific students were provided the tools to critically reflect on their prejudicial beliefs and were expected to reflect without faculty intervention or guidance.

Students/dental students

Students and dental students were defined as the 2013 cohort of first year dental students at the University of the Pacific Arthur A. Dugoni School of Dentistry (Pacific) enrolled in the Integrated Clinical Sciences I course (ICS-I) for the 2010 Autumn Quarter.

Conceptual Framework

The philosophical foundation of dental education is firmly grounded in humanism (Haden et al., 2006); however, educational and social philosophies are increasingly drawn upon for influence in the dental sciences (Sweet, Wilson, & Pugsley, 2009). The conceptual framework for this study was designed to guide and influence the literature review, intervention design, integration of the intervention into the curriculum, data analysis, discussion, and consideration of limitations and significance. This study was grounded in 1) the humanistic model of education; 2) critical pedagogy; and, 3) Transformative Learning Theory.

Humanism. A humanistic environment is a requirement of academic dental institutions (CODA, 2010), in which "a humanistic pedagogy inculcates respect, tolerance, understanding, and concern for others and is fostered by mentoring, advising and small group interaction" (p. 10). Humanistic education considers the whole student in learning outcomes through cognitive, behavioral, and affective domains. Combs (1981) and Rogers (1983) suggest that affective processes are the key to a holistic and humanistic education, most notably the role and primacy of human emotions in adult learning (Dirkx, 2006). If students do not connect learning to what emotionally affects them, it has little meaning; furthermore, without emotional learning pedagogies suffer (Combs, 1981; Dirkx, 2006).

To draw more attention to the affective learning domain, the educational leadership of the Stockton campus of Pacific formed in 2005 the Center for Social and Emotional Competence. Pacific's Center defined SEC as "a set of related, intentional

behaviors of self-awareness, consideration, connection, and impacting others that foster successful outcomes in school, work, and life" ("Center for social," 2010, para. 1). The intent of integrating this aspect of humanism throughout Pacific's campuses is to build upon "the University's culture and commitment to whole person education and its mission to prepare graduates for 'responsible leadership in their careers and communities'" ("Center for social," 2010, para. 3).

Critical pedagogy. As an educational philosophy, critical pedagogy is an "educational movement, guided by passion and principle, to help students develop consciousness of freedom, recognize authoritarian tendencies, and connect knowledge to power and the ability to take constructive action" (Giroux, 2010, p. B15). As part of the conceptual framework, critical pedagogy is what links together Pacific's curricular reform efforts to this study's intervention. The study's focus on prejudicial attitudes as a barrier to care was intended to bring attention to the potential harm of disempowering relationships between providers and marginalized patient populations. An assumption is that the trend to educate a more socially responsible provider predicts a significant paradigm shift in academic dentistry; therefore, this study required an appropriate theoretical perspective that would guide the intervention design and its application as an integral component of the preclinical curriculum.

Transformational learning theory. Mezirow (1991) defined Transformational Learning Theory (TLT) as a constructivist approach that guides adult learners to critically examine their presuppositions and to revise their interpretation in order to channel future action. However, not all learning is transformational. Some beliefs and attitudes are not

only distorted, but blocked from consciousness, and attempts to challenge them are met with immense anxiety. This is where critical "self-reflection can lead to significant personal transformations" (Mezirow, 1997, p. 7).

This study utilized Baumgartner's (2001) synthesis of Mezirow's (1991) TLT phases of perspective transformation as a contextual model for placing the intervention into the curriculum. The TLT model is defined to begin with either a disorienting dilemma or a snowballing of several experiences that necessitate challenging long-held presuppositions. This is followed by an active practice of critical self-reflection to re-evaluate meaning perspectives. Interpretation of new meaning perspectives are evaluated through reflective discourse and followed up with an action plan.

The conceptual framework for this study included humanism, critical pedagogy, and Transformational Learning Theory. Humanism draws attention to the need for balanced, whole student learning. Critical pedagogy lends the educational philosophy that integrates social justice into 21st century curricula. This positions TLT to effectively guide implementation of critical reflection on the prejudicial attitudes of Pacific students.

Assumptions

This study was based on the following assumptions about the dental students, prejudice, and critical reflection.

Preclinical dental students.

- The Pacific dental students were of a sufficient balance and diversity of gender, age, ethnicity, and racial backgrounds to characterize typical American first year preclinical dental students.
- Preclinical dental students may possess unexamined prejudicial beliefs and attitudes towards specific socio-cultural populations.
- Preclinical dental students may not possess sufficient social and emotional competence for effective provider-patient communication.
- As part of their academic preparation for patient care, preclinical dental students should critically reflect on their beliefs and attitudes towards the underserved, high risk, and special needs patients.
- Preclinical dental students may not be self-motivated or may not have adequate skills to critically reflect on, and develop accurate self-awareness of, prejudicial beliefs.
- Preclinical dental students are capable of self-directed learning.
- Most of the preclinical dental students would agree to participate in the study.
- Preclinical dental students would engage in the study activities with candor and academic integrity.

Prejudice.

- Prejudicial attitudes are the outward projections of known or unexamined prejudicial beliefs, assumptions, or feelings.
- Self-awareness of prejudicial beliefs is a critical antecedent to achieving attitude change.
- Without the opportunity for participants to critically reflect on the legitimacy of prejudicial beliefs, the continued acquisition of cultural competency knowledge and skills would serve to support existing epistemic structures.
- Fostering self-awareness of prejudicial beliefs about potential patient populations can mitigate the deleterious affect on provider-patient communication, and contribute to the delivery of equitable oral health care.

Critical reflection.

- The in-class activities, videos, supplemental reading assignment, and small group discussions would be sufficient to initiate students' interest and readiness to critically reflect on their prejudicial beliefs.
- The weekly directions for the Serialized Heuristic Reflection (SHR) would elicit thoughtful, critical reflection of prejudicial beliefs leading to an action plan.
- The weekly format and time limitations imposed on the intervention by the study context would not impact the ability of participants to experience a transformation of prejudicial beliefs and/or attitudes.

Research Design

The aim of this study was to determine if self-directed, serialized critical reflection by dental students on the legitimacy of their a priori prejudicial beliefs has intrinsic value in a preclinical curriculum. This study utilized an integrated approach of qualitative and quantitative methods.

The study protocol was approved by San José State University on September 23, 2010. Permission and access to the study population at Pacific was granted by Associate Professor of Dental Practice, Christine Miller, RDH, MHS, MA (Figure A1). The intervention was incorporated into the 2010 Autumn Quarter Integrated Clinical Sciences I (ICS-I) curriculum as part of the regularly scheduled assignments. The assignment was first introduced to the dental students on October 11, 2010 and it concluded on December 17, 2010.

Intervention context. The intervention context was an essential aspect of this study's relevance to the faculty and students of Pacific. As part of Pacific's ongoing curriculum reform, cultural competency training was augmented in the 2010 Summer Quarter with the core concepts of social and emotional competency development. In a joint project between Pacific's Department of Dental Practice, Pacific's Center for Social and Emotional Competence, and this researcher, a curricular objective of the 2010 Autumn Quarter ICS-I course was to merge these two focus areas. Within this context, this study introduced an original serialized reflection assignment into the preclinical ICS-I curriculum.

To better prepare students as leaders in a competitive workforce, University leaders understand that students require more than entry-level knowledge and skills gained by cognitive and behavioral learning outcomes. Developed to address this focus, the Center for Social and Emotional Competence (Center) seeks to enhance humanistic whole student learning with the primary focus of developing "their capacity to understand themselves, the world around them, build meaningful relationships, and foster positive changes in our world" ("Center for social", 2010, para. 4). As of 2010, the proprietary model of Social and Emotional Competence (SEC) assessment and coaching programs has been presented to the University of the Pacific's undergraduate students as well as the Schools of Pharmacy, Law, Physical Therapy, and Dental.

The SEC program was presented in three sessions to Pacific's 142 first year dental students. Students completed an online SEC assessment consisting of a 50-item Likert-scaled questionnaire. The SEC scoring results included students' individual rank-ordered competencies among four social emotional domains: Self-Awareness, Consideration, Connection, and Impact. For the 2010 Summer Quarter first in-class session, Dr. Craig Seal presented a 2-hour seminar introducing the SEC model and a description of the students' SEC assessments. Dr. Seal concluded with an extensive practical application of the peer coaching model designed to address improving interpersonal relationship competencies.

The second session was presented by Dr. Seal to the entire class; however, students were divided into one of four small groups, each comprised of approximately 25% of the class. Each of the groups attended one of four scheduled seminars: two

seminars were offered on October 11, 2010 and two on October 18, 2010. The focus of this second session was to blend cultural competency into the framework of social and emotional development through a series of applied activities.

The first activity grounded students in the SEC model with a review and an opportunity for discussion. The second activity utilized a revised Values Vote exercise (Appendix B) to simulate a "disorienting dilemma" (Mezirow, 1991, p. 168) in which students anonymously responded to culturally-framed and potentially polarizing questions. The intent was to demonstrate that even in a classroom of future health care professionals there can be a range of assumptions, values, and emotions around contemporary social issues in a diverse society. In the small group debriefings, students discussed their reactions with faculty. Dr. Seal then summarized the consequences that disparate values and bias may have on provider-patient communication.

The final focus of this session was to introduce the opportunity for students to participate in this study with a researcher from San José State University. This study's Serialized Heuristic Reflection (SHR) activity was presented as a natural extension of the SEC's interpersonal peer coaching model, as the SHR would provide an opportunity for intrapersonal reflection for developing increased self-awareness. Dr. Seal explained the consent form and parameters of the study. Consent forms were handed out and then collected by this researcher at the end of each of the four group sessions. Consent procedures are described in detail in the section "Informed consent procedures."

For the third and final session, students were again divided into one of four small groups, each comprised of approximately 25% of the class. Each of the small groups

attended one of four seminars: October 25th, November 8th, November 22nd, or December 6th. The purpose of the third session was for students to thoughtfully consider the professional impact and possible consequences of biased attitudes on provider-patient interactions, and how students' social and emotional competence can assist them towards becoming practice-ready dental professionals.

During the 2-hour seminars, Dr. Seal reviewed the SEC model and conducted a check-in on students' progress using the SHR journals. To continue grounding the seminars in cultural competency, students were shown a post-911 DVD, made by the Pacific Class of 2004, entitled "What Makes You So Different." The DVD portrayed interviews with several individuals who experienced discrimination, stereotyping, or being treated differently due to their race or religion. Students were assigned two articles for reading, both with emphasis on communication and the responsibility of the provider in issues of health inequity. The class was divided into small groups for debriefing and discussion with faculty as facilitators. In the closing activity, students began to design their social and emotional action plan based on the SEC behavioral change model.

Throughout the Summer and Autumn 2010 quarter, students were continually engaged in a variety of activities designed to integrate cultural competency with social and emotional development. Students were provided a humanistically-balanced pedagogical approach through cognitive, behavioral, and affective learning outcomes. Educational strategies were varied and included short lectures, small group discussion, reading assignments, video, and self-directed critical reflection through journaling.

Instrument development. Serialized Heuristic Reflection (SHR) was an original journaling instrument designed for this study to guide participants in critical reflection of prejudicial beliefs and attitudes. Design of the SHR drew from the work of Moustakas (1990) and Seal et al. (2010). Heuristic inquiry (Moustakas, 1990) formed the humanistic framework for the intervention's stepwise method designed to foster self-awareness of prejudicial beliefs. The SEC domains (Seal et al., 2010) provided the weekly prompts that guided students to reflect, process, and express their emotions and feelings in written format.

The decision to develop the SHR journal for this study was borne out of a dearth of detailed guides to engage students in critical reflection (Boyd, 2002; Gadbury-Amyot et al., 2006; Lalumandier, Victoroff, & Theurnagle, 2004). Moreover, Chris Miller, RDH, MHS, MA from Pacific's Department of Dental Practice, and Craig Seal, PhD from Pacific's Center for Social and Emotional Competence, recommended a detailed guide for several reasons: to minimize student confusion over nebulous directions on what it means to "reflect," to align with existing curriculum structures of cultural competency training and social and emotional competency training, to minimize faculty oversight due to time constraints, and to facilitate self-directed action by students. Additional factors considered in the design included: a method to engage students in delivering a critical level of reflection, prompts designed to elicit descriptions of emotions related to prejudicial beliefs, an opportunity for students to develop an action plan for lifelong learning, a simple survey to capture participants' perceptions, and an open-ended comment section for additional remarks.

Consideration of these factors also influenced how the SHR journaling assignment would be integrated into the curriculum (see previous "Intervention Context") as well as design of the SHR electronic journal templates. The following describes salient influencing factors of heuristic inquiry and SEC on the design of the SHR templates, data collection instruments for the SHR, and confidentiality protocols.

Heuristics encompass both an intrapersonal process of discovery and a research design. Most known for his work in this field, humanist Clark Moustakas (1990) identified seven stages that outline heuristic inquiry: initial engagement identifying an issue of interest; immersion of the self into the issue through multiple perspectives; incubation as a way to allow the information from immersion to percolate; illumination of the issue into a new level of awareness; explication to fully examine the issue; creative synthesis to redefine into a presentable format; and validation through feedback. This process requires discipline and receptivity through the progression of self-discovery.

> The heuristic process is a consuming endeavor; it allows the ability to give voice to the thoughts, issues, problems, questions that arise around an unsolvable problem. Within this interiority, feeling responses to external circumstances combine to create meaning, and out of meaning, personalities are organized, personal and cultural myths are formed, worldviews are constructed, and paradigms are set in place (Sela-Smith, 2002, p. 54).

Seal et al. (2010) utilized the theoretical framework of social and emotional development (SED), and integrated it into a model of socio-behavioral competencies. The Social and Emotional Competency (SEC) model is designed to help "understand student behavior and to plan potential interventions by focusing on student competencies and increasing the student's capacity to recognize multiple emotional cues, implement diverse behavioral responses, and expand the range of possible social outcomes" (p. 8).

The SEC constructs are holistic by design, so that together they encompass intrapersonal and interpersonal spheres through four constructs.

Each of the four constructs contains factors that further delineate each characteristic. The construct of *self-awareness* is comprised of three factors – emotions, strengths and limitations, and preferences. Emotional self-awareness is of particular importance for this study, with sub-factors focused on identification of feelings and recognizing the source of what generates particular emotions. The construct of *consideration of others* is comprised of two factors – empathy and self-monitoring. Empathy moves from understanding the self, to understanding how others feel. Self-monitoring is the ability to be considerate in regards to the impact of your actions on others. *Connection with others* moves the sphere from the self, to others, to building relationships with others and includes the sub-factors of sociability and intimacy. Sociability is the ability to form and maintain meaningful relationships. Intimacy requires the ability to have open, honest communication in a trusting relationship. Finally, *impacting others* is defined as "the propensity to influence others by seeking leadership opportunities and motivating others to change" (Seal et al., 2010, p. 7). As a critical skill for dentists engaged in health promotion efforts, impacting others through leadership is accomplished through the ability to take initiative and to be inspirational. As a multi-level framework, all four constructs work in harmony to contribute to whole student learning (Seal et al., 2010).

Data Collection Instruments

Data collection instruments for the SHR journal consisted of six electronic journal templates (Appendix C). Each template was designed as a Microsoft Word® protected form to create a standardized data collection format that was protected from inadvertent alteration or deletion of instructions by participants. Standardization in the format included a consistent template layout with three essential components: location for participants' identification, including confidentiality protocols; directions for critical reflection; and a location for participants to enter journal text. Standardization in template design with a protected form also assured formatting consistency with page margins, font type and size, and line spacing. Due to the protected form format, participants were limited to enter text only in text form fields as indicated by a gray box on their electronic templates; there were no page length limitations.

Each of the six SHR journal templates included distinct instructions to progressively guide participants in critical reflection of their prejudicial beliefs. As shown in Figure 1, the SHR framework used the first six stages of heuristic inquiry and the four constructs of SEC as the weekly prompts to guide reflection.

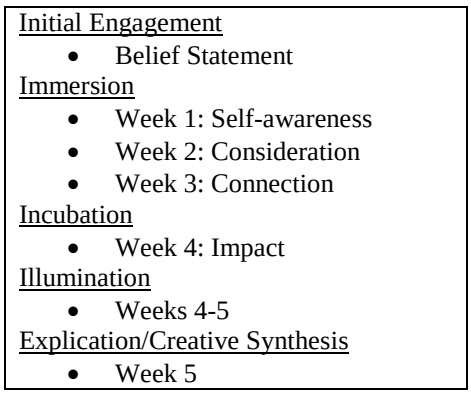

Figure 1. Serialized Heuristic Reflection Framework Blending the Constructs of Heuristic Inquiry and Social and Emotional Competence

The first SHR template instructed participants to generate a Belief Statement. This met the heuristic inquiry (HI) phase of *Initial Engagement*, or identification of a subject of interest. As shown in Figure 2, participants were instructed to select a population with which they may have an assumption, preconceived notion, a mindset, or an unexamined area of understanding. This was followed by consideration of a stereotype (right or wrong) the participants may have about the selected population.

For whatever reasons, I believe _____ (insert a socio-cultural/ethnic/racial group) are _____ (insert your interpretation of this group). I acknowledge I am not completely clear why I believe this way; furthermore, I realize this might influence my attitude towards, and communication with, these individuals, as well as my ability to provide equitable oral health care in my professional practice.

Figure 2. Belief Statement Instructions Directing Participants to Identify Their Own Prejudicial Beliefs About a Socio-Cultural Population

Weeks 1, 2, and 3 SHR journal instructions met the HI phase of *Immersion* of the self by reflection on participants' beliefs from both the interpersonal and intrapersonal perspectives: Week 1 focused on the SEC construct of Self-Awareness of the prejudicial belief; Week 2 focused on Consideration of others, and Week 3 Connection with others.

Weeks 4 and 5 transitioned participants away from gathering new information, and guided them to reflect comprehensively on their articulated belief. Week 4 met the HI phase of *Incubation*. This phase required students to let go of controlling the outcome to fit their previously held assumptions, and to reflect on the preceding four weeks allowing what they discovered about their prejudicial belief to sift, filter, morph, and recombine into new areas of self-awareness. The SEC construct of Impact provided the guide for continued critical reflection. Week 4 concluded with the HI phase of

Illumination. Participants were asked to reconsider their Belief Statements, and to consider what social and emotional competencies would help transform their beliefs.

Week 5 met the final two phases of the HI framework – *Explication* and *Creative Synthesis*. Explication directed participants to rewrite their Belief Statements; summarize their insights, significant emotions, attitudes, beliefs, and assumptions after journaling; and rewrite the Belief Statement in light of critical reflection. As shown in Figure 3, Week 5's SHR journal template included a dichotomous-scaled survey on participants' perceptions regarding self-awareness of beliefs, attitude change, personal value, and educational value of preclinical reflection.

Survey: Please check the box that best represents your response

Agree	Disagree	
☐	☐	Self-awareness of my beliefs was fostered (positive or negative) through reflective journaling
☐	☐	I had a positive change in attitude towards my selected group after reflective journaling.
☐	☐	I experienced personal value in fostering self-awareness of my assumptions/beliefs
☐	☐	I believe there is educational value in students fostering self-awareness of beliefs prior to providing clinical care

Figure 3. Survey Presented to Students in the Week 5 Journal

Following the survey, participants were asked to generate an action plan – or, *Creative Synthesis*. Participants were instructed to write how they will further address their beliefs about, and communication with, their selected group particularly as it related to providing care for patients, e.g., take cultural competency training, or continue journaling. The final open-ended comment section allowed for a free range of participants' remarks, with no subject content or space limitations.

Confidentiality protocols. Confidentiality protocols were integrated into the weekly SHR journal template design; the submission, review and grading process; and data analysis procedures. To protect participants' confidentiality, each weekly SHR journal template was designed to identify authors with a unique code in place of their names. As shown in Figure 4, each SHR journal template included a page header with directions for creating a confidential identifier that consisted of participants' Pacific-assigned three-digit student number, followed by the respective week of the SHR journal. For example, a participant with student #147 in Week 1 would code that week's journal as follows: 147.Week1.

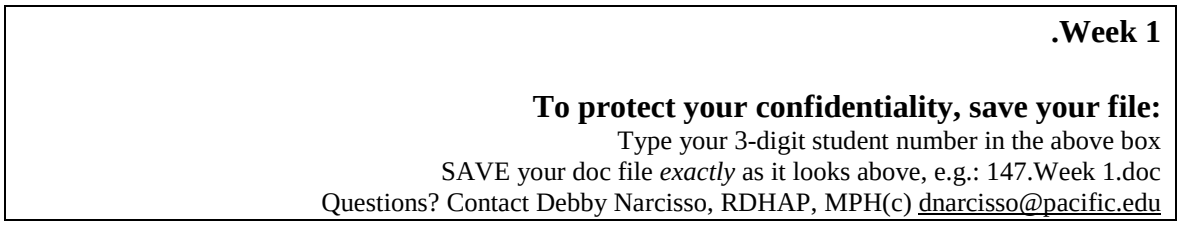

Figure 4. Template Page Header with Instructions for Students to Electronically Save Their Journals.

Using the same coding convention, participants were also instructed to rename the electronic SHR journal template as a Microsoft Word® document, and save the file on their personal computers. For example, if a participant with student number #147 saved their SHR template for Week 1, the electronic Microsoft Word® file would be named as follows: 147.Week1.doc. To protect the confidentiality of participants, the class roster with the student names and student numbers was saved separately as a password-protected file on the personal computer of this researcher. Participants were solely responsible for the security of their journals while stored on their personal computers.

Participants' access to the SHR journal templates, their subsequent secure submissions of completed journals, and grading of the final assignment was done through the password-protected Pacific Sakai CLE online course management system. Sakai is an educational software program available to faculty and students for the purpose of electronically disseminating course materials, online testing, grading, discussion forums, E-mail, and assignment uploads. Participants were instructed to upload coded files to Sakai through the "assignment dropbox" – a feature designed to allow electronic submission of assignments.

Accessibility and reading rights to all journals were limited to this researcher. The purpose of this was to provide students the freedom to write without judgment, and to eliminate or minimize concerns about inadvertently influencing faculty attitudes towards their students. To further maintain confidentiality, this researcher was solely responsible for reviewing each of the five journals submitted from the 142 dental students. All first year dental students received a grade of 10 points for completing all five journals, pro-rated at 2 points per journal in the event of incompletes. Journals were not graded based on content or timeliness. For data analysis purposes, only participants' files were uploaded to the password-protected personal computer of this researcher.

Participants and Consent

The following describes the participants for this study, the recruitment procedures, and informed consent procedures.

Participants. The study population consisted of 142 dental students in the 2013 cohort enrolled at the University of the Pacific Arthur A. Dugoni School of Dentistry (Pacific), located at 2155 Webster Street, San Francisco, California, 94115. The non-experimental approach was selected on ethical grounds; consequently, all Pacific first year dental students were included to assure continuity of the curriculum as well as equal opportunity to experience the intervention.

Recruitment procedures. The faculty of Pacific's Department of Dental Practice determined that the best point for recruiting students from the 2010 Autumn Quarter would be the Integrated Clinical Sciences-I (ICS-I) course. ICS-I is offered the first year of dental school and is delivered across three quarters – Summer, Autumn, and Winter – with each quarter consisting of eleven weeks of instruction, plus one week of final examinations. The ICS-I course is an orientation to the clinical practice of dentistry, and is defined as "the didactic component of a multi-disciplinary, year-long course designed to prepare students to treat patients in Pacific's Main Dental Clinic and engage in community oral health events and programs" ("School catalogue," 2011, p. 14).

Informed consent procedures. Informed consent procedures consisted of a verbal description by Dr. Craig Seal on the required assignment and option to participate in the research study. The process was repeated four times: in two seminars on October 11, 2010 and two seminars on October 18, 2010. Verbal description of the consent form was conducted in English. This included a description of the practical intent of the study, foreseeable risk, resources for emotional support, confidentiality protocols, and compensation and services statement. Students were informed that while they were all required to participate in the assignment for a maximum grade of 10 points, they were not required to participate in the study. To minimize the possibility of coercion, students were assured that not giving consent would not reflect on their grades or relationship with faculty.

Consent forms (Appendix A, Figure A2) were printed on San José State University letterhead, and followed all requirements as outlined by the Institutional Review Board. Dr. Seal and this researcher distributed the consent forms to the students at the end of the second session. Students were given time in class to consider their options. If students agreed to be included in the study, they were instructed to sign the consents with both their signature and student number. Students were then instructed to turn over their forms to maintain confidentiality when handing them back at the front of the class. All signed and unsigned consent forms were collected by this researcher, and transported to a secure location in San Jose, California for processing.

Consent form processing consisted of the following procedures: each consent form was inspected for accuracy of name and student number to assure they matched the

class roster, and each verified and signed consent form was signed by this researcher. One hundred and thirty-two students signed consent forms and 10 students elected to not participate. Non-participants were indicated by receipt of an unsigned form. A single copy of each signed consent form was made at a local business supply store. Each consent form was placed inside its own separate San José State University envelope, and the respective student's name and student number was hand-written on the outside of the envelope. For students that elected to not participate, each envelope contained an unsigned copy of the consent form, along with a 6" x 2" strip of paper with the following typed message:

> Student exercised right to not participate in the research study.
> Blank copy of consent form included for your records.
> Results will be kept confidential and not included in this study.

All individual sealed envelopes were delivered to Pacific by this researcher. Envelopes were distributed and placed into students' campus mailboxes by Michael Allen, Department of Dental Practice. Original consent forms are in the possession of this researcher, and are in a secure location in San Jose, California.

Data Management and Analysis Planning

The following describes the data sources for this study, equipment required to store and analyze the data, and the qualitative and quantitative data analysis plan.

Data management. The study drew from four data sources: 1) the 2013 cohort class roster, provided by Pacific's Department of Dental Practice; 2) demographic data on participants' age, gender, and race, provided by Pacific's Office of Academic Affairs; 3) electronic journal submissions from participants who provided written consent and, 4) a four-question survey taken as part of the fifth journal assignment. Management of all data sources was conducted with fidelity to pre-approved security and confidentiality protocols (see "Confidentiality protocols").

Software equipment to manage data files included Microsoft® Office Excel 2003 and Microsoft® Office Word 2003. Quantitative data were analyzed with a combination of hand calculations, PASW Statistics version 18.0, and WinPepi version 10.0. Qualitative data were analyzed with a combination of a computer software program Atlas.ti 6.2, and a paper system of index cards with key concepts and emerging themes. Materials included a personal laptop computer, customary office supplies, San José State University letterhead, and envelopes.

Data analysis plan. The data for this study were analyzed through both qualitative and quantitative methods. The data analysis plan followed a three-step process: sampling procedures, quantitative survey analysis, and qualitative journal analysis. Sampling procedures were integral to, and integrated with, the qualitative data analysis plan. Described in a subsequent section headed "Sampling procedures" are the inclusion criteria, descriptive results obtained from the study population, and participant group selection process.

The quantitative analysis plan for the 4-question survey included simple counts, proportions, and statistical testing. The descriptive analysis plan included obtaining a simple count of participants that agreed with each of the survey questions versus those that disagreed. Analysis procedures were designed to determine the majority proportions based on individual participants' gender and race as well as majority proportions by participant groups. See "Sampling procedures" for more information on participant groups. Hypothesis testing included testing a single sample against a set proportion of 0.5. This proportion was selected based on the inconclusive nature of research that described dental students' opinions regarding reflection activities (Brown, Manogue, & Rohlin, 2002; Bush & Bissell, 2008). Statistical tests for inference about a proportion used the exact binomial method for a single sample. This included hypothesis testing and confidence intervals for a proportion based on individual participants that agreed versus disagreed with the survey question. Participant groups were likewise tested for significance between those groups that agreed versus disagreed with the survey questions.

The qualitative data analysis plan for the SHR journals utilized the constant comparative method of analyzing individual SHR journals, followed by comparison within participant groups, and among participant groups. See "Sampling procedures" for more information on participant groups.

Participants' reflective journals were qualitatively analyzed using the constant comparative method. No pre-codes were assigned. The analysis plan included line-by-line open coding, followed by focused coding. Analysis was designed to be iterative until saturation and no new themes emerged. See Appendix E for detailed analysis protocols.

Planning to Enhance Scientific Integrity

Rigor in data collection instruments, accuracy in data collection processes, and reflexivity of the researcher in this study were accomplished through a variety of methods. The methods used to enhance the scientific integrity of this study included consistency, credibility, and trustworthiness.

Consistency. For this study, consistency was defined as coordinated steps taken to assure reliability in producing comparable results under similar conditions. Analogous to quantitative reliability, consistency for this largely qualitative study involved the following: participant limitations, boundaries with the intervention design and delivery, and intricate sampling procedures. These steps were conducted to give surety, that as a whole, data were collected under sound, scientific conditions such that results could reasonably be duplicated, or closely approximated if repeated.

Selection of the study population was deliberate by limiting participants to first-year dental students. Restricting the study to students with no clinical experience at

Pacific minimized the impact of mixed results. Consistency in context was established through incorporation of the intervention within the University-established SEC program as previously delivered to Pacific's schools of Law, Pharmacy, and Physical Therapy.

Consistency was further established through the SHR journal design by adapting the Social and Emotional Competence (Seal et al., 2010) constructs within the SHR templates. Consistency was further established in the template design to minimize participants not following directions by intentionally utilizing "forced form fields" to assure font type, font size, and location for writing text was the same for all participants. This had the corollary effect of eliminating the need for transcription, thereby minimizing the possible loss of data or misrepresentation of data that might come with transcription.

Consistency in the SHR journal template was purposefully designed to focus on critical reflection of prejudicial beliefs. This allowed students to self-select from a limitless variety of socio-cultural population groups. The intention of self-selection was to assure complete flexibility and freedom for students to apply the SHR model to fit their personal interests and needs, while still meeting assignment requirements. The SHR journal directions were consistently delivered to all students and participants at the same time by E-mail reminders. Eliminating staged notifications and word-of-mouth announcements minimized unequal interpretation of directions. Lastly, consistency was established through the three-level participant selection process to assure the final sample population represented the entire cohort.

Credibility. For this study, credibility was defined as efforts taken to assure data were valid in regards to exploring the concept of social and emotional competency of prejudicial beliefs. Analogous to quantitative validity, credibility for this largely qualitative study involved two areas: 1) the SHR weekly journal directions were based on the work of published theorists and social scientists and, 2) inclusion of participants' summary of insights, self-report survey, and open-ended comments section. These steps were conducted to give surety, that as a whole, the SHR data collection instrument could reasonably be assumed to produce results that demonstrated in-depth critical reflection was achieved by participants.

Credibility of the SHR was established through the previously validated works of theorist Moustakas (1990) and the social scientists (Seal et al., 2010) who contributed to the framework and guides of the SHR journal templates. Further credibility was established to assure that integration of the SEC constructs and sub-factors reflected the intent of authors by reviewing each week's template directions with Craig Seal, Ph.D., principle developer of the SEC model. Credibility in the self-reported survey on participants' perceptions was positioned at the end of the assignment in the Week 5 SHR journal, with key phrases underlined to reinforce what was pertinent in each question. This was followed up by a summary of insights and an open-ended comment section. The intent for the open-ended comment section was to allow participants the opportunity to provide additional information that might corroborate or refute interpretation of any of the data collection methods.

Trustworthiness. For this study, trustworthiness was defined as efforts taken to assure the dependability and accuracy of data collection methods and processes. Trustworthiness was accomplished through the following: triangulation, audit trail, transparency, data saturation, and investigator reflexivity. These methods were conducted to give surety that data were collected, analyzed, and reported with honesty and integrity such that results could reasonably be assumed to be truthful.

Triangulation of methods was designed to gather data from multiple sources within the SHR journal design to account for intra-participant and inter-participant trustworthiness. This was accomplished by collecting and comparing data from six areas: the pre/post Belief Statements, weekly journals, summary of insights, self-report survey, action plan, and the comments section. All six methods were included in the SHR journal design to provide an opportunity for the study's research questions to be answered from an accordant perspective. Intra-participant incongruence would be apparent, for example, if a student's post-Belief Statement reflected a positive belief change, while the survey on self-awareness or attitude change contradicted this result. Inter-participant incongruence would be apparent, for example, if qualitative analyses demonstrated thoughtful, critical reflection was achieved as evidenced by widespread insightful prose, while the survey responses indicated personal or pedagogical value was not perceived by participants as a whole.

An audit trail was planned and utilized with two critical aspects of the study: sampling procedures and qualitative data analysis. An audit trail journal was kept by this researcher to track the development of the analytical protocol used to assure a fair

representation of participants through sampling methods (Appendix D). The use of an audit trail was designed to provide added rigor and transparency through a chronological rendering of the insights and key decisions made to assure a representative sample for data analysis. An audit trail journal was similarly used during the qualitative data analysis process. In anticipation of the challenges of open coding over 200 pages of journals, the qualitative audit trail was designed to transparently and chronologically log decisions made throughout the analysis process.

Data saturation protocols were employed to assure that a rich and thick description of thematic codes would be possible through a variety of comparisons using the constant comparative method. This process was designed to include a balance of positive and negative results to assure equal representation.

Investigator reflexivity was defined as ongoing professional responsibility, openness, creativity, and responsiveness to the emerging data. An ongoing audit trail journal catalogued the process, insights, and ideas that arose throughout the study. Every attempt was made to acknowledge this researcher's personal perspective, and to utilize this perspective in a way that honored participants' unique and diverse experiences.

Sampling Procedures

All Pacific dental students who provided written informed consent were eligible for inclusion in this study. Initial qualitative data analysis involved reading through approximately 10 journals for a basic overview and perspective of the participants' work product. What was discovered at this stage was variability in several factors. These factors were determined to qualify as inclusion criteria, which subsequently became criteria for inclusion into a purposive sample. Three levels of selection criteria were employed to establish eligibility for participant's inclusion in the purposive sample.

The first level selection criterion was based on the completeness of journals. Journals for all eligible participants in the study population were scanned for completeness. This criterion required that participants submitted one journal for each of the five weeks, for a total of five separate journals. If a participant submitted all five journals, they were included in the purposive sample. If a participant did not submit one or more journals for the assignment, they were excluded from the purposive sample. See Appendix D, Table D1, for complete descriptive results of selection levels.

The second level selection criterion was based on analysis of the participants' selected socio-cultural populations (SSP). Belief Statements for all eligible participants were qualitatively analyzed for similarities and differences among the socio-cultural populations. What emerged from analysis was a logical grouping of the SSPs into several cultural or social categories. To qualify as a category required five or more SSPs that fell into the logical grouping. If a participant selected a SSP that fell into one of the categories, they were included in the purposive sample. If a participant's SSP did not fall

into one of the categories, they were excluded from the purposive sample. See Appendix D, Table D2, for complete results of all participants' selected socio-cultural populations. As described in the subsequent section, "Participant groups," these categories eventually led to the criterion for generating participant groups used to compare within and among groups for qualitative data analysis.

The third level selection process was based on a combination of essential criteria: standardized length of written material, substantiveness of writing, a representative balance of survey results, open-ended comments, and demographic variables. This process was iterative and based on preferences that participants met these criteria. Participants were not necessarily excluded if they did not meet all of the criteria.

Length criterion required participants to have written greater than one paragraph per week, with the preference for one full page per each of the five weeks. Journals for all eligible participants in the study population were scanned for this criterion. To determine that journal content was substantive and representative of critical reflection also involved scanning each of the participants' journals. Selection was based on a preference for the following criteria:

1. Participants had personal experience with their socio-cultural group.
2. Sources of prejudicial beliefs were identified as an actual personal experience or part of the participants' cultural narrative.
3. Participants described feelings and emotions.
4. Change efforts and plans for future action were described.
5. Insights were offered regarding perceived personal and educational value.

The open-ended comments section criterion required a preference for participants to have written comments about their experience with, or opinions of, critical reflection. The comments section of Week 5 of the SHR journal was an optional component for participants to write about their experience or opinions with critical reflection. To determine that a balance of positive and negative comments was included involved scanning each of the participants' journals. See Appendix D, Table D3, for results on the distribution of participants' comments.

The survey questions criterion required participants to have answered the four-question, dichotomous-scaled survey on participants' perceptions of critical reflection. The four questions were limited to a response of agree or disagree. The criterion was to have a balance of agreed versus disagreed responses among the participants who would become members in the final purposive sample. To determine there was a balance of responses required descriptive data analysis to obtain a simple count. See Appendix D, Table D4, for complete results on the distribution of survey responses.

The final criterion was to select participants that would demographically be representative of the study population. To determine there was a balance of gender, race, and ages required descriptive data analysis to obtain simple counts and proportions. Again, this process was iterative using the previously described criteria throughout the process. See Appendix D, Table D1, for descriptive results of all selection levels. Across all identified variables considered relevant by the researcher for generating a representative sample, the final sample population of 44 participants met the study's requirements for trustworthiness in answering the four research questions.

Participant groups. Defining participant groups expanded utilization of the constant comparative method for qualitative data analysis within and among groups. Thematic comparisons by group were conducted to evaluate participants who shared the same experience journaling about specific population types.

As shown in Appendix D, Table D2, participants' selected socio-cultural populations (SSP) clustered into five population types that served as the categories for assigning the 44 participants' group membership. The participant groups were as follows: Age (*n*=9), Race (*n*=10), Religion (*n*=11), Health (*n*=5), and SES (*n*=9). See Appendix D for detailed information on the sampling process, inclusion criteria, and defining participant groups.

Summary

The aim of this study was to determine if self-directed, serialized critical reflection on the legitimacy of dental students' a priori prejudicial beliefs has intrinsic value in a preclinical curriculum. To answer the three research questions, this study was designed and implemented through respectful collaboration, consideration towards the dental students and faculty, careful planning, sound scientific methodology, and attention to detail.

Collaboration with key stakeholders at Pacific was an essential ingredient throughout the study. The Autumn 2010 sessions were thoughtfully developed over 12 months of planning through the Department of Dental Practice for the Integrated Clinical Sciences I (ICS-I) course. Both experts in their fields, Ms. Miller and Dr. Seal contributed their knowledge and skills in the curricular context and the intervention design. Fundamentally, collaboration with these esteemed colleagues was intended to lend a layer of authority considered vital to the design of this study. With the aim of gaining buy-in with relevant pedagogical material for the students, development of the curricular context and the intervention took into careful consideration the needs, time constraints, and applicability to educational goals for both students and faculty. Most notably, due to the potentially controversial nature of critical reflection on prejudices, consideration of students' emotional vulnerability was always at the forefront of the study design.

Sound scientific methodology was achieved through a framework grounded in theory, planned carefully through an integrated approach of qualitative and quantitative

methods, and administered with ethical integrity. By honoring academic dentistry's foundational theory of humanism, and acknowledging critical pedagogy as an emerging and influential paradigm, Transformational Learning Theory was effectively positioned to guide research on transforming unexamined providers' beliefs.

The mixed research approach was designed to capture rich data from multiple perspectives, while the data management and analysis plans were designed to increase confidence in the results through consistency, credibility, and trustworthiness measures. Ethical measures were conducted throughout all phases of the research, from informed consents, to privacy protection with the use of file-coding, and inclusion of all first year dental students to assure equal opportunity to experience the intervention.

Lastly, the research design, implementation, and reporting procedures paid close attention to detail – while still appreciating the big picture. The numerous details employed along all phases were designed to address the more narrowed focus of this study – exploring the potential of self-directed pedagogical methods that engage preclinical dental students in reflection on their prejudicial beliefs. If successful, this strategy could be used in a preclinical dental curriculum as a self-directed approach for positively influencing dental provider-patient communication, and ultimately reducing oral health disparities.

Chapter 4

The following chapter presents results from the study's exploration of the participants' reflection journals on the nature of self-awareness of prejudicial beliefs, assessment of the participants' personal value perceived from critical reflection, and identification of the participants' insights about the reflection assignment that could inform the preclinical curriculum. The chapter opens with a brief description of the study's sample population, then a presentation of qualitative results for each research question, followed by quantitative results. Additional supporting information is presented and detailed in Appendices D and E.

Study Sample

One hundred and forty-two students matriculated in the University of the Pacific Arthur A. Dugoni School of Dentistry; of these, 93% (*n*=132) signed consent forms to participate in the study. Several levels of criteria were employed to establish eligibility for participant's inclusion in the study sample. The inclusion criteria included: the completeness of participants' journals, participants' compliance with writing requirements, and demonstration of critical reflection. As detailed in Appendix D, inclusion criteria sought to achieve a balance of participants' positive and negative feedback from the journal's open-ended comments section (Table D3), and a balance of participants who agreed or disagreed with the four survey questions (Table D4). Lastly, inclusion criteria sought to achieve a balance of participants by demographic variables of gender, race, and age that were representative of the sampling frame (Table D1).

The purposive sample of 44 participants met all essential inclusion criteria for data analysis. As shown in Table 3, the following describes the sample distribution: 52% of the participants self-identified as female and 48% as male; and 47% of the participants self-identified as White, 43% as Asian, and 5% respectively as Latino or mixed race. Ages of the participants ranged from 18 to 41 years (M=25.02, SD=3.90). Appendix D, Table D1, illustrates demographic comparability of the sample with the sampling frame.

Table 3

Distribution of Sample Participants by Race, Ethnicity, and Gender

		Race/Ethnicity			
		Asian (n=19)	White (n=21)	Latino (n=2)	Mixed (n=2)
Gender	*n*	%	%	%	%
Female	23	63.16	38.10	100.00	50.00
Male	21	36.84	61.90	0.00	50.00

Note. Mixed = participants identified as mixed race/ethnicity. *n* = number of participants.

Defining participant groups expanded utilization of the constant comparative method for qualitative data analysis within and among groups. Thematic comparisons by group were conducted to also evaluate participants who shared the same experience journaling about specific population types. As shown in Appendix D, Table D2, participants' selected socio-cultural populations (SSP) clustered into five population types that served as the categories for assigning the 44 participants' group membership. The participant groups were as follows: Age (n=9), Race (n=10), Religion (n=11), Health (n=5), and SES (n=9). Across all variables considered relevant by the researcher for generating a heterogeneous sample, the purposive sample of 44 participants met the study's scientific integrity plan for consistency in answering the three research questions.

Self-awareness Fostered

The first research question asked, "Was self-awareness of a priori prejudicial beliefs fostered through reflective journaling, and if so, what was the nature of the dental students' self-awareness?" Data sources for this question were the following: all weekly SHR journals; Week 5 summary of participants' insights, their action plans, open-ended comments; and self-reported survey results.

Qualitative analysis. The researcher employed the constant comparative method to analyze individual participants' SHR journals, and to conduct comparisons within and among participant groups. As detailed in Appendix E, analysis of the SHR journals began with line-by-line open coding, followed by focused coding. All of the participants' illustrative quotations are presented verbatim, edited only for spelling and punctuation.

Five major themes emerged from the qualitative analysis to answer the research question on the nature of dental students' self-awareness of their prejudicial beliefs. The themes were labeled: (1) Initial Engagement, or awareness of the belief; (2) Immersion, or awareness of the sources of belief; (3) Explication, or awareness of the perspective of the belief; (4) Illumination, or insights from reflection; and (5) Creative Synthesis, or awareness of change efforts towards the belief.

Initial engagement. The first major theme, Initial Engagement, identified an issue of interest, or participants' awareness of their prejudicial beliefs. As shown in Figure 5, the Belief Statement instructed participants to choose a socio-cultural population as their subject, and identify their interpretation – or negative stereotype – of their SSP. It was this researcher's interpretation that participants who submitted a completed Belief Statement established a basic level of awareness of their SSPs and respective beliefs.

For whatever reasons, I believe _____ (insert a socio-cultural/ethnic/racial group) are _____ (insert your interpretation of this group).

I acknowledge I am not completely clear why I believe this way; furthermore, I realize this might influence my attitude towards, and communication with, these individuals, as well as my ability to provide equitable oral health care in my professional practice.

Figure 5. Belief Statement Instructions Directing Participants to Identify Their Own Prejudicial Beliefs About a Socio-Cultural Population

Belief Statements were qualitatively analyzed for the scope of participants' SSPs. Participants' SSPs clustered into five major categories and were labeled: Race, Religion, Health, Age, and Socioeconomic (SES). These SSP categories subsequently became the same categories used to assign membership to the study's five participant groups.

As shown in Appendix D, Table D2, the most common SSPs selected by participants for critical reflection were as follows: under the Race category, participants selected race-based SSPs such as Asians (n=14) and African Americans (n=8); under the Religion category, participants selected religion-based SSPs such as religious zealots (n=15) and Mormons (n=4); the Health category had the highest number of participants who selected SSPs with medical conditions such as HIV/AIDS (n=6), drug addicts (n=4), and the obese (n=4); under the Age category, participants selected age-based SSPs such

as teenagers (*n*=9) and the elderly (*n*=3); and under the SES category, participants selected socioeconomic-based SSPs such as the poor (*n*=5) and homeless (*n*=4).

Belief Statements were also qualitatively analyzed for negative stereotypes. When individual participants' Belief Statements (Figure 5) were analyzed as a whole statement – pairing SSPs with their respective negative stereotypes – the results reflected commonly-held prejudices. Two examples are "teenagers are disrespectful" and "poor people are lazy." However, when individual participants' negative stereotypes (e.g., disrespectful and lazy) were disassociated from their respective SSPs (e.g., teenagers and poor people), stereotypes clustered into two interesting categories.

The two negative stereotype categories emerged and were labeled: (1) Personal Accountability, and (2) Social Accountability. The Personal Accountability category comprised participants' negative beliefs towards those they perceived as not valuing themselves, not possessing self-respect, or lacking personal integrity. The Social Accountability category comprised participants' negative beliefs towards those they perceived as not valuing or respecting social norms.

Further exploration of these data found additional clustering within the two negative stereotype categories. Under the Personal Accountability category, two types of negative beliefs emerged and were labeled: Indolence and Ineptitude. Indolence comprised beliefs towards those they perceived as lacking individual initiative and personal effort. Illustrative quotations included the frequently cited phrase of "lazy and not hard-working" followed by "not willing to help themselves," and "lacking in self-discipline." Ineptitude comprised participants' prejudicial beliefs towards those they

perceived as intellectually or socially incompetent. Typical quotations included "uneducated," "stupid" and "boring."

Under the Social Accountability category, three types of negative stereotyping beliefs emerged and were labeled: Inconsideration, Intimidation, and Dogmatism. Inconsideration comprised participants' beliefs towards those they perceived as lacking regard for other people and their feelings. Inconsideration quotations included phrases such as "inconsiderate," "disrespectful," and "rude." Intimidation comprised participants' beliefs towards those they perceived as lacking regard for other people's sense of security. Illustrative phrases included "violent," "dangerous," "unstable," "aggressive," and "menacing." Dogmatism comprised participants' beliefs towards those they perceived as lacking respect for other people's ideologies. Illustrative quotations included participants' phrases such as "closed-minded," "judgmental," "intolerant," and the trifecta of dogmatism, "rigid, fanatical, ultraconservative."

When the 44 prejudicial beliefs were compared within and among the five participant groups, negative stereotypes were clustered as follows: beliefs about age-based SSPs clustered primarily under the category of Inconsideration; beliefs about race-based SSPs clustered under category of Intimidation; beliefs about those who are devoutly religious clustered almost exclusively under the category of Dogmatism; and beliefs about those with health conditions and socioeconomic disparity clustered under the category of Indolence. The category of Ineptitude did not represent a majority proportion with any of the five participant groups. See Appendix E, Table E1, for all negative stereotypes as identified by participant groups.

Immersion. The second major theme was Immersion. This theme was evidenced in several journals, most frequently in the first week's journal. As shown in Figure 6, instructions for the Week 1 SHR journal guided participants to immerse themselves in reflection by considering their prejudicial belief from multiple perspectives. What emerged from this analysis was participants' identification of the sources of their prejudicial beliefs.

This week: The focus is on S**elf-Awareness**. From the social/emotional perspective of emotional self-awareness, journal your personal attitudes (thoughts/emotions) and experiences with your selected socio-cultural group.

Tip: Reflect throughout the week before writing. It helps to jot down short notes each day to jog your memory. *Immerse* yourself in considering the circumstances that led you to believe as you do about your selected group. Describe your belief in detail. Is it based on personal experience or implicitly understood as part of your family/cultural narrative? Is this belief real, implied, or exaggerated? How and why?

Figure 6. Week 1 Journal Instructions Guiding Participants in Their Written Reflections

Exploration of participants' individual journals found 155 quotations were coded under the theme Immersion. Further focused coding and exploration within and among participant groups found three major sources that shaped awareness of the participants' prejudicial beliefs: (1) cultural norms, familial norms, or childhood upbringing; (2) personal experiences from adulthood; and, (3) experiences by proxy.

Cultural norms, familial norms, or childhood upbringing reflected prejudicial beliefs developed during the participants' formative years. One foreign-born participant's comment on disrespectful teenagers illustrated cultural norms she perceived as different from the norms of American families. "Sometimes, in our culture, if you talk back to the adults, it is the utmost disrespect. Although here in America, I see teens time and time again argue with their parents and form their own strong opinions."

Another participant discovered that her father's dogmatic personality had shaped her early prejudicial beliefs towards elders.

> My dad has always been a very opinionated man. . . . He's always had such strong convictions about everything, and if I were to try and present an opposing argument he would always find a way to make himself right. And if I proved him wrong, he would scold me for talking back to him. So I've learned to keep my mouth silent around him. I didn't even realize until now how much my father shapes how I feel towards the older generation. I've been battered down to submission so that I can't even form my own argument and have just been taught to listen and take it that I've become bitter towards the idea of the thought of causing change and having people realize that there can be a different side to everything.

Personal experiences from adulthood reflected prejudicial beliefs that arose after maturation. These sources included: work-based experiences; direct observation while in public places, e.g., public transit, schools, neighborhoods, grocery stores, coffee shops, the park; and situations with friends and family.

One participant reflected on his beliefs about indolent panhandlers. He noted the source of his prejudicial belief was borne from his adult experience – one that was separate from his family's beliefs.

> By the time I was half way through college, working part time to pay for my living expenses, while paying for my tuition with loans and scholarships, I found that I had completely lost sympathy for those able bodied individuals that were asking me for my money. I now walk by every single beggar with my head straight forward, avoiding eye contact and conversation because I have seen too many people sucked in by their stories, real or made up, and felt what I feel to be misguided pity. Granted, I will not tell anyone what to do with their own money, but I feel that this type of handout is perpetuating the mentality that these beggars have: I deserve money without work. This mentality I cannot relate to, and it sours me to a great extent when I am confronted with this attitude. I developed this sentiment over time with experience, not instilled in me by my family (who tends to be much more forgiving on this issue).

Experiences by proxy were those beliefs acquired indirectly and not through personal experience, but by which the participants were still influenced. These belief sources included: acquaintance's experiences, media and societal influences, political and historical sources, and fact-based or researched sources. An example of a prejudicial belief acquired through an acquaintance was illustrated by this next participant. He felt the relayed friend-of-a-friend story was sufficient to confirm his belief that immigrants are indolent.

> Also, a friend of mine was telling me how he knows a mailman who delivers five welfare checks to the same address every month and this home has multiple expensive cars parked outside. I am unsure whether this last example involves immigrants but I have put them in the same category. I feel like this is just a small sampling of the many people who come to this country and simply do nothing except take what others have worked so hard for.

Experiences by proxy included powerful and pervasive influence from the media. The following participant's belief about Muslims was influenced by the political news surrounding the events of 9/11.

> Looking back, I was scared, my dad was asked to go to Ground Zero at one point and help with the rescue efforts and clean up. I was glued to the tv, watching any coverage I could catch about who was responsible. Once I understood that it was the result of an extremist Muslim attack, I was in shock. Thousands of people were murdered in one fell swoop in the name of their God. All because of the American values that extremist Muslims see as wrong.

Explication. The third major theme on the nature of dental students' self-awareness of their prejudicial beliefs was Explication. This theme was evidenced in several journals, most frequently in Weeks 2 and 3. As shown in Figures 7 and 8, journal instructions guided participants to fully examine their prejudicial belief from the perspective of their SSP. What emerged from this analysis was participants' process used to understand and relate to their SSP. Examples of participants' explication were varied based on how they were able to connect and be considerate of their SSP.

This week: The focus is on **consideration of others**. From the social/emotional perspective of self-monitoring and empathy, *consider how and why members of your selected group may feel about you and your beliefs*.

Tip: *Immerse* yourself in understanding the attitudes/feelings/emotions of your selected group. If you had a personal experience with this group or a selected individual, consider the situation from their perspective. In other words, to the best of your ability, walk in their shoes.

Figure 7. Week 2 Journal Instructions Guiding Participants in Their Written Reflections

This week: The focus is on **connection with others**. From the social/emotional perspective of sociability (comfort with others) and intimacy (trust with others), journal your personal *feelings* regarding actual relationships or potential opportunities to interact with people from your selected group – whether it's professional or personal.

Tip: *Immerse* yourself in understanding your attitudes/feelings/emotions with regard to the ease in establishing, or the effort in maintaining a relationship. Disengage from your assumptions, and consider your willingness to connect by openly listening to, and genuinely communicating with, individuals from your selected group.

Figure 8. Week 3 Journal Instructions Guiding Participants in Their Written Reflections

Exploration of participants' individual journals found 207 quotations that were coded under the theme of Explication. Further focused coding and exploration within and among groups found distinct approaches were taken by the participants to explicate their prejudicial beliefs and relate to their SSP. Three approaches emerged from the data and were labeled: (1) Empathy, (2) Speculation, and (3) Ascription.

The category Empathy reflected participants' process to understand their SSP through an internalized, sympathetic, and compassionate perspective. Common among the quotations was participants' use of first person pronouns that indicated ownership of personal feelings. Typical phrases began with, "I know what it feels like," "I know because I have seen this with my own eyes," "I understand," and "I can remember."

Some participants empathized with their selected population based on comparable or shared experiences. As one participant stated, "I have walked in the shoes of the group I am talking about." Another participant expressed the importance of personal experience for developing empathy and additionally noted the potential impact of empathy on health inequity.

> I think it's pretty crazy how experience can change someone – either experiencing something first hand or at least attempting to make a genuine effort to understanding another point of view. Something like this enables one to empathize with others and will eventually address the disparities on the level of connection with others.

Several participants, however, acknowledged they had never considered the importance of walking in another's shoes until this assignment. In the following quotation, the participant shifted his reflection from an intrapersonal perspective to an interpersonal perspective – a skill he determined was worth developing.

> When I think about my belief statement my mind automatically runs to how it affects ME, what I think, how I react to a situation involving this group of people. It takes considerable effort to focus my concentration and mind on how the other people feel. And yet this is probably the most vital skill I can develop as a practitioner, the ability to put myself in the shoes of a group I don't understand well. If I can understand, empathize, and form a connection with people I find distasteful or uncomfortable, then anyone or any other group will be much easier.

The most frequent quotations from the Empathy category came from participants' recognition of their own culpability in the dynamics of prejudicial beliefs and behaviors. One participant took responsibility for his behavior towards the elderly and said, "It is quite possible that my interactions with them have been less than satisfactory because of my personal shortcomings rather than theirs." Another participant recognized that stereotyping religious conservatives as close-minded revealed that she, too, had adopted the same attitude.

> By me stereotyping religious groups as a whole, I am being closed minded myself. It is unfair of me to throw all religious people in a group without first getting to know them and hear their side of the story. In their mind they are right and I am the one who is wrong. It doesn't necessarily meant that they are bad people was it sounds like I am saying, its just that they come off as closed minded though from their point of view they are not closed minded, I am, which is reasonable.

The second category, Speculation, reflected participants' process for understanding their SSP through an assumptive perspective. Where the category of Empathy reflected an internalized process based on personal experiences, the Speculation category reflected a peripheral or superficial process for participants to understand their SSP based on conjecture of what it might be like to walk in their shoes.

Common among the Speculation quotations was participants' use of third person pronouns to describe presumptions about their SSPs. Typical phrases began with, "they must think," "they must feel," and "they would probably be." There were also first person phrases that qualified for the Speculation category such as, "I assume" and "I presume" as well as questioning statements that began with "I wonder."

Participants' quotations from the Speculation category conveyed a minimal level of personal experience with their SSP, as this participant noted, "In the case of my group, I haven't had many opportunities to interact with them and as such, my opinion and impressions of them has been formed out of things I have heard, read, or otherwise been exposed to." Another participant's quotation epitomized conjecture in his attempt to understand the life of a drug addict.

> Drug addicts would probably think that I don't understand them and where they are coming from mainly due to my lack of first-hand knowledge of drug use. I would suspect for them, not having walked in their exact shoes prevents me from understanding what it may feel like when you need something so badly that even if one wanted to stop doing it, the 'disease' / addiction prevents them from having the self-control to be able to discontinue such behavior. . . Drug users probably view me as ignorant (and I don't blame them) since my fear, dislike, and judgment in this situation stems from not understanding their world.

Many quotations in the Speculation category expressed participants' heartfelt consideration of their SSP's circumstances. Considerate speculative quotations included, "it might be hard for them" and "they must be scared of the idea of change as well." Several quotations included an emotional element such as, "they would be really angry," "I think they would be hurt," and "I think that they would be very defensive." Examination of these data compared considerate Speculation quotations with the similarly expressed Empathy quotations. Quotations in the Empathy category were universally preceded by sympathetic accounts of personal experience, while quotations in the Speculation category were deficient in this regard.

Overall, most participants' Speculation quotations reflected attempts to understand other cultures through conjecture – incomplete facts and guesswork – and as the next two quotations illustrate, this speculation was largely reflected through

stereotypic approaches. Speculating about the lifestyle of African American men, one participant justified why they might be violent.

> Some of them may have been influenced negatively and do not know how to live a different lifestyle. They are used to their lifestyle. I also think there are those who expect others to view them in this way. They want to be perceived as tough and powerful. They enjoy the fact that people may fear them. They do not want other people to view them as weak, so they want to be dominant in every situation.

Another participant attempted to explain his belief about the Asian culture through his conjecture about social conventions.

> My belief statement was that Asians are rude. . . It is very hard for me to step into their shoes and try to understand how it is to be them and feel that it is acceptable to not be considerate of others. I feel like everyone should treat others how they would like to be treated. But maybe this is why they act the way they do. They might not want people helping them or catering to them. They might have too much self-pride to expect others to hold open the door for them, or to say "excuse me" when someone is in their way. So because they don't want to be treated like this, it is possible that they choose to show the same lack of respect to others, believing that others want to be treated the same way.

The third category, Ascription, was defined as participants' process to understand others by attributing accountability and responsibility onto their SSP. If the category of Empathy reflected an internalized process, and Speculation a superficial process, then the category of Ascription reflected an externalized and disassociated process for how participants approached understanding their SSP. Participants' quotations that expressed Ascription reflected that the predicament was the SSP's to shoulder; moreover, participants were unable to relate to, or walk in the shoes of, their SSP.

Common among quotations in the Ascription category was participants' use of first person pronouns that described their emotions. Typical phrases included, "I get angry," followed by "it was sickening to me," "my frustration and hurt," and "it disgusts

me." Quotations typically centered on participants' difficulty or lack of desire to be understanding, considerate, and empathetic. One participant stated, "If I were to put myself into their shoes, I would be ashamed and disgusted with my own actions." Another participant's comment exemplified a lack of empathy towards the indigent when he said, "Call me cruel or inhumane, but in these instances, empathy is the last emotion evoked on my behalf." In general, ascriptive quotations clustered around assignment of culpability to others, the desire for others to change, and the assertion that stereotyping is a practical and justified practice.

Assigning culpability for the SSP's circumstances was a common strategy seen with Ascription, as demonstrated by this participant's quotation about panhandlers.

> I can without a doubt say that it is very difficult to identify personally with an individual choosing to panhandle or beg for money. Some may say that my ignorance to the situations and instances that have led to an individual living on the street, panhandling for sustenance, is appalling and totally self righteous. To these critics I say that my opposition to the panhandler career path is not born of ignorance, but of a belief that at some point we all make a decision in life that sets our path for our future.

Participants who expressed quotations from the Ascription category often wanted their SSP to change or be considerate in understanding the participant's own perspective. Despite knowing Christians well, this participant was resistant to understand them further and wished instead they would walk in her shoes.

> It may seem like I'm not even trying to walk in Christian shoes, but I really have. It just turns out that their shoes are uncomfortable, old fashioned, and don't match any of my clothes. . . I can never truly walk in their shoes because I never want to. I have done enough to know about their lives and have immersed myself enough to make my judgments; it will be a miracle if one day they would do the same about me.

Several participants asserted that stereotyping is a practical and justified practice. In the following quotation, the participant defended stereotypes as beneficial.

> There are reasons why stereotypes exist, so it would be foolish to be ignorant to such a realization. . . In general, stereotyping a group of people can have certain benefits. In doing so, one can make quick and efficient assessments of an individual based on their demographic.

However, the majority of participants' quotations that reflected Ascription as their process used to understand their SSPs, elected to rationalize the negative stereotype outlined in their Belief Statements. This perspective was often a result of a long family history of personal experiences or previous negative encounters. One participant illustrated generational prejudice and her own resistance to changing her belief with this quotation:

> I talk with my grandparents and I see their prejudices against Japanese people because of the post-World War II era that they grew up in. I wonder if in 20 years, my children will see my prejudices against Muslims and wonder how my life was changed in this post-9/11 era. . . . I feel like growing up, witnessing the tragedies of 9/11 and seeing so many of my friends and their families suffer the losses of their family members fighting overseas, it is hard for me to accept that there is civility in their religion. Thousands of people have died in the name of their mission and I have a hard time accepting that they feel their actions are justified.

This participant actively reflected and systematically considered his beliefs about teenagers, but ultimately his negative encounters convinced him to retain his perspective.

> Is it cliché to fear and prejudge the youths in my neighborhood? Yes. Is it unfair to judge kids who may actually be responsible, honest individuals? Yes. Do my perceptions regarding the youths likely perpetuate the situation further by having expectations dictate reality? Most likely, yes. All the downsides to my beliefs have occurred to me over the past few weeks while driving home through my neighborhood and reflecting on this journal assignment, but I see no net gain from changing or challenging my opinions on the matter. Experience over many years and not irrational fear has led me to hold onto my beliefs.

Illumination. The fourth major theme, Illumination, identified participants' awareness of insights from reflection. This theme was evidenced in several journals, most frequently in the Week 4 SHR journal (Figure 9).

This week: How do you feel about changing your belief statement? What social emotional competency would help you transform your beliefs about your selected group? What new thoughts and feelings would you need to consider for this week's focus on impacting others? From the social/emotional perspective of *initiative* and *inspiration*, journal your emotions/feelings/attitudes about influencing individuals from your selected group. Impact is the inclination and confidence to seek leadership opportunities, and the capacity to inspire others to change, e.g. treatment plan acceptance, or health behavior change in patients from your selected socio-cultural group.

Tip: *Incubation* is the time to step back from gathering new information, and to consider future professional or personal relationship opportunities with your selected group – such as patients you may see, or staffs you may hire. Let go of controlling the outcome to fit your previous assumptions, and reflect on the past four weeks allowing what you've discovered through journaling to sift, filter, morph, and recombine into new areas of self-awareness.

Figure 9. Week 4 Journal Instructions Guiding Participants in Their Written Reflections

To identify participants' insights as transformational or new as a result of critical reflection required analysis that was counter to the line-by-line analysis protocol. Each participant's journal was re-read from beginning to end. Analysis sought examples of critical reflection that led to quotations describing self-discovery, newfound realizations, or a heightened clarity in understanding the belief. The majority (68%) of participants demonstrated evidence of insightfulness. Participants' insightful phrases commonly began with, "I realize now," "This assignment has made me realize some things," "I discovered," and, "I've never really thought of it that way." This participant described the insight he gained from critical reflection.

> I believe that the reflection gave me more insight into some of the subconscious biases that I have, and emphasized the need to confront those beliefs. This reflection led me to realize my prejudices likely arose and how my personal experience had clearly refuted those biases.

Individual journal analysis and comparisons within and among participant groups found three distinct areas of insight: (1) new sources of beliefs, (2) a better understanding of the SSP and, (3) awareness of personal responsibility in sustaining the prejudice.

Through reflection, several participants discovered what they perceived as the actual source of their prejudicial belief. The most common sources were family members, the media, personal experiences, and past events. One participant discovered that her Vietnamese parents were the source of her prejudicial belief about Vietnamese girls. She reflected on how she herself might have unconsciously applied the prejudice.

> Through this journaling experience, I've realized the nature of my assumptions toward Vietnamese girls. My prejudices were unfounded. They stemmed not from my own experiences, but through the influence of my parents. . . Who knows, maybe my prejudices ruined our relationships? Perhaps they sensed some level of animosity?

A better understanding of the SSP was illustrated most commonly by participants' quotations that expressed a new perspective of their SSP (walking in their shoes), their SSP's lifestyle circumstances, personal struggles, and historical contexts. One participant reflected on her new perception of those who struggle with obesity.

> It must be so frustrating to know that you've already come that far yet people continue looking at you as though you're lazy and unconcerned. I've never really thought of it that way, but you'd have to be an extremely strong and disciplined person to stick with a time-intensive regimen of challenging exercise and limited diet while people continue to judge you.

Personal responsibility in the dynamic of prejudice was illustrated by participants' realization of their own culpability. Typical phrases in this category included "I have not been very willing," "I have been so judging," and "I probably haven't done a great job connecting with them." Participants often reported noticing that they were guilty of the

very trait of which they accused their SSP. Several participants who commented on religious zealots concluded they themselves were also culpable of being close-minded and judgmental. One participant discovered that his real issue with the elderly was his own social limitations. "After re-reading this, maybe it isn't that I'm uncomfortable with elderly people, but that I'm uncomfortable with being in new and different situations."

Insights based on a new awareness of personal responsibility touched on sensitive personal issues reflective of participants' own insecurities. One participant commented on fears about weight issues: "As I think about my relationship with my own body, I wonder if perhaps my views towards people with obesity reflect my own fears about gaining weight, or perhaps more specifically, of losing control over my weight." Another participant admitted difficulty relating to children due to several deficient areas.

> This is interesting because a big part of why I don't like children is that I do not know how to act around them. I do not know how to manage them. They seem like ticking time bombs of mayhem and chaos to me. . . There are a few reasons as to why I feel this way about children: 1) I don't have much experience dealing with children. 2) I have a fear of the unknown. 3) I have an inherent mistrust of children because I was bullied as a child.

Taking responsibility in the dynamic of prejudice was exemplified by participants who discovered that individuals from their SSP might observe their negative attitudes. One participant said, "People can perceive your attitude through body language and verbal cues such as intonation or phrasing. I could alienate people – I could be too condescending." Another participant noted the tangible impact of prejudicial beliefs.

> Although I think that I am good at hiding my true thoughts, I am positive that once in awhile it shows that I am extra cautious and suspicious of my selected group. I know that I would feel cheated and disrespected if an individual felt negatively toward me without even getting to know me first.

Creative synthesis. The fifth and final major theme for the first research question was Creative Synthesis. This theme was evidenced in several journals, most frequently in Week 4 (Figure 9) and Week 5 SHR journals (Figure 10). What emerged from this analysis were strategies through which participants might change prejudicial beliefs towards their SSPs.

Action Plan: write how you will further address your beliefs about, and communication with, your selected group particularly as it relates to providing care for patients, e.g., take cultural competency training, continue journaling.

Figure 10. Week 5 Journal Instructions Guiding Participants to Create an Action Plan

Exploration of individual journals found 418 quotations coded under Creative Synthesis. Further exploration within and among participant groups found three distinct areas that pertained to change efforts: (1) changing the Belief Statement, (2) willingness to engage in change efforts and, (3) strategies to engage in change efforts.

In Week 4 of the SHR journal (Figure 9), participants were asked how they felt about changing their Belief Statement. Twenty-two participants indicated they did not plan to change their beliefs; sixteen out of 44 participants indicated they did plan to change their Belief Statements.

Participants who did not want to change their Belief Statement provided a range of justifications including insurmountable differences with their selected populations and too many prejudice-confirming past experiences. Several participants were opposed to the prospect of change, as expressed by this participant who said, “Walking around with the self-consciousness of catering to a particular type of person, …no, sorry, I certainly am not going to engineer myself to impact one particular little facet of society.” This next participant felt strongly about being asked to even consider the possibility of change.

> How do I feel about changing my belief statement? Is that a serious question? I spent all this time with this belief statement and here you are asking me to change it. Are you serious? Блать!!! That's Russian for a swear word because I didn't want to offend anybody's sensibilities in English. Here's the thing, I don't think there is any reason to change my belief statement.

However, one participant reported that not changing his Belief Statement was appropriate, such that stereotyping low income individuals would help him be a better communicator with his future patients.

> After four weeks of journaling I have had the chance to explore my belief. . . However, after some further thought I think I wouldn't necessarily change my belief. As a practitioner it may be useful to identify people as being from low socioeconomic backgrounds to make adjustments to my communication style. This may help me build better relationships with this population.

Participants who changed their Belief Statements declared their intent with phrases such as, "I feel comfortable and open to challenging my belief statement," and "I feel very strongly that I would like to change my belief statement." This participant exemplified change efforts when she reflected on her prejudice of Vietnamese girls and examined how this will affect her future role as a dentist. After journaling, she decided it would be worthwhile to change her Belief Statement.

> To be honest, although I was always aware of my prejudice against Vietnamese girls, I have never felt the urge or desire to change my beliefs. I believed that my notions would not harm anyone and that no one would ever find out. Because I've still been able to interact with Vietnamese girls positively to a certain degree, I never thought it was much of a problem. However, this assignment has made me realize some things. Soon, I will become a healthcare provider. This means that I will be treating patients from all populations, groups, and backgrounds. . . I will be in a position to hire staff if I were to own my own establishment. I am not sure that with my current ideas that I would give equal opportunity to these individuals. . . For these reasons, I am very open to changing my Belief Statement.

Several participants willing to change their Belief Statement acknowledged that it would take time and effort. One participant commented on this challenge.

> In journaling, the thought kept in my head, "Do I really want to improve on this?" And I truly do. I want to be able to see the person, what's in their heart, not what's on the surface. This is an ongoing challenge, but a challenge willingly accepted. And if I am serious and understanding and open with this, then it will likely reflect appropriate feelings toward any and all future patients in my practice.

Willingness to engage in change efforts was split evenly between participants who were willing to change and those who expected their SSP to do the changing. A few participants admitted they wanted to change but did not know how. This next participant was concerned how to change when the belief was caused by more exposure to his SSP.

> The trouble is that aside from just thinking about it and maybe journaling like we are doing in this course, I don't really know how to change such a belief. Clearly just spending time with older individuals isn't going to suddenly correct my belief system because it was in spending time with them in the first place that led me to believe the way that I do.

Strategies to engage in change efforts comprised the majority of the Creative Synthesis quotations. Strategies grouped into two distinct approaches: intrapersonal approaches to changing beliefs and interpersonal approaches.

Intrapersonal change efforts defined participants' need or desire for self-improvement that focused entirely on change within the individual. There were two strategies: continued reflection and the development of social and emotional competency.

Reflection strategies centered on continued plans to journal or use introspection as avenues for addressing prejudicial beliefs. Eight participants were in favor of continued journaling and five planned to practice introspection. These participants felt that there were benefits to continue their efforts to uncover or address prejudices in their future

roles as dental professionals. One participant said, “I think it would be beneficial to me to journal about my positive experiences with patients so that I remember these lessons and have a record of ‘evidence’ supporting my new Belief Statement.” Another participant noted that continued journaling would help with his attitude towards patients.

> Often times I might make assumptions without thinking about why I feel that way or considering the consequences of how it affects my relationship with others or how they feel about my assumptions. By continuing to journal I can keep my thoughts and attitudes about groups of individuals in check and help to overcome barriers that I might create in truly building a quality relationship with patients and other teenagers in my community.

One participant acknowledged reflection helped provide insight into his prejudicial belief and expressed a continued need to be more aware of his biases.

> I realize now that in order to actually dislike something I need to understand it, to be able to form an educated opinion born of logic rather than misconception. This understanding allows me to attempt to move past my ignorance and treat all of the people I meet in the future as they deserve rather than prejudging based on some intrinsic aspect of their humanity they are unable to control.

Intrapersonal change efforts through social and emotional competency strategies centered on participants’ intent to increase self-awareness, to become less judgmental and more open-minded, and to attend to feelings or emotions.

The competency of Self-awareness is the first construct in the Social and Emotional Competency (SEC) model (Seal, et al., 2010); several participants’ SEC questionnaire results indicated that this competency was an area of need for further development. One participant commented, “I think that some more self-awareness and consideration will allow me to find the roots of my problems and be better off.”

Most participants noted that they needed to be less judgmental, more open-minded, and to avoid stereotyping and making assumptions. One participant said, “I am

quick to judge and must keep more of an open mind, especially as I deal with patients who come from many walks of life." Another participant used an artistic analogy regarding "care patients," those identified as having infectious diseases.

> From now on, I am letting go of my fear, negative opinion, assumptions, judgments and mostly "the old" myself-(using a canvas as analogy) a canvas full of judgmental and stereotyped words and paint-strokes that I drew when I thought about the people with infectious diseases. I believe that everyone deserves a chance and I am going to give myself to start with a brand-new canvas to paint my feelings on about the care patients.

Despite repeated journal prompts to draw out participants' affective traits of feelings and emotions, these characteristics were underrepresented throughout the journals. Nonetheless, reporting these data was considered integral to the overall analysis. Fourteen participants commented that the best change efforts would be to put their feelings aside. Typical comments included, "My action plan consists of gritting my teeth and keeping my beliefs to myself," and "In dentistry, I will have the chance to work with many different people, and I think that I need to learn how to put my personal feelings and judgments aside while I am treating patients."

Emotions were not specifically targeted for change; however, they were interconnected with other change effort plans that were reflected throughout the data. The most common emotion among the participants was worry. Notable quotations included potential impediments to change efforts such as, "I am worried that I will be unable to establish a good rapport with my older patients," "I am also anxious that my interactions will be unnatural and forced because I will be so conscious of confronting and overcoming my beliefs," and, "Professionally, I am a little bit nervous about being disrespectful to another cultural group just because of lack of awareness of the customs of

that group." One participant described his anxiety about holding onto prejudicial feelings against those from low socioeconomic populations.

> I know that at some point in my dental career, most likely as early as next year when I am in clinic, I will interact with Welfare and Medicare patients. I almost feel a little nervous having to interact with this group of people since I have not had much interaction with them thus far. I just hope that they will not be able to tell what I am thinking or about my assumptions about them when I do meet them. I feel bad for even stereotyping like this but this is what I really do believe, and the way that I have been brought up has led me to believe this stereotype.

Willingness to engage in change efforts through interpersonal approaches involved the interaction or relationship between two or more individuals. Quotations clustered around four strategies: development of social, emotional, and cultural competencies; direct interaction; communication; and professionalism.

Social and emotional competency development centered on the remaining constructs of the SEC model (Seal, et al., 2010). Several participants indicated the interpersonal competencies of Consideration, Connection, and Impact were identified areas of need based on their SEC questionnaire results. Many of the participants who identified Consideration for their change effort wanted to develop more empathy. This participant was considerate of how others might feel about his judgmental attitude.

> I really need to work on my consideration of other people, and keep in mind how that might feel if they were to hear me making undesirable judgments about them. My awareness has improved, and so I will now continue to work on consideration and open communication.

Most participants who selected Connection for their change effort suggested hands-on experience with patients to help improve their comfort level. Those that selected Impact were focused on leadership qualities.

Cultural competency change efforts were mixed in regard to how participants felt about the effectiveness of such training. One participant who chose immigrants as his SSP decided not to change his belief, but offered an alternative: "I will not do anything about this. I truly believe that what I think is correct but it will not affect the way I treat patients. I might even consider learning Spanish to help treat them in the clinic."

Interpersonal change efforts comprised most of the identified strategies. Interpersonal strategies included plans to have past personal experiences guide future interactions with their SSP, and plans to seek direct experiences with their SSP through community outreach and volunteerism. Five participants took the initiative during the assignment to engage fellow classmates that belonged to their SSP. This next participant presented a plan to befriend members of her SSP – her Muslim classmates.

> I plan on getting to know some of my Muslim classmates and understand their religious beliefs and what we as students and professionals have in common. Asking questions, understanding their feelings about what they value in their lives and in their relationships will help me understand and accept their values.

Seven participants elected to defer change efforts until they began to see patients for the first time in their second year clinic rotations. One participant stated that treating patients would reinforce his new non-prejudicial beliefs. Another participant speculated on the social and emotional competency of Connection when treating the homeless.

> Now that I am a dental student and will start to treat patients at the start of my second year, I feel that I will be given the chance to interact more directly with people of low socioeconomic backgrounds. I am not completely sure how a relationship with a financially or socially disadvantaged person would work out in the clinic. . . . In any case, I think that all of these postulations are not particularly helpful because I am not in clinic yet and have not had the opportunity to interact with people from low socioeconomic backgrounds.

Six participants anticipated facing particular challenges in their future interactions with their SSP. One participant revealed his challenge and his solution for how he planned to address his prejudicial belief when providing dental care for the elderly.

> I really think the best thing I can do is just get some old people in my chair as patients and practice conversing with them and try to make myself listen to what they have to say, hopefully I will learn to enjoy it.

Interpersonal change efforts directed toward communication included: participants' intention to talk with members of their selected group; avoidance of discussion on sensitive topics, or dismiss patients from their practice if the chasm becomes too great; to learn more about the SSP's culture; to find common ground, compromise, and work together; and finally, simply to listen.

Numerous participants described communication as instrumental in the development of patient rapport, as this participant suggested:

> Seeing that good communication is probably the most important aspect of running a dental business, I'll have to get more comfortable with ethnicities and cultures of all backgrounds. Especially in dealing with my chosen ethnic group, I'll have to be a lot more mindful and to retract my previous comments about them as well as hold in my emotions, not to mention exuberate confidence but not seem cocky or overbearing. I'll have to carefully listen actively, integratively, and empathetically.

Lastly, interpersonal change efforts through professionalism included: participants' strategies to develop a more confident attitude; to set a good example or mentor others; to treat others equally, fairly, respectfully; to treat others as individuals, and not as a stereotyped group; and to ask other professionals or colleagues for guidance.

This participant's change efforts addressed the role of leadership, the avoidance of discussion on sensitive topics, and the need to find common ground:

> But the more I think about it, the more I believe that any effective leader must be able to work with others with whom they have serious philosophical differences. Maybe it means steering clear of certain topics. I think it is better, though, to think that there could be a conversation about anything, with the purpose of learning something about how others see the world, rather than looking for differences of opinion. In practice, this means acknowledging the different point of view without belittling it, asking sincere rather than confrontational questions, and focusing on common ground rather than differences (though there is nothing wrong with acknowledging them).

In this next quotation, the participant reflected on her belief about obese individuals and how to set an example as a future dental professional.

> While I don't feel that it's my place to try and change other people's values of lifestyle habits, I would certainly try to have a positive impact on other's health whenever possible. For example, in a future dental practice I can try to create as healthy a lifestyle as possible for my employees by having healthy snacks available and perhaps building time into the day for short stretching and/or walk breaks. These kinds of small steps could help from both an ergonomics perspective but also help people find time to focus on their health.

Several participants commented on the professional duty of treating everyone the same, such as this participant's plan to address inequity:

> As a professional of any type, whether it is in the field of health care or anything else, there are certain duties that one must perform. . . . One of these standards is that one must endeavor to treat all people, regardless of faith, race, gender or any other identity, as equals. Admirable conduct and holding oneself to higher standards of behavior is one very important thing that sets a professional apart from those members of society who choose to pursue other paths; it is expected by all who interact with said professional that he or she act in such a way.

Numerous participants commented on their professors being a valuable resource for professional collaboration and ongoing learning.

> The advantage of my training right now is that I have a collaborative environment to work in and if any issues arise that conflict with my beliefs, I will have a large amount of people to consult with to learn how to properly address such issues and work on modifying any personal traits that I may have that are leading directly to the problem.

Quantitative analysis. The first research question asked participants if self-awareness of a priori prejudicial beliefs was fostered through critical reflection. Statistical analysis to answer this research question was based on two survey questions.

The first survey question asked if participants agreed or disagreed with this statement: "Self-awareness of my beliefs was fostered (positive or negative) through reflective journaling." A majority of individual participants (91%) agreed awareness of their beliefs was fostered through reflective journaling; these results were significant. As shown in Table 4, there were more females (*n*=21) and Whites (*n*=20) who agreed self-awareness was fostered through reflective journaling. Mean age for those individuals who agreed was 1.1 years older (*M*=25.1) compared to those who disagreed with the survey question.

Table 4

Comparison of Individual Participants Who Agreed or Disagreed That Self-Awareness was Fostered through Reflective Journaling

		Gender		Race/Ethnicity			
		Female (*n* = 23)	Male (*n* = 21)	Asian (*n* = 19)	White (*n* = 21)	Latino (*n* = 2)	Mixed (*n* = 2)
Response	*n*	%	%	%	%	%	%
Agreed	40*	91.30	90.48	84.21	95.24	100.00	100.00
Disagreed	4	8.70	9.52	15.79	4.76	0.00	0.00
Total	44						

Note. Mixed = participants identified as mixed race/ethnicity.
Response = participants' answer to survey question. *n* = number of participants.
* = $p<0.001$, two tailed Fisher's exact test, 95% confidence interval (CI) [78.33, 97.47], H_o: $p=0.5$

As shown in Table 5, of the participant groups the results for those who agreed self-awareness was fostered, proportions were unanimous within the Race (100%) and Religion groups (100%). When compared within participant groups for those who agreed, results were significant for the Race, Religion, and Age groups.

Table 5

Comparison of Participant Groups Who Agreed or Disagreed That Self-Awareness was Fostered through Reflective Journaling

	Participant Groups				
	Age (n = 9)	Race (n = 10)	Religion (n = 11)	Health (n = 5)	SES (n = 7)
Response	%	%	%	%	%
Agreed	88.89[b]	100.00[a]	100.00[a]	80.00	77.78
Disagreed	11.11	0.00	0.00	20.00	22.22

Note. Response = response to survey question. n = number of participants.
[a] = $p < 0.001$, two tailed Fisher's Exact test, Ho: p=0.5
[b] = $p = 0.039$, two tailed Fisher's Exact test, Ho: p=0.5

The second survey question asked participants if they agreed or disagreed with this statement: "I had a positive change in attitude towards my selected group after reflective journaling." A majority of individual participants (52%) agreed they had a positive change in attitude; these results were not significant. As shown in Table 6, there were more females (n=13) and Whites (n=11) who agreed their attitude changed. Mean age for those who agreed was 2.5 years older (M=26.2) compared to those who disagreed with the survey question.

Table 6

Comparison of Individual Participants Who Agreed or Disagreed They Had a Positive Attitude Change after Reflective Journaling

		Gender		Race/Ethnicity			
		Female (*n*=23)	Male (*n*=21)	Asian (*n*=19)	White (*n*=21)	Latino (*n*=2)	Mixed (*n*=2)
Response	*n*	%	%	%	%	%	%
Agreed	23	56.52	47.62	47.37	52.38	100.00	50.00
Disagreed	21	43.48	52.38	52.63	47.62	0.00	50.00
Total	44						

Note. Mixed = participants identified as mixed race/ethnicity.
Response = answer to survey question. *n* = number of participants.

As shown in Table 7, of the participant groups the results for those who agreed attitude changed, proportions were highest within the Health (80%) and Race groups (70%). Results for within group comparisons for those who agreed attitude changed were not significant.

Table 7

Comparison of Participant Groups Who Agreed or Disagreed They Had a Positive Attitude Change after Reflective Journaling

	Participant Groups				
	Age (*n* = 9)	Race (*n* = 10)	Religion (*n* = 11)	Health (*n* = 5)	SES (*n* = 7)
Response	%	%	%	%	%
Agreed	44.44	70.00	54.55	80.00	22.22
Disagreed	55.56	30.00	45.45	20.00	77.78

Note. Response = response to survey question. *n* = number of participants.

Personal Value

The second research question asked, "Do dental students experience personal value from preclinical critical reflection of prejudicial beliefs, and if so, how did dental students describe personal value?" Data sources for this question were the following: all weekly SHR journals; Week 5 summary of participants' insights, action plan, open-ended comments; and survey results. The section that follows answers this research question through qualitative analysis, followed by quantitative analysis.

Qualitative analysis. The researcher employed the constant comparative method to analyze individual participants' SHR journals, and to conduct comparisons within and among the five participant groups. All of the participants' illustrative quotations are presented verbatim, edited only for spelling and punctuation.

Personal value was defined as participants' individual appraisal of the reflective journaling assignment. Further exploration within and among the five participant groups found three categories of personal value: (1) value based on the process of reflection, (2) value based on self-discovery through reflection, and (3) value based on changing attitudes and opinions through reflection.

Process of reflection. The process of reflection was defined as participants' comments that described how they viewed and valued critical reflection as a process for exploring prejudicial beliefs. Participants' quotations clustered into three areas: opinions regarding the overall value of critical reflection, usefulness of reflection for exploring beliefs, and the effect of critical reflection on existing beliefs.

Most participants' comments were positive regarding the value of critical reflection for exploring prejudicial beliefs. Positive value was expressed by comments such as, "Overall, I loved the journaling experience!" and "this entire journaling process has been extremely helpful." However, a few participants did not value reflective journaling and expressed negative comments such as, "I did not like this assignment. I don't think that it was of any significant value for me," and "I found myself getting frustrated."

Participants' comments on the usefulness of critical reflection were varied. Quotations about the usefulness of reflection focused most frequently on two aspects of the process: the realization they would not have considered active reflection if it were not for this assignment and that reflection increased their self-awareness. Several participants agreed they had never given their prejudicial beliefs prior thought, and that their belief "has largely been an unconsidered and unchallenged view." This participant concurred on the matter:

> If you had asked me what I felt about my predispositions even before this journaling assignment, I probably would have admitted that my feelings might not be completely realistic or non-discriminatory, but likely gone about my business and forgotten the entire thing.

The most common quotations on the usefulness of critical reflection focused most commonly on participants' increased self-awareness. Several participants shared that journaling "forces you to look at your prejudices and confront why you have them." Other participants commented that reflection through journaling was beneficial in that it "increased awareness of thoughts and ideas," and "helped us discover things we didn't know about ourselves."

For participants who found reflective journaling not useful, one participant commented, "In my experience, I found these assignments to be difficult in getting the desired outcome." Another participant expressed "irritation" in being required to explore her feelings "that really don't merit this much exploration."

Several participants commented on how the weekly process of critical reflection reinforced prejudicial beliefs about their SSP. One participant commented on this reinforcement along with several other process-related concerns about reflective journaling:

> In fact, to be honest, I think that this series of assignment has actually made me feel even more negatively towards them. I think I can come up with several reasons for this. First, this assignment. Along with all the other things we have to do in dental school, as if we are not busy enough, I have to spend time doing this writing assignment. Not only do I have to spend time thinking about it, I have to spend time writing a full page? . . . Wasting this much time coming up with is load of bull. The next reason that I actually feel even more negative towards my selected group is that this assignment has had me enumerate my dislikes towards them like no other. For weeks on end, I have written about how much I don't like them and now I realize that there are quite a few more reasons for not liking them. Before this assignment, I could come up with a few reasons but now I have so many reasons written down it makes me realize that there are quite a few reasons.

Self-discovery through reflection. Self-discovery through reflection was defined as participants' learning process through reflection. As one participant said, "Where someone could have simply told me the linkage of why we are doing what we are doing, it is better when self-realized." Participants' quotations clustered into three areas: discovery of new knowledge or awareness of their belief, the need for new intrapersonal skills, and discovery of how participants can take what they have learned to benefit future relationships.

Participants identified new knowledge, awareness, or perspective of their beliefs. One participant commented on how she had an increased awareness of the stereotypes and biases associated with her SSP: "I believe that reflection gave me more insight into some of the subconscious biases that I have, and emphasized the need to confront those beliefs." Another participant noted the benefits of journaling about her SSP: "Through writing numerous journals, I was able to look at what I write and what I think of my group in a very different and clear view."

Participants expressed value in identifying the need for new skills, such as awareness of assumptions. One participant commented on the value of taking time to assess assumptions: "There are a lot of assumptions I brought to the discussion that aren't necessarily accurate, and taking time to assess these assumptions was valuable."

Several participants found reflection was valuable in preparing them for future relationships with members of their SSP. This participant commented on this value:

> This assignment has been helpful in trying harder to build relationships with individuals whom I never thought I could. It has also allowed me to understand and develop a sense of admiration for the hard work members of this group put into their everyday lives.

Attitudes changed from reflection. This category was defined as participants' comments that described increased awareness that led to an attitude change towards their prejudicial beliefs. Participants' quotations clustered into two areas: those participants who did not experience a change in attitude or opinion and those participants who did.

Participants who did not experience a change in attitude commented on how journaling would not change how they viewed their SSP, and that the process was not the preferred medium for changing their opinions. One participant commented, "Overall I don't feel that writing about my thoughts and feelings will or has any effect on changing my beliefs." This participant questioned the validity of challenging her assumptions.

> I think the question above is assuming that there is something taboo about our belief. In fact, I think it is presupposing that all assumptions are bad, and that they should be adjusted, modified, or changed in some way so that they are no longer assumptions.

Several participants commented on a positive change in feelings and attitudes as a result of journaling and some were surprised that change happened so quickly. One participant took the added step of reaching out to engage someone from his SSP and experienced a positive outcome regarding his attitude towards Mormons.

> In all honesty, I don't feel as though my Belief Statement has changed much. My belief statement still encompasses the overall picture I have in my head concerning the Mormon group, but I will say that my feelings and attitudes have changed. . . .I can say though that doing this assignment and actually making a conscious effort to develop relationships with members of this group has been a good experience for me. It doesn't change my Belief Statement, but it changes my overall feeling towards what these people are about, and what they are like from a personal standpoint.

Quantitative analysis. The second research question asked if participants experienced personal value from critical reflection. Statistical analysis was based on one survey question.

The survey question asked if participants agreed or disagreed with this statement: "I experienced personal value in fostering self-awareness of my assumptions/beliefs." A majority of individual participants (64%) agreed they experienced personal value from fostering self-awareness of their beliefs; these results were not significant. As shown in Table 8, for those who agreed with the survey question, proportions were equal for females (*n*=14) and males (*n*=14), and proportion was highest for Asians (*n*=15). Mean age for those who agreed was 0.2 years older (*M*=25.1) compared to those who disagreed they experienced personal value.

Table 8

Comparison of Individual Participants Who Agreed or Disagreed They Experienced Personal Value in Fostering Self-Awareness of Beliefs

		Gender		Race/ethnicity			
		Female (*n* = 23)	Male (*n* = 21)	Asian (*n* = 19)	White (*n* = 21)	Latino (*n* = 2)	Mixed (*n* = 2)
Response	*n*	%	%	%	%	%	%
Agreed	28*	60.87	66.66	78.95	47.62	50.00	100.00
Disagreed	16	39.13	33.33	21.05	52.38	50.00	0.00
Total	44						

Note. Mixed = participants identified as mixed race/ethnicity.
Response = answer to survey question. *n* = number of participants.
* = 95% CI [47.77, 77.59], Ho: *p*=0.5

As shown in Table 9, of the five participant groups, those who agreed they experienced personal value was highest within the Religion (73%) and Race groups (70%). Results for within group comparisons for those who agreed they experienced personal value was not significant.

Table 9

Comparison of Participant Groups Who Agreed or Disagreed They Experienced Personal Value in Fostering Self-Awareness of Beliefs

	Participant Groups				
	Age (n = 9)	Race (n = 10)	Religion (n = 11)	Health (n = 5)	SES (n = 7)
Response	%	%	%	%	%
Agreed	44.44	70.00	72.73	60.00	66.67
Disagreed	55.56	30.00	27.27	40.00	33.33

Note. Response = response to survey question. n = number of participants.

Curriculum Insights

The third and final research question asked, "What intrinsic pedagogical insights can be drawn from dental students' critical reflective journaling on their prejudicial beliefs that could inform the preclinical curriculum?" Data sources for this question were the following: all weekly SHR journals; Week 5 summary of participants' insights, action plan, open-ended comments; and survey results. The section that follows answered this research question through qualitative analysis, followed by quantitative analysis.

Qualitative analysis. The researcher employed the constant comparative method to analyze individual participants' SHR journals, and to conduct comparisons within and among the five participant groups. All of the participants' illustrative quotations are presented verbatim, and edited only for spelling and punctuation.

Curriculum insights were defined as participants' comments regarding the inclusion and process of critical reflection in the preclinical curriculum. Further exploration within and among participant groups found four areas of insight: (1) participants' perceptions of the purpose of critical reflection, (2) assignment process insights, (3) SHR journal insights, and (4) participants' suggestions for other activities as an alternative or supplement to critical reflection.

Purpose of critical reflection. The purpose of the assignment was to engage dental students in critical reflection of their own prejudicial beliefs, stimulate awareness of the potential impact of those beliefs, and encourage action to further explore and modify a priori prejudice in the interest of effective professional practice. Further analysis of the value-coded quotations, both personal and pedagogical, suggested there was variability in participants' perceptions about the overall purpose of critical reflection in the preclinical curriculum. Insights clustered into two areas: the purpose of reflection and self-directed learning.

The majority of participants' journals suggested there was evidence that the purpose of preclinical critical reflection was achieved – self-awareness of prejudicial beliefs towards their SSPs increased. The purpose of reflection as an educational method was considered by several participants to be an "interesting exercise." One participant said, "Great writing experience. Don't get to do much writing in dental school and it was nice to write and reflect." However, the majority of insights in this category noted that the purpose of critical reflection was "good in theory" but not in the reality of a dental school curriculum. A few participants indicated critical reflection reinforced their prejudicial beliefs.

Critical reflection used for the purpose of affecting personal change efforts also saw variability among the participants. Many participants' comments indicated critical reflection changed their beliefs and attitudes; conversely, several participants commented their beliefs or attitudes did not change. One participant said, "It is not through these exercises that I will consider changing my belief since I believe that it is a well rooted

belief that has been developed through my lifetime of experiences." However, many participants appeared to have interpreted the SHR instructions not as a directive to change, but as an opportunity to reflect on the legitimacy of their a priori prejudicial beliefs. One participant's comments illustrated this difference:

> I would say that journaling about this topic has allowed me not to necessarily change how I feel, but come to a better understanding of why I feel the way I do. I think that self reflection is a positive method of searching ones own beliefs and ensuring that emotions and sentiment are based on rational thoughts and not bias or prejudice.

The purpose of critical reflection as a self-directed learning strategy saw variability among the participants. For many participants, their journals indicated that they learned something about themselves in the process and considered reflection a valuable part of their preclinical preparation. One participant noted reflection increased consideration towards his SSP: "We need to remember that we treat patients and not teeth. It is our obligation to make them feel likewise." For other participants, their journals were indicative of disappointment that they did not learn anything new. One participant noted, "I didn't learn anything about myself that I didn't already know and I didn't learn anything about the group I selected. I would not recommend continuing critical reflections as a means of trying to educate students about different social groups."

Some participants' comments indicated they were comfortable with critical reflection as a self-directed learning strategy, particularly one that emphasized the affective domain. However, numerous participants commented on critical reflection as if it were intended to be a stand-alone activity, instead of integrated into a comprehensive curriculum. For example, several participants suggested that cultural competence is best

learned on the patient. This participant's comments indicated he did not benefit from preclinical preparation: "I think cultural competency as a class/lecture is good in theory but unfortunately the best way to learn about interacting with others is through first-hand experience in an uncontrolled environment."

Process insights. Process insights were defined as comments made by participants on the overall strategy of critical reflection in the preclinical curriculum. Insights clustered in three areas: time involvement, confidentiality, and relevance to the practice of dentistry.

Several participants noted there was insufficient time to generate plausible Belief Statements and to follow each week's directions. One participant suggested, "I think that the deadlines for this assignment were a little stressful. If there were emailed reminders or more discussions in class that these assignments would have been more reflective instead of rushed." Several other participants commented that journaling was time intensive and the process redundant. Participants that expressed the most emotion-laden comments regarding the time factor were those that pertained to having an academic schedule that was too demanding. One participant illustrated this perception that this study created extra work for the students.

> I am who I am. Right now I'm a stressed out and frustrated "who I am," and perhaps the reader can tell I'm finding emotional release by venting in these damnable essays we're forced to write. As for the designer of the study, it's nice that you care about whatever you care about that motivates you to gather this data, because you're trying discover and represent the truth, but I'll tell you what-- you sure have made a mass of over-worked people irritated and angry at all the extra crap they have to do.

Process insights included the issue of anonymity. One participant said, "I think many students would have chosen a different group if they grasped the amount of time to be spent on the topic and if they truly believed the assignment would be anonymous." Another participant commented on the potentially incriminating nature of submitting sensitive written material: "Anybody who does hold truly racist beliefs would hold them back professionally is smart enough not to state them openly."

Relevance of the assignment to the practice of dentistry was a topic raised by several participants. The assignment was presented in the Integrated Clinical Sciences course as part of their preparation for clinical patient care. One participant recommended that the activity be made more relevant to the practice of dentistry:

> Where I think it is lacking is the fact that there is little initial prompt to relating this exercise to our dental careers. Although it is apparent why it is important to understand one's beliefs, I think that this exercise could be greatly improved if it was explicitly directed towards our future careers as dentists.

Several participants disagreed and commented that the SHR assignment was well designed to prepare students for professional practice with a diversity of patient populations. One participant said, "Looking back on these journal entries, I feel this was a great exercise to prepare students for clinic." This participant offered insights into informing students of the relevance of journaling:

> Looking back on these journal entries, I feel this was a great exercise to prepare students for clinic. In clinic, students are faced with an enormous amount of patients, each with their own background. Therefore, this reflection exercise was a good way for students to reevaluate their own beliefs and preconceptions about certain types of people in a positive direction. Ultimately, I found this experience helpful and enlightening to some extent.

SHR journal insights. SHR journal insights were defined as comments made by participants as to the overall design of the Serialized Heuristic Reflection journal. Insights focused on three areas: the Belief Statement, selection of a suitable socio-cultural population (SSP), and the SHR instructions that guided journal reflections.

Belief Statement insights focused on participants' comments regarding the importance of a making a good SSP selection. One student responded that he had difficulty selecting a SSP and respective prejudicial belief.

> I also had some trouble picking a Belief Statement because I was aware that you can come up with a lot of general stereotypical statement about populations of people that you can sort of justify but aren't really that significant.

Another student commented on the importance of selecting the Belief Statement from the perspective of being thoughtful as to population selection.

> I believe that it would be useful to stress to the students that they will be addressing their Belief Statement in the next four responses and that they should therefore very carefully reflect on what they would like to write.

Participants' insights that pertained to the SRH journal were focused on the design and instructions of the templates. One participant elected not to use the instructions as a guide. Another participant felt there were too many instructions, and yet another participant was confused by the directions. One participant offered an insight that there were too many prompts provided for each week's focus: "I mentioned this in the last journal, but I was confused by the questions. There were so many each week that I did not understand which to answer."

Alternative ideas. The final area of curricular insights was based on participants' suggestions for other ideas in addition to, or in lieu of, reflective journaling for addressing prejudicial beliefs. Three alternative ideas emerged from the data: move the assignment to another quarter in the academic calendar, consider the value of videos for training, and consider patient simulations as an option for cultural competency training.

The placement of the assignment in the Autumn quarter was coordinated with the class load in mind; however, one student suggested placing the assignment in the Spring quarter. "If this assignment was maybe given later in our dental school career, perhaps in 4th quarter when the class load lessens it would have had a greater impact on my class."

Of the coordinated activities included in the ICS-I curriculum, one involved a student-made post-9/11 video, "What Makes you so Different." One participant felt the video was "more effective in spreading the message about cultural awareness." Lastly, one student suggested simulations in the clinic as a better method for working with diverse patients.

> I feel like this is not the most effective way as to how to provide patient care down in clinic. Maybe a better way is to put students in simulated situations where they would experience common beliefs about certain groups.

Quantitative analysis. The third and final research question asked what pedagogical insights could be drawn from critical reflection. Statistical analysis was based on one survey question.

The survey question asked if participants agreed or disagreed with this statement: "I believe there is educational value in students fostering self-awareness of beliefs prior to providing clinical care." A majority of individual participants (89%) agreed there is educational value in students fostering self-awareness of beliefs; these results were significant. As shown in Table 10, there were more females (*n*=21) and Asians (*n*=19) who agreed there is educational value. Mean age for those individuals who agreed was 0.9 years older (*M*=25.1) compared to those who disagreed.

Table 10

Comparison of Individual Participants Who Agreed or Disagreed There is Educational Value in Fostering Self-Awareness of Beliefs

		Gender		Race/Ethnicity			
		Female (*n* = 23)	Male (*n* = 21)	Asian (*n* = 19)	White (*n* = 21)	Latino (*n* = 2)	Mixed (*n* = 2)
Response	*n*	%	%	%	%	%	%
Agreed	39*	86.96	90.48	100.00	80.95	50.00	100.00
Disagreed	5	13.04	9.52	0.00	19.05	50.00	0.00
Total	44						

Note. Mixed = mixed race/ethnicity. *n* = number of participants. *M* = mean age.
* = p < 0.001, two tailed Fisher's Exact test, 95% CI [75.44, 96.21], Ho: *p*=0.5

As shown in Table 11, of the five participant groups, those that agreed there is educational value was highest within the SES (100%) and Religion groups (90%). When compared within participant groups for those that agreed versus disagreed, these results were significant for Religion and SES.

Table 11

Comparison of Participant Groups Who Agreed or Disagreed There is Educational Value in Fostering Self-Awareness of Beliefs

	Participant Groups				
	Age (n = 9)	Race (n = 10)	Religion (n = 11)	Health (n = 5)	SES (n = 7)
Response	%	%	%	%	%
Agree	88.89	80.00	90.90[a]	80.00	100.00[b]
Disagree	11.11	20.00	9.10	20.00	0.00

Note. Response = response to survey question. n = number of participants.
[a] = p = 0.012, two-tailed, Fisher's Exact test, Ho: p=0.5
[b] = p = 0.004, two tailed Fisher's Exact test, Ho: p=0.5

Summary

This study utilized an educational methodology of critical reflective journaling as a means to foster dental students' self-awareness of their a priori prejudicial beliefs. The aim of this research was to determine if students' assessment of the legitimacy of their beliefs would have value in a preclinical curriculum. The broader goal would be that increased awareness would reduce the impact of provider attitudes as a barrier to oral health care.

To answer the three research questions, this study explored 44 participants' reflection journals on their prejudicial beliefs towards a socio-cultural population (SSP) of their choosing. Based on the following, results suggest there is value in preclinical critical reflection. The majority of participants agreed self-awareness was fostered and most experienced an attitude change towards their SSPs. The majority of participants perceived personal and pedagogical value from critical reflection. Themes were identified to explain the nature of self-awareness of prejudicial beliefs. Insights were identified about the reflection assignment that could inform the preclinical curriculum. What follows summarizes these results.

A significant majority of surveyed participants agreed self-awareness of their prejudicial beliefs was fostered through critical reflection. Qualitative analysis confirmed these results. An example included participants who recognized their own personal responsibility in the dynamic of prejudice. This insight and others were considered evidence of new awareness that led to increased accuracy of the legitimacy and perspective of the participants' prejudicial beliefs.

In addition to increased self-awareness, a majority of surveyed participants also agreed their attitude towards their SSP had changed as a result of critical reflection. Qualitative analysis disconfirmed this finding. When participants' journals were analyzed for evidence of attitude change, more participants indicated they did not plan to revise their Belief Statement. Several participants planned to put their personal feelings aside and others planned deferment of change efforts until clinical rotation. Despite this finding, a majority of participants did indicate various long range plans for future change efforts aimed at improving their attitude and relationships with their SSPs.

Qualitative analysis also identified five themes that indicated the nature of self-awareness of prejudicial beliefs. As shown in Figure 11, each theme characterized various aspects of participants' awareness, that when viewed together, represented a holistic perspective of self-awareness of the prejudicial belief. Within this analysis, the study provided a greater level of understanding regarding the scope of population types selected by the participants, the range of stereotypical beliefs, the variety of participants' belief sources, and the process by which participants attempted to relate to their SSPs.

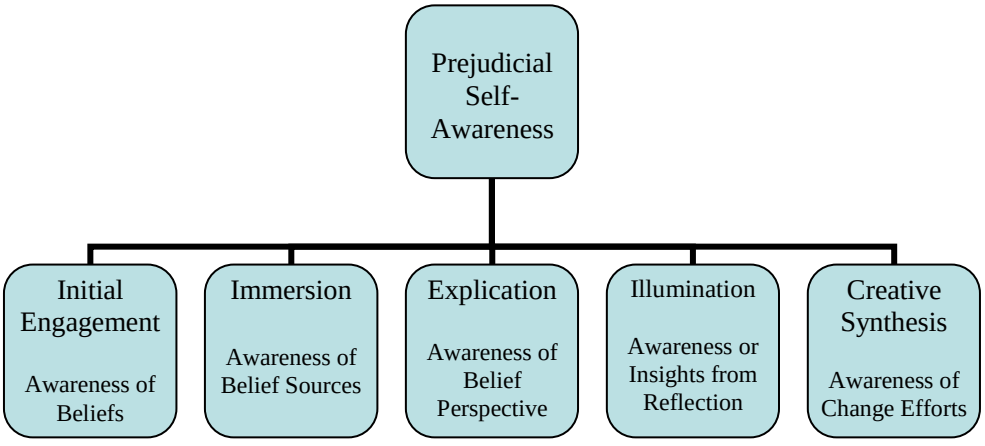

Figure 11**.** Scheme Depicting the Five Themes that Characterized the Nature of Participants' Prejudicial Self-awareness

The value of critical reflection was defined in two ways: personal and educational. A majority of surveyed participants agreed they perceived personal value from critical reflection. Qualitative analysis confirmed this finding, but comments from the participants were mixed. Many participants commented on reflection as a valuable tool for discovery of unconscious beliefs; conversely, several participants commented that critical reflection reinforced their beliefs.

A significant majority of surveyed participants agreed there was educational value with preclinical critical reflection. Overall qualitative results from this study identified numerous indications of value. Of particular note, participants experienced increased awareness of the source of their prejudicial beliefs, most participants experienced insights from reflection, and the potential impact of participants' attitudes on patient-provider communication was acknowledged.

Lastly, results from this study identified insights about the reflection assignment that could inform the preclinical curriculum. There was variability in participants' perceptions regarding the purpose of critical reflection. Several suggestions were offered by the participants such as improvement of the process of critical reflection, clarification of the design of the Serialized Heuristic Reflection (SHR) templates, and suggestions for additional activities in lieu of, or in addition to, critical reflection. As for the value of critical reflection in a preclinical curriculum, several participants considered it relevant to the practice of dentistry; moreover, participants noted the assignment was well designed to prepare students for professional practice with a diversity of patient populations.

Chapter 5

Despite advances in oral health care, America's marginalized populations continue to experience greater oral health inequities and deteriorating health outcomes. Research has pointed to provider attitudes as one of numerous barriers to care affecting health equity (Mertz, Manuel-Barkin, Isman, & O'Neil, 2000). Previous to this study, the potential of self-directed methods that engage dental students to reflect on their prejudicial beliefs before providing patient care was largely unexplored.

This study introduced an original serialized reflection assignment into the preclinical curriculum of the first year dental students at the University of the Pacific Arthur A. Dugoni School of Dentistry. The purpose was to engage dental students in critical reflection of their own prejudicial beliefs, stimulate awareness of the potential impact of those beliefs, and encourage action to further explore and modify a priori prejudice in the interest of effective professional practice.

Results from this study suggest there is intrinsic value in preclinical reflection. Through self-direction, participants experienced increased awareness and transformation of their beliefs. Participants agreed that self-awareness of their beliefs was fostered and reflection had personal and educational value. Themes explored the nature of self-awareness of prejudice that could inform theory and practice. Insights were identified that could inform the preclinical curriculum.

This chapter presents a discussion of study limitations and describes insights from the results. Concluding this chapter is a discussion of the significance of the results and recommendations for dental education research, policy, and practice.

Limitations

At the onset of this study, several limitations were anticipated and addressed; however, once the study commenced a number of unforeseen methodological and process-based limitations came to light. These limitations could serve as a basis for improving further research on the topic of prejudicial attitudes.

Unanticipated methodological limitations included those pertaining to fidelity of the curriculum, the survey questions, and the length of the study. The assignment was presented by one faculty member to four groups of students in four separate seminars. This researcher observed inconsistent delivery of some directions to students. In particular, discussion on the types of underserved populations students might consider for critical reflection was presented thoroughly to the students in one seminar, but not in the other three seminars. This might have deferentially influenced students' population selections and attitudes towards the assignment. Future curriculum design would benefit from consistently delivered presentations that set up the assignment for optimum success.

Another limitation of this study was not including a survey question to assess the level of self-awareness fostered as a result of critical reflection. This information might have corroborated results from the Illumination theme on participants' insights and transformation of beliefs. A recommendation would be to include a retrospective pretest to determine if participants discovered new knowledge as a result of critical reflection.

The short length of the intervention was another methodological limitation because it reduced the time for thoughtful, critical reflection. Several participants provided feedback that the intervention was rushed and described forced reflection as a

constraint. Future curriculum design would benefit from fewer journals with more succinct directions, small group discussions, and well-placed prompts by faculty for journal self-evaluation.

Unanticipated process-based limitations were those discovered after the study commenced. These included a lack of focus group volunteers and incongruent journal material. The original research design planned for a participant focus group for the purpose of member checking to corroborate the intent of the participants' reflections and the qualitative assumptions made by the researcher. Despite several E-mailed requests for volunteers, no students responded. Potential reasons for lack of participation include scheduling conflicts, general apathy, and not receiving additional class credit or other tangible incentives. A recommendation for future research would be to offer incentives and sign ups at the beginning of the study.

With several participants, incongruence was noted between survey responses and journal material. In these instances, participants agreed they experienced personal value; however, their journal material was incongruent with their survey responses. Potential reasons for this discrepancy include social desirability bias, changing attitudes to the assignment throughout the journaling process, variability in interpretation of the weekly SHR directions, and students who may have varying degrees of academic integrity. A recommendation would be to change the survey to a retrospective pretest design.

Notwithstanding these limitations, there were several interesting discoveries that emerged from this study. The following presents a discussion on these results.

Self-awareness of Prejudicial Beliefs

"In order to actually experience peace, you have to go through what makes you uncomfortable" (Peltier & Stribling, 2009). Such was the guidance from Cesar Millan, the celebrated Dog Whisperer, on how to deal with a troublesome Mastiff. Sage counsel it was for both canine and human, and yet it is the latter character that proved more intractable to train. While dog whispering seems a far cry from the art and science of educating dental professionals, the advice serves as a cautionary beacon – personal and professional growth does not come easy. In fact, true reflection requires active work and that process can be difficult and wrought with emotional resistance (Mezirow, 1991).

Case in point, the impetus for this study originated from the regrettable circumstances described in Chapter 1 with the immigrant Filipino family who unexpectedly terminated care at this researcher's dental practice – a true story, and one that left a lasting impression begging for a solution. Difficult and sometimes emotionally resistant reflection led this researcher to consider the role of providers' attitudes in the delicate dynamics of patient care. Regardless of whether a cultural faux pas was committed or something else out of everyone's control, this researcher came to believe the answer does not lay in yet more cultural competency training, but instead in a practice of cultural humility – a lifelong process of critical reflection of assumptions and beliefs leading to respectful engagement with all patients (Tervalon & Murray-García, 1998).

Faculty are essential in guiding dental students to be critical thinkers and skilled clinicians. What this study found is that there are no shortcuts to exploring the legitimacy of one's prejudices. More importantly, critical reflection can be transformative.

Components of prejudicial self-awareness. The first research question explored the nature of dental students' self-awareness of their prejudicial beliefs. It purposefully did not focus on the prejudicial belief per se; numerous studies have explored prejudice and stereotyping with vigor (Allport, 1979; Brown, 2010; Hilton & von Hippel, 1996; Nelson, 2009). Likewise, the question did not focus on the process of critical reflection, even though the design and implementation of the innovative SHR journal templates filled a necessary void (Boyd, 2002; Gadbury-Amyot et al., 2006; Lalumandier, Victoroff, & Theurnagle, 2004). Instead, the question focused on the nature or intrinsic qualities of prejudicial self-awareness, heretofore enigmatic and not well articulated in the dental literature (Lovas, Lovas, & Lovas, 2008).

The qualitative themes closely followed the SHR heuristic inquiry framework, and these results were interpreted as conceptual building blocks of prejudicial self-awareness. Using the same basic configuration as outlined in the summary of results, Figure 12 revisits this from the perspective of a dental students' questions of the who, how, where, and what of their assumptions. Each question opens the door for interesting discussions on the nature of self-awareness of dental students' prejudicial beliefs.

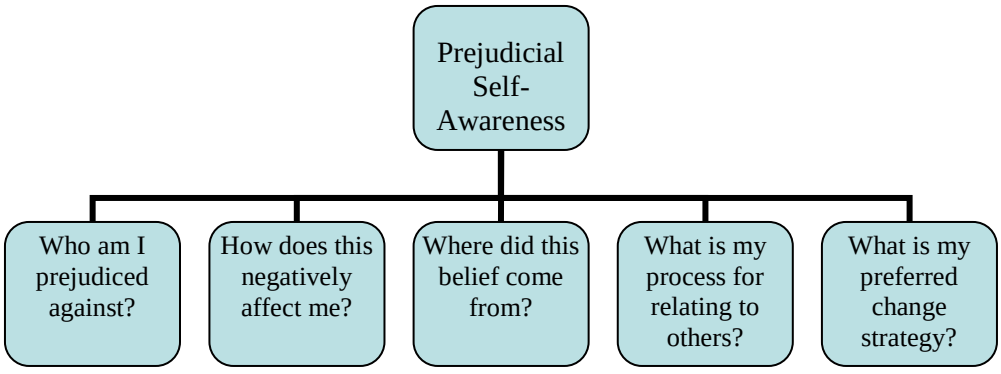

Figure 12. Questions Used to Guide Discussion on the Nature of Participants' Beliefs

Who am I prejudiced against? Who is affected by prejudice has been reported extensively in the dental literature, with all reviewed studies focused on commonly known marginalized populations. Conspicuously missing were studies that addressed dental patients who belong to a diversity of religious groups. The high number of participants who selected religious conservatives as their SSP is a noteworthy finding that may be indicative of America's polarized political climate. In fact, these participants produced some of the most emotion-laden journals and expressed the greatest resistance to changing their beliefs. This was decidedly ironic considering they labeled their dogmatic SSPs as "close-minded," "intolerant," "judgmental," and "self-righteous dangerous fanatics."

Also missing among the reviewed cultural competency studies were interventions that asked dental students to select a population for whom they may hold an assumption or prejudicial belief. A remarkable observation from this study was that, for numerous participants, SSP selection was a very difficult first step. Some participants perceived themselves as being at a higher level of cultural competence and therefore had no problem with any particular population, while others flatly denied the existence of any prejudice. Several participants feared the social stigma of being labeled prejudiced.

A possible explanation for this phenomenon could be how first year dental students interpret what it means to act professional. For some participants, this was reflected in quotations that addressed the impact of their attitudes on their future patients as a possible barrier to care. For other participants, their quotations revealed concern about their professional liability. The following explores this observation.

A primary assumption of this study was that self-awareness of dental students' prejudicial beliefs is a critical antecedent to achieving attitude change. Participants experienced numerous insights from critical reflection, but none as significant to this researcher as insights regarding the potential impact of attitudes on the patient encounter. Dentists' attitudes were considered by Brown, Manogue, and Rohlin (2002) to be important in provider-patient communication. Several participants might agree, as they voiced concerns about how their attitude could show and negatively impact their patients. One participant said, "People can perceive your attitude through body language and verbal cues such as intonation or phrasing." A possible explanation for this awareness might be that these empathetic participants were aware of their own nonverbal body language in communicating their attitudes. Incongruence in body language might be a key issue involved in the effect of provider attitudes as a barrier to care. In poker, this type of incongruence in body language consists of tell-tale mannerisms – also known as the poker tell – that belie the intended deceit of their opponents.

However, a number of participants stated that suppressing attitudes are, in part, what defines professionalism. In his reluctance to select a SSP, one participant made a revealing comment: "Anybody who does hold truly racist beliefs would hold them back professionally and is smart enough not to state them openly." To be sure, there was a surprising number of participants who said they would simply "grit their teeth" as a way of dealing with their prejudicial beliefs. This is not always a successful approach.

This naïve interpretation is understandable for first year dental students who have yet to take the required course in professionalism, and there is a possible explanation for

their position. It could be assumed, for good or bad, that participants' disinclination to openly admit to prejudice might be the result of wholesale culturalization into an extreme form of political correctness. In light of their eventual professional responsibility to adhere to antidiscrimination laws, it is not unreasonable for dental students to be reluctant to freely admit, and honestly expose, the depths of their own biases on paper. Indeed, true anonymity with the journals was a real concern for some participants. There is genuine reason for fear of retribution from peers, patients, dental school faculty, or even legal authorities.

No doubt, considerable social and legal strides over the past decades have completely transformed the landscape of tolerance. Despite this progress, Ely, Meyerson, and Davidson (2006) explored political correctness in today's business climate and noted it is a "double-edged sword" (p. 2). The authors focused on business management, but the following quotation could also apply to patient communication:

> When majority members cannot speak candidly, *members of underrepresented groups also suffer:* "Minorities" can't discuss their concerns about fairness and fears about feeding into negative stereotypes, and that adds to an atmosphere in which people tiptoe around the issues and one another. These dynamics breed misunderstanding, conflict, and mistrust, corroding both managerial and team effectiveness (p. 3).

Unfortunately, a cultural norm driven by fear only serves to obfuscate communication lines and increases barriers to care. What this study's results suggest is that a singular difference exists between the belief types – the dogmatic, the empathetic, and the fearful – and that is the capacity for self-awareness of their attitudes. It is courageous self-awareness, not attitude suppression, which defines professionalism.

How does this negatively affect me? While some participants did not outwardly admit to being prejudiced against an entire population group, they admitted they sometimes felt prejudiced against specific individuals. Participants commented that some members of their SSPs behaved in a way typical of their stated prejudicial belief, and that it was of a sufficient level to negatively affect them. This led to an outcome of analysis – the negative stereotyping taxonomy. What emerged from analysis was that participants' negative beliefs clustered into how they perceived responsibility in the behavioral dynamic of prejudice.

A possible explanation for this might be the highly competitive nature of dental school admissions as well as the high number of participants who self-identified as immigrants or children of immigrants. Numerous participants indicated they and their families valued hard work and took personal responsibility for their high achievements. With these values in mind, it is not surprising that the range of negative beliefs focused on personally or socially-mediated accountability. This pattern remained consistent even when a selection of non-sample participants' beliefs was subjected to the taxonomy. For example, one Asian participant described her father as a hard-working dentist. She resented the Korean patients who tried to negotiate discounts on dental treatment, and to this affront, she said, "I realized that every discount that I give only diminishes the value of the treatment. I refuse to give discounts. They can go to Tijuana."

Beliefs, attitudes, and values are all interrelated aspects of culture (Wright & Taylor, 2005). Rokeach (1968) asserted, "While an attitude represents several beliefs focused on a specific object or situation, a value is a single belief that transcendentally

guides actions and judgments across specific objects and situations" (p. 160).

To apply this relationship, the participant's prejudicial belief towards Koreans was perhaps translated into an intolerant attitude through her personal value of financial responsibility. On the negative stereotyping taxonomy, this belief would fall under the category of social accountability and dogmatism: disrespect for other people's ideologies.

Disrespect for other people's ideologies appears to be about frame of reference. For the dental student in the role of a daughter, her frame of reference may reflect her family values of pride in quality workmanship and fairness in compensation. For the Korean patients, their frames of reference may reflect family values of prudence and thriftiness. However, this participant's assessment was to hold Koreans accountable for the dynamic: "The 'cheap mentality' only accentuates their own perceptions about their health. It says a lot about their own values regarding their own health."

Whether it is an overtly stated prejudice or a cultural assumption based on a few experiences, there is a chance participants may continue to gather evidence that support prejudicial beliefs. The stereotyping taxonomy could facilitate students' awareness of the link between their own cultural norms and values, and how this influences and manifests into their negative beliefs towards others. Through critical reflection, this participant discovered how her own values played a part in understanding why her negative beliefs affected her. While not yet transformational, this level of self-awareness is encouraging.

> Since my dad is a dentist, all of our dental work has been free. Perhaps this may be the only reason why it's so hard for me to understand why someone would ask for a discount, especially on dental treatments performed by my dad. I wonder if I'm offended in a way when patients ask for discount because I might somehow indirectly feel like they are not respecting my father.

Where did this belief come from? Mezirow (1991) observed that ethnocentric individuals who believe in their own racial or cultural superiority have a sociolinguistic meaning perspective – often the result of unconscious childhood socializations. Guiding participants to identify the source of their beliefs, such as those developed during their formative years, was an attempt to uncover sociocultural distortions that may represent unexamined areas of prejudicial beliefs. It was assumed that by illuminating the sources of adult participants' beliefs, they would be better equipped with more sophisticated critical thinking skills. These critical skills would then help identify and refine existing meaning perspectives.

Using Transformational Learning Theory as part of the theoretical framework was a purposeful approach aimed at guiding participants to unearth the sources of their meaning perspectives. The categories of belief sources that emerged from qualitative analysis were not unexpected and may serve to corroborate existing research. What was quite interesting, however, was that several participants acknowledged that if it were not for this assignment they never would have considered exploring and then challenging the legitimacy of their prejudicial beliefs. Furthermore, some participants' beliefs appeared to be transformed by journaling; but the number of insights and transformations was small. Nevertheless, this finding was tremendously encouraging to support the assertion that self-directed critical reflection in the preclinical curriculum may play an indispensable role for addressing prejudicial attitudes as a barrier to care.

There are some possible explanations for why there were too few transformations. The SHR journal templates were never intended to be a major focus of this study, and its

inclusion was a concession on the part of this researcher to assure a better reflective outcome. By evidence of the rich quotations from many of the participants, the SHR design was effective. However, the SHR was not a piloted or validated model; not unexpectedly, there was variance in the quality of reflection. A possible explanation is that some participants may be natural, critical reflectors and some clearly may not be as skilled. Many participants effortlessly extrapolated the intended meaning behind the SHR instructions and produced exceptional outcomes. On the other hand, a number of participants took the instructions quite literally and attempted to linearly answer as if it were a test question, while others complained of the difficulty in filling up a single page.

Another possible explanation could be due to the challenges in letting go of controlling the outcome. Week 4 instructions asked participants to "Let go of controlling the outcome to fit your previous assumptions, and reflect on the past four weeks allowing what you've discovered through journaling to sift, filter, morph, and recombine into new areas of self-awareness." For some, no amount of letting go would help: "It is not through these exercises that I will consider changing my belief since I believe that it is a well rooted belief that has been developed through my lifetime of experiences."

Mezirow (1991) forewarned that some beliefs and attitudes are not only distorted, but blocked from consciousness. For some participants there was resistance, but for others, becoming unblocked began with the realization they had never before considered challenging their long-held beliefs, or ever considered putting words on paper to explore the legitimacy of their childhood socializations. That first act of self-awareness could represent a simple, but profound, gateway to transformation.

What is my process for relating to others? Three perspectives emerged from the data as processes participants may use for relating to someone with whom they hold a negative assumption. Empathy expressed internalization; participants who demonstrated compassion. Speculation expressed superficiality; participants who ostensibly attempted to understand people different from themselves. Ascription expressed externalization; participants who clearly abdicated and disassociated themselves from any responsibility. Together, the three processes reflected participants' ways to understand, relate, and connect with others.

A possible explanation for this study's findings could be the strong influence of the Social and Emotional Competence (SEC) model (Seal et al., 2010) on the SHR's journal template design. These findings may contribute to the work of researchers on dental students and emotional intelligence. Emotional intelligence has been linked to improved patient satisfaction (Wager, Moseley, Grant, Gore, Owens, 2002), dental student clinical interview performance, and social skills and communication (Hannah, Lim, & Ayers, 2009).

Despite the strong influence of the SEC, uncovering the three processes was an exciting, albeit unexpected, outcome. Coding for this group of quotations was particularly challenging as data analysis did not begin with any pre-codes. It was not until the three processes were thoroughly examined for relevance to the study, that the SEC domains of Consideration and Connection explained the observed phenomenon. When the quotations were reviewed in light of the three processes or relational styles, what emerged potentially confirms and links with the work of Seal et al. (2010).

Participants who wrote about their prejudice used one of the three relating styles. These styles were perceived by the researcher as possibly reflective of, and linked to, the students' social and emotional strengths and weaknesses. For example, if a student responds to individuals with whom they are prejudiced with an ascriptive relating style, they may coincidentally have a low SEC score in the Consideration domain. This type of student might experience a higher rate of communication difficulties with their patients, and may not be conscious of the reasons why. In fact, among several of Pacific's clinical faculty, communication difficulties were considered a time-consuming challenge that often required significant mediation between dental students and patients.

Another outcome observed with this study was unexpected. Despite repeated attempts to draw out participants' emotions and feelings, these characteristics were disturbingly absent from the journals. One exception was the emotions associated with the anxiety of treating patients in the following academic year. A certain amount of trepidation towards the ambiguity of clinical care is expected (Dogra, Giordano, & France, 2007) and could explain these findings; however, it does not address the overall lack of emotionally descriptive phrasing in the journals. Possible explanations for this include the heavy emphasis on cognitive and behavioral development in undergraduate education, and potential deficiencies in social skills and emotional intelligence.

Interpersonal communication is affected by many variables, most particularly social and emotional competence. It is a skill that providers will develop over time – or they may remain stuck, lose patients, and not know why. Awareness of one's relational style may be a key factor in students' efforts to address their attitudes as a barrier to care.

What is my preferred change strategy? Mezirow (1991) was again called upon to guide the SHR directions with the embedment of an action plan as a critical finale for transforming meaning perspectives. For the participants who critically reflected and took personal responsibility for their prejudicial belief, it was assumed their action plan indicated a level of awareness for perceived continued self-directed learning and personal growth in the area of prejudice. This represented the final building block in the definition of prejudicial self-awareness.

An observation from this study was the trend for a number of participants to defer change efforts until they began providing care to patients in their clinical rotations. One explanation could include a preference for hands-on experience for skill development. However, one participant was concerned how to change his belief when the instigator of his belief was more exposure to older individuals. He remarked, "Clearly just spending time with older individuals isn't going to suddenly correct my belief system because it was in spending time with them in the first place that led me to believe the way that I do."

It was for this very reason that this study attempted to engage students in self-directed learning to discover the extent and legitimacy of the assumptions they may hold against others. Ideally, this preclinical preparation might avert some of the more indelicate behaviors associated with inexperienced dental students' attitudes. While there is no getting around the fact dental students eventually have to learn on patients, Strauss et al. (2003) was quick to say deferment is a flawed approach, specifically that "an unexamined experience may serve to confirm stereotypes and faulty assumptions about patients" (p. 1241).

Despite this disturbing trend, based on the volume of change effort quotations alone, this study confirmed the inclusion of Mezirow's (1991) action plan within Transformational Learning Theory as a step in adult learning. Just as self-discovery of the problem is a valuable learning method, so, too, is discovery of one's own solution. What this suggests is that an action plan is an essential ingredient in a self-directed intervention designed to engage students in self-discovery and transformational learning.

Enumerable studies have explored methods for dental students to pursue personal and professional growth. In particular, the past ten years has seen a significant upswing of studies dedicated to improving cultural competency (Rowland, Bean, & Casamassimo, 2006). Still largely unexplored has been the potential of self-directed methods that engage dental students to reflect on their prejudicial beliefs before providing patient care. This, in essence, is emancipatory pedagogy. "Whereas banking education anesthetizes and inhibits creative power, problem-posing education involves a constant unveiling of reality. The former attempts to maintain the submersion of consciousness; the latter strives for the *emergence* of consciousness and *critical intervention* in reality" (Freire, 2009, p. 81). As Freire (2009) suggested, the ultimate outcome of such educational strategies would be that critical reflection combined with action paves the way to social transformation. By all appearances, many of these dental students are well on their way.

Summary

This chapter looked at the conceptual building blocks of prejudicial self-awareness through who, how, where, and what of the participants' assumptions. Each question opened the door for interesting discussions on the nature of self-awareness of prejudicial beliefs. Who participants were prejudiced against was a very difficult choice for some, especially those concerned with social stigma or the legal ramifications of discrimination. The concept of professionalism was posited, with self-awareness of the impact of prejudicial attitudes a key factor. How participants were negatively affected was explained by the negative stereotyping taxonomy. Here, self-awareness of beliefs was discussed as being intricately linked with cultural values that may vary depending upon one's frame of reference.

Discovering where beliefs originate was easy for some participants and difficult for others. The simple act of realizing one's prejudicial beliefs have never been legitimately challenged could be a profound gateway to perspective transformation. What processes participants used to relate to others was discussed by linking results with the work of other researchers on social and emotional competence. Awareness of relational styles may be instrumental for improving interpersonal communication. Lastly, what change strategies participants' suggested were varied, but discussion focused on those that elected to defer until they began providing patient care. Together, these discussions considered how the conceptual building blocks of prejudicial self-awareness could guide and inform professional practice.

Dental education has slowly been moving from a humanistic pedagogy to a more socially conscious emancipatory pedagogy. The changing demographics of our nation demand that this educational paradigm shift occur. With researchers' ongoing efforts to test educational methods, the willingness of faculty to try out evidence-based best practices, and students' commitment to treat all patients with cultural humility, the potential to impact oral health care is endless.

One participant summed up the concerns with provider attitudes as a barrier to care by noting that more needs to be done. The optimistic hope of this researcher is that he and his classmates become a part of the solution to affect oral health inequities.

> Knowing that most people care only as long as they "have to" would be difficult and would be enough to make anyone hold a grudge. Coming into the clinic at Pacific these patients are seeing student doctors who are all extremely privileged. While they may not all have the same background and are not all privileged to the same degree, most have more than the average person can ever hope to have. They are in school for a well-paid and respected profession. The school and its students pride themselves on giving to the community; it's great and it's necessary.
>
> While I'm sure people are grateful, I can't help but think that those who are "served" aren't the least bit bitter about it. They may get clean teeth, maybe alleviation from some pain, but the big picture of their life has not changed. They are still mostly overlooked and in need of more help than we (students) could ever hope to provide. At the end of the day they know that we go home and cook meals, keep warm and dry, and go to sleep in our bed content with the fact that we did a humane deed that day.
>
> Granted, no one is required to help anyone at any time, and health care providers seem to be the most willing to offer their services to the general public both at home and abroad, but it can never be quite enough until there are more systems in place to allow for more help. The gap between the haves and have-nots is expanding and not much is changing to try to prevent it. While the people in the middle are trying to hold on to what they do have, the people closer to the bottom are left out in the cold even more.

Significance

There are several implications of this study for pedagogical practice as it relates to the social and political conditions that shape academic dental education and clinical practice. In the context of the intervention's placement within an academic dental institution course, the significance of fostering attitudinal self-awareness in dental students through critical reflection is expressed in several ways. They include application in the dental curriculum, academic curriculum reform, studies on provider attitudes as a barrier to care, and oral health disparities in the United States.

As a component of the curriculum, critical reflection and increased self-awareness of prejudicial beliefs may serve several significant purposes. It may add an opportunity for students to utilize self-direction in the pursuit of their learning and autonomy development. It may reduce faculty preparation time as students take personal responsibility for learning through self-discovery; subsequent small group discussions may then focus on essential areas of need. As a preclinical activity, critical reflection may provide an opportunity for students to explore a priori prejudicial beliefs and consider the impact of their attitudes on patients. Once students start to see patients for the first time, this preclinical preparation could potentially benefit students' social and emotional skills with improved provider-patient communication. The beneficial corollary could be that faculty time would be minimized for mediating potential communication problems commonly seen with novice dental students unaccustomed to working with diverse and underserved patient populations.

As a method for continued curriculum reform, a focus on critical reflection of prejudices towards underserved patient populations may serve several purposes. It may qualify for meeting CODA (2010) standards and ADEA (2010) policy recommendations for a more socially-conscious approach to dental education. It may provide an alternative for cultural competency by focusing instead on cultural humility. It may provide an opportunity to incorporate emancipatory pedagogy into the humanistic educational environment through students' self-discovery of the social and political conditions that shape communities. Significance could also be reflected in the opportunity to move away from a lecture-based pedagogy in behavioral science courses to one that promotes more critical thinking, critical reflection, and transformational learning.

As a contribution to research related to provider attitudes as a barrier to care, the results of this study may inform dental educators and researchers of the value of preclinical reflection, as opposed to post-experiential reflection. The focus on student-selected patient populations could also contribute to reducing the existing gaps in research on studies focused primarily on pre-determined patient populations. The findings on the components of prejudicial self-awareness, the negative stereotyping taxonomy, and the three relational styles may contribute to the development of new theory and interventions focused on provider attitudes.

As a contributor to improving oral health disparity, significance of increased self-awareness could be reflected in dental providers who are responsive to their impact on the provider-patient rapport. Ultimately, the outcome of improved communication may be reflected in better oral health compliance, leading to improved oral health outcomes.

Recommendations

This study has several recommendations for future research, policy, and practice. Following the brief introduction below, each of the recommendation areas are presented in detail.

Overall, the most important research recommendation would be to develop and test an effective heuristic to guide critical reflection. This would start with grounded theory to explore the nature of prejudicial self-awareness. The American Dental Education Association and Commission on Dental Accreditation policy would benefit from an extension of the definition of humanism. Instead of simply a humanistic educational environment, recommendations for policy would include fully developing a humanistically balanced educational process that in turn supports humanistic patient care. Next, the move towards critical and emancipatory pedagogy would shift the educational paradigm of dental education. Advocacy would be aimed at supporting the social and political conditions that shape academic dental education and clinical practice.

The most important practice recommendation is the process of praxis. Praxis would take what was learned through research, what was supported by policy, and then deliver it to the dental providers who provide oral health care to a diversity of patients. The intent of these recommendations is to develop critically reflective dental practitioners trained to assess the legitimacy of their beliefs, such that their increased awareness would ultimately lead to reducing the impact of provider attitudes as a barrier to oral health care.

Research. Several questions and assumptions were raised as a result of this study. Further study in these areas would advance research on provider attitudes as a barrier to oral health care. What follows are recommendations for research.

Suggestions for research include conducting surveys as starting points for study. One option could anonymously survey dental students' assumptions about a variety of socio-cultural population types as a precursor to cultural competency studies. Another suggestion would be to conduct an anonymous survey on the extent of students' concerns over admitting they hold assumptions or prejudicial beliefs. This was based on the assertion of the possible relationship between reluctance to admit to holding prejudices and extreme forms of political correctness (fear-based cultural competency requirements and antidiscrimination laws). A retrospective pretest to survey students' level of self-awareness and transformation of beliefs prior to, and after, critical reflection could be a precursor to studies on self-awareness of prejudice. Who is being prejudiced against has been reported extensively in the dental literature; however, none of the reviewed studies focused on diverse religions as a population group. Students could be surveyed regarding their opinions on the impact of religion as a factor in prejudicial beliefs and patient care.

Research is needed to develop and validate a heuristic tool to guide critical reflection. Reflection has been clearly proven to be beneficial; however, an assertion of this study was that too many dental students still struggle unnecessarily. Reflection is a skill that needs to be developed and carefully introduced into the curriculum, or risk failure in its intended outcome. Many of the reviewed studies did not provide specific

examples on how to guide reflection. Research approaches could include theory development and development of a heuristic tool for critical reflection.

Theory development would fully explore attitudinal theory and the constructs that define self-awareness of prejudice. A recommendation would be to first conduct a grounded theory study with the intent of operationalizing self-awareness of prejudicial beliefs. This study identified what could be considered as five potential constructs defining the nature of prejudicial self-awareness. Within these constructs were the negative stereotyping taxonomy and the relational processes used to understand others, both of which could advance research by adding to the diagnostic capability of theory. Two known issues would possibly need to be considered. First, missing from this study's conceptualization of prejudicial self-awareness is a culturally inclusive understanding of "the self" in self-awareness. Second, there is a need to determine the type of theory this would generate and to consider how that would influence further study and theory development. For example, Ajzen (2001) asserts that with the Theories of Reasoned Action and Planned Behavior, there is an intermediary intention to act between attitudes and actual behavior, and it is only when this intention is sufficiently strong that attitudes shape behavior. If an explanatory theory is suggested, a question raised by this study asks if there is there an initiating need for self-awareness of the attitude before intention is considered an intermediary factor.

Another area of research includes evaluating the Serialized Heuristic Reflection templates for eliciting critical reflection. Further research would apply what was learned

from research on attitudinal theory, pilot test the intervention, evaluate the results, and validate the reflective tool for use in academic dental institutions.

Lastly, further research is needed to determine the relationships between prejudicial attitudes, poor communication, health inequity, and poorer health outcomes. Research has recognized that provider attitudes are a barrier to oral health care; however, what is still unknown is the extent of which it contributes to oral health inequity and poorer health outcomes. A primary assumption of this study was that fostering self-awareness of prejudicial beliefs is a critical antecedent to achieving attitude change. Moreover, that increased awareness of providers' attitudes is a critical step towards mitigating the deleterious affect of attitudes on provider-patient communication. This study found that some students experienced an attitude change; however, the results were self-reported data and not useful for predictability. Experimental studies designed to measure changes with and without critical reflection would contribute to advancing research on oral health equity.

Policy. Several opportunities for advancing policy were observed as a result of this study. Further advocacy in these areas would increase the effectiveness of academic and professional practice. What follows are recommendations for policy development.

The dental education system presents several opportunities for advancing policy. Admissions criteria may consider requiring applicants to have prerequisite coursework in behavioral sciences, critical thinking, and cultural competency. Currently, only 12% of schools require prerequisites in the behavioral sciences (Okwuje et al., 2010b). This requirement may provide a better balance that is currently weighted heavily towards science-based courses. Evidence of undergraduate work in these courses may assure that students are starting from a level playing field, and are prepared for doctoral-level coursework designed for advancement into providing clinical care for all patient types.

Admissions criteria may also consider the social and emotional competence of applicants. The Dental Admission Test (DAT) is a requirement of all dental school applicants to assure excellence in cognitive ability, and the Perceptual Ability Test (PAT) is a requirement to assure applicants have the capacity for the skills needed to perform intricate dentistry. The Social and Emotional Competence (SEC) questionnaire could likewise be used to assure applicants have strong scores in all four domains, most particularly the domains of Consideration and Connection. Together, the undergraduate prerequisites and all three tests may be an indicator to admissions committees that applicants are humanistically balanced, and that this may translate into providers that possess greater capacity to provide humanistic patient care.

There are several areas in which the Commission on Dental Accreditation (CODA, 2010) standards could be revised to emphasize academic dentistry's responsibility to meet the oral health needs of an increasingly diverse and underserved population. Absent from the required dental curriculum are courses in dental public health (CODA, 2010). Educational policy at the level of the Commission on Dental Accreditation (CODA) and the American Dental Educators Association (ADEA) could possibly elevate the importance of such coursework, or require that all dental schools show evidence of successful integration into existing curricula.

CODA and ADEA could additionally be called upon to reinvigorate policy aimed at humanism in academic dental institutions. Specifically, there is a need for balanced humanistic educational methodologies. To date, policy focuses on creating a humanistic environment – this is fundamentally different from humanistic educational methodologies and humanistic patient care. Additionally, there is a building movement to shift the educational paradigm towards critical pedagogy. Policy at this level may encourage the shift from cultural competency training to a practice of cultural humility.

Professional practice policy aimed at culturally competent and respectful dental care could be addressed through licensure and continuing education requirements. Policy aimed at licensure requirements could mandate that continuing education courses include those in dental public health. Topics could include cultural competency, barriers to oral health care – including provider attitudes – and communication techniques when working with diverse and underserved patient populations.

Practice. Several practice insights were uncovered as a result of this study. These insights might improve application of critical reflection in a preclinical dental curriculum. What follows are recommendations for dental education practice.

The strongest practice recommendation is integration of critical reflection into the preclinical curriculum. Ideally, critical reflection could be continued throughout all years in dental school, into private dental practice, and private life. The aim could be to develop not only an intellectually critical thinker, but a socially conscious critical reflector as well. The goal could be to develop a practitioner who is unafraid to challenge their assumptions and beliefs as well as be able to assess the impact of their attitudes on their patients and oral health outcomes. The recommendation to accomplish this could begin with an academic culture that is responsive to CODA and ADEA policy for developing critical thinkers.

Suggestions for inclusion of critical reflection in the dental curriculum include well-prepared activities leading up to reflection, a clear heuristic to guide reflection, consistent delivery of directions, an appropriate length of time to reflect, complete anonymity, and faculty facilitation. The activities that preceded critical reflection were well received by students and faculty. One suggestion could be to adequately prepare students before they engage in the Values Vote activity. It is imperative that students are aware they are representing an actual person who holds a belief. It should be impressed upon students to be respectful of their classmates who hold beliefs that are counter to the majority's beliefs.

Consistency in the presentation of the critical reflection assignment could improve the outcome of journaling. A possible limitation of this study was slight inconsistencies in the introduction of the assignment to students. It could be assumed that some groups of students received a more comprehensive description of the assignment, specifically the opportunity to thoughtfully consider various social groups that were considered for their journal subjects. A suggestion to mitigate this could include a video taped introduction to the activity or a PowerPoint presentation to guide discussion. Additionally, time was a factor for many participants to engage in thoughtful critical reflection. Incorporating class time and spreading out the assignment over a longer period of time might mitigate this challenge.

Complete anonymity could assure more honest outcomes from critical reflection that may lead to more transformation of beliefs. Several participants noted that despite confidentiality from one another and their faculty, having the one researcher reading their journals still posed a threat. Suggestions to mitigate the issue of assignment credit may include having students submit a summary of their insights gained from critical reflection, or count the small group discussion towards earned participation points.

Faculty-facilitated small group discussions could keep critical reflection on track. As a self-directed activity, there are five possible entry points throughout the reflection period which offer opportunities for discussion. These entry points coincide with those described in Figure 12. The first entry point could be after students complete their Belief Statements. Faculty could use this as an opportunity to discuss students' concerns with identifying a belief, including political correctness and legal ramifications with

antidiscrimination laws. A second entry point could involve students' self-assessment of where their belief resides in the negative stereotype taxonomy. Faculty could use this opportunity to guide students to reflect on cultural and family values that influence their beliefs.

A third entry point could include helping students identify their relational style as empathetic, speculative, or ascriptive. This offers an opportunity to advance research and practice using the Social and Emotional Competence model in conjunction with critical reflection, such as the SHR journals. Students could compare their social emotional strengths and weaknesses to the relational styles reflected in their journals. As noted in the discussion, if a student tends to react to the experience of having differences with others in an ascriptive style, this entry point may provide an opportunity to fend off future communication difficulties. The SEC coaching model could then be an effective intervention to coordinate at this entry point. A fourth entry point could be when students generate an action plan. Several participants elected to defer their change efforts until they were in clinic or otherwise suggested they would put their feelings aside. Faculty could use this opportunity to discuss what it means to be a professional.

Lastly, what was discovered through research, supported by policy, and practically applied in dental schools would eventually reach private dental practices. Suggestions for practice include dental professionals cultivating a habit of critical reflection on the legitimacy of their beliefs. The aim is that increased self-awareness may ultimately lead to reducing the impact of provider attitudes as a barrier to oral health care.

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Appendix A

Permission Letter

UNIVERSITY OF THE
PACIFIC
School of Dentistry

Office of Graduate Studies and Research
San Jose State University
One Washington Square
San Jose, CA 95192-0025

2155 Webster Street
San Francisco, CA 94115
Tel 415.929.6400

September 20, 2010

Dear Members of the Committee:

On behalf of the University of the Pacific Arthur A. Dugoni School of Dentistry, I am writing to formally indicate our awareness of the research proposed by Deborah Narcisso, RDHAP, graduate student at San Jose State University. We are aware Ms. Narcisso intends to conduct her research by applying a teaching methodology of reflective journaling on prejudicial beliefs to all first year students, and conduct face-to-face interviews with a subset of students.

Please note Ms. Narcisso has permission to conduct her research at the University of Pacific Arthur A. Dugoni School of Dentistry for her study, "Emancipatory Pedagogy through a Heuristic Model of Reflection: Fostering Dental Students' Attitudinal Self-Awareness." Ms. Narcisso is currently on staff as volunteer adjunct faculty, and permission to conduct her research has been granted from September 2010 to March 2011.

If you have any questions or concerns, please feel free to contact my office at (415) 929-6427, or E-mail cmiller@pacific.edu.

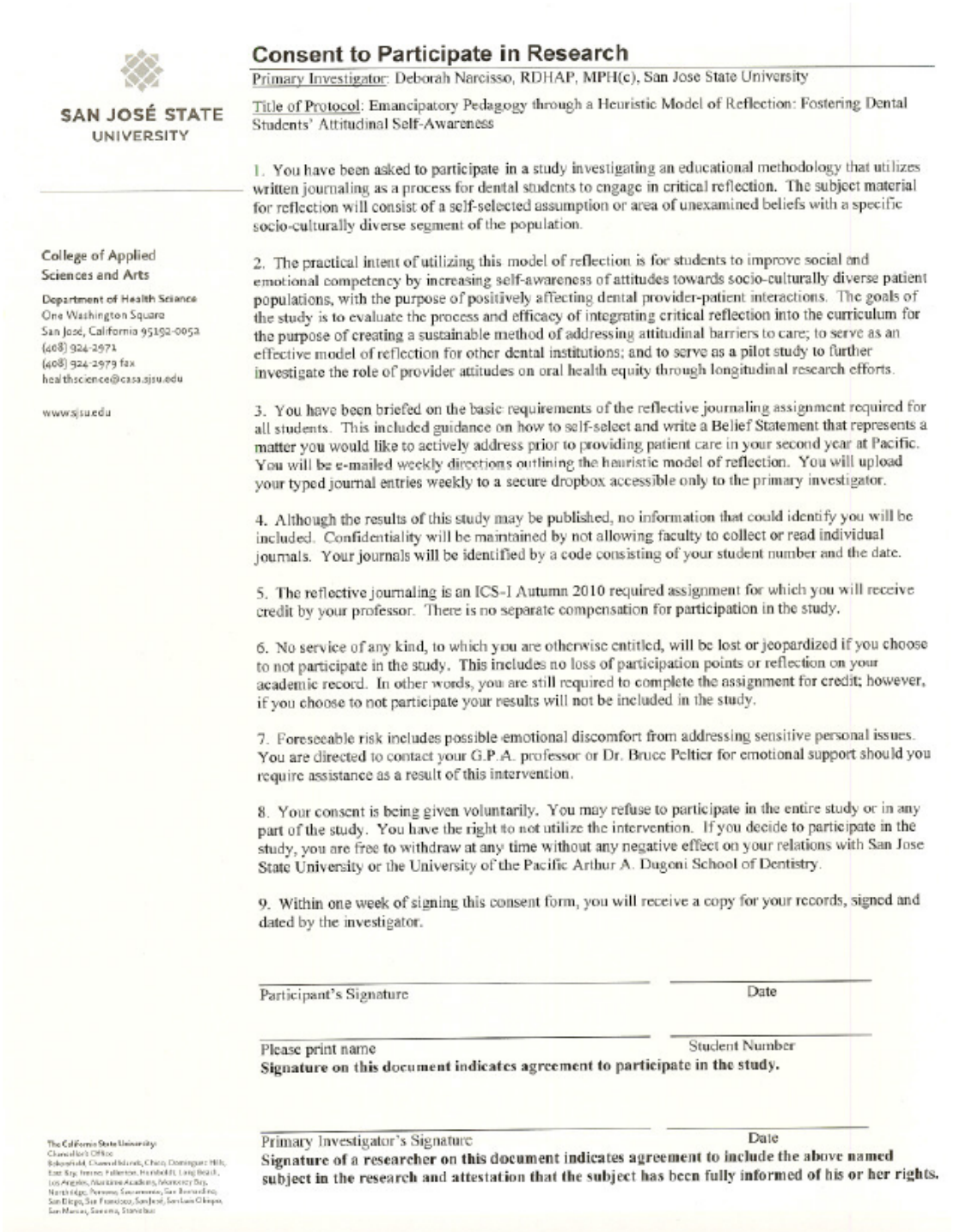
Sincerely,

Christine Miller, RDH, MHS, MA
Associate Professor
Department of Dental Practice

STOCKTON SAN FRANCISCO SACRAMENTO

Figure A 1. Permission Letter from the University of the Pacific Arthur A. Dugoni School of Dentistry

Consent Form



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Consent to Participate in Research

Primary Investigator: Deborah Narcisso, RDHAP, MPH(c), San Jose State University

Title of Protocol: Emancipatory Pedagogy through a Heuristic Model of Reflection: Fostering Dental Students' Attitudinal Self-Awareness

1. You have been asked to participate in a study investigating an educational methodology that utilizes written journaling as a process for dental students to engage in critical reflection. The subject material for reflection will consist of a self-selected assumption or area of unexamined beliefs with a specific socio-culturally diverse segment of the population.

2. The practical intent of utilizing this model of reflection is for students to improve social and emotional competency by increasing self-awareness of attitudes towards socio-culturally diverse patient populations, with the purpose of positively affecting dental provider-patient interactions. The goals of the study is to evaluate the process and efficacy of integrating critical reflection into the curriculum for the purpose of creating a sustainable method of addressing attitudinal barriers to care; to serve as an effective model of reflection for other dental institutions; and to serve as a pilot study to further investigate the role of provider attitudes on oral health equity through longitudinal research efforts.

3. You have been briefed on the basic requirements of the reflective journaling assignment required for all students. This included guidance on how to self-select and write a Belief Statement that represents a matter you would like to actively address prior to providing patient care in your second year at Pacific. You will be e-mailed weekly directions outlining the heuristic model of reflection. You will upload your typed journal entries weekly to a secure dropbox accessible only to the primary investigator.

4. Although the results of this study may be published, no information that could identify you will be included. Confidentiality will be maintained by not allowing faculty to collect or read individual journals. Your journals will be identified by a code consisting of your student number and the date.

5. The reflective journaling is an ICS-1 Autumn 2010 required assignment for which you will receive credit by your professor. There is no separate compensation for participation in the study.

6. No service of any kind, to which you are otherwise entitled, will be lost or jeopardized if you choose to not participate in the study. This includes no loss of participation points or reflection on your academic record. In other words, you are still required to complete the assignment for credit; however, if you choose to not participate your results will not be included in the study.

7. Foreseeable risk includes possible emotional discomfort from addressing sensitive personal issues. You are directed to contact your G.P.A. professor or Dr. Bruce Peltier for emotional support should you require assistance as a result of this intervention.

8. Your consent is being given voluntarily. You may refuse to participate in the entire study or in any part of the study. You have the right to not utilize the intervention. If you decide to participate in the study, you are free to withdraw at any time without any negative effect on your relations with San Jose State University or the University of the Pacific Arthur A. Dugoni School of Dentistry.

9. Within one week of signing this consent form, you will receive a copy for your records, signed and dated by the investigator.

Participant's Signature _____ Date _____

Please print name _____ Student Number _____

Signature on this document indicates agreement to participate in the study.

Primary Investigator's Signature _____ Date _____

Signature of a researcher on this document indicates agreement to include the above named subject in the research and attestation that the subject has been fully informed of his or her rights.

The California State University: Chancellor's Office
Bakersfield, Channel Islands, Chico, Dominguez Hills, East Bay, Fresno, Fullerton, Humboldt, Long Beach, Los Angeles, Maritime Academy, Monterey Bay, Northridge, Pomona, Sacramento, San Bernardino, San Diego, San Francisco, San José, San Luis Obispo, San Marcos, Sonoma, Stanislaus

Figure A 2. Informed Consent Letter for Participants of the Study

Appendix B

Values Vote Activity

Use: Warm-up; values clarification exercise for small to mid-size groups

Supplies Needed:
Four large sheets of paper for placards
Response forms (see attached)
Marker pen
Masking tape
List of statements (see attached)

Time Required: 30 minutes

Set-up: With the marker pen, using very big lettering, write the following values separately on each of the four pieces of large paper:

4. STRONGLY AGREE
3. AGREE
3. DISAGREE
1. STRONGLY DISAGREE

Using the masking tape, post (just above head height) each of the values on the poster paper in the four corners of the room

Instructions:
Distribute a copy of the "values" response sheet (attached) to each participant. Read each statement one at a time. After each statement is read, have participants respond to the statement by indicating how strongly they agree or disagree with the statement. After you have read all the statements, ask participants to hand in their responses without their names.
Shuffle the responses and redistribute them to the participants. Participants should not receive their own responses back so that the process remains anonymous. Review ground rules that all values should be respected, and no one should be criticized for their proxy vote.
Participants stand. Read the statement. After the statement is read, participants place themselves under the placard that indicates the response they were given.

Participants are then asked to defend the position they were given (response may or may not be their actual responses). Participants should raise their hands to speak one a time. Encourage feedback from individuals at both extremes. Participants should not argue or debate the issues; they only state the opinion of their vote and the potential rationale.
Repeat the process for each statement.

Statements

Instructions:
Using the key below, please circle your response that best corresponds with your opinion about each of the statements read to you. Indicate only one response for each statement.

Do not write your name on this form

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
1. All official US documents (e.g. voter materials) should be printed in English only.	4	3	2	1
2. Employees over age 65 years are just as competent as their younger counterparts.	4	3	2	1
3. Entitlement programs (i.e. welfare, Medicaid, WIC) are a necessary and just form of public assistance for individuals who qualify.	4	3	2	1
4. The price for airline tickets should be the same for everyone, regardless of a passenger's weight.	4	3	2	1
5. In some cases, racial profiling is an acceptable practice.	4	3	2	1
6. Marriage should be a right for everyone, regardless of sexual orientation.	4	3	2	1
7. Wearing overt religious symbols (e.g. a Muslim head covering or a large Christian cross) is acceptable attire for dental office staff.	4	3	2	1
8. Dentists should have the right to set limits on the types of patients they see.	4	3	2	1

Do not write your name on this form

Instructions:

Using the key below, please circle your response that best corresponds with your opinion about each of the statements read to you. Indicate only one response for each statement.

KEY:	strongly agree	agree	disagree	strongly disagree
1.	4	3	2	1
2.	4	3	2	1
3.	4	3	2	1
4.	4	3	2	1
5.	4	3	2	1
6.	4	3	2	1
7.	4	3	2	1
8.	4	3	2	1

Appendix C

Serialized Heuristic Reflection Journal Templates

To maintain confidentiality, type your 3-digit student number in box above.
Tab through the following fields and fill in each grey box as indicated.
Save this file using your student number. Example: 321.doc
Upload to Sakai by October 13, 2010

BELIEF STATEMENT

1. Retrieve your SED-I ranking on the following line items:

Competency	**Ranking**
Self-Awareness	_____
Consideration	_____
Connection	_____
Impact	_____

2. Identify one competency that you would like to develop:

   Competency: _____

3. Select a socio-culturally diverse population with which you may have an assumption, preconceived notion, a mindset, or an unexamined area of understanding.

   Population: _____

4. Consider a stereotype (right or wrong) that you have about the selected population.

   Stereotype: _____

5. Link your chosen population and SED competence with the following **Belief Statement**:

For whatever reasons, I believe _____ (insert a socio-cultural/ethnic/racial group) are _____ (insert your interpretation of this group). I acknowledge I am not completely clear why I believe this way; furthermore, I realize this might influence my attitude towards, and communication with, these individuals, as well as my ability to provide equitable oral health care in my professional practice. By examining this belief, I hope to gain greater social and emotional competence in _____ (insert competency).

Example:
For whatever reasons, I believe pit bulls are dangerous animals that shouldn't be family pets. By examining this belief, I hope to gain greater social/ emotional competency in being considerate of others.

6. Post your **Belief Statement** by Wednesday of this week via Drop Box in Sakai.

.Week 1

To protect your confidentiality, save your file:
Type your 3-digit student number in the above box
SAVE your doc file *exactly* as it looks above, e.g.: 147.Week 1.doc
Questions? Contact Debby Narcisso, RDHAP, MPH(c) dnarcisso@pacific.edu

Journaling Directions

- Journal a minimum of 1 typed page this week**. Upload to Sakai by: 10/31/10**
- This week: The focus is on S**elf-Awareness**. From the social/emotional perspective of emotional self-awareness, journal your personal attitudes (thoughts/emotions) and experiences with your selected socio-cultural group.
- Tip: Reflect throughout the week before writing. It helps to jot down short notes each day to jog your memory. *Immerse* yourself in considering the circumstances that led you to believe as you do about your selected group. Describe your belief in detail. Is it based on personal experience or implicitly understood as part of your family/cultural narrative? Is this belief real, implied, or exaggerated? How and why?

Belief Statement: For whatever reasons, I believe (selected group) are .

Week 1 Journal

.Week 2

To protect your confidentiality, save your file:
Type your 3-digit student number in the above box
SAVE your doc file *exactly* as it looks above, e.g.: 147.Week 2.doc
Questions? Contact Debby Narcisso, RDHAP, MPH(c) dnarcisso@pacific.edu

Journaling Directions

- Journal a minimum of 1 typed page this week. **Upload to Sakai by: 11/07/10**
- This week: The focus is on **consideration of others**. From the social/emotional perspective of self-monitoring and empathy, *consider how and why members of your selected group may feel about you and your beliefs.*
- Tip: *Immerse* yourself in understanding the attitudes/feelings/emotions of your selected group. If you had a personal experience with this group or a selected individual, consider the situation from their perspective. In other words, to the best of your ability, walk in their shoes.

Belief Statement: For whatever reasons, I believe (selected group) are .

Week 2 Journal

.Week 3

To protect your confidentiality, save your file:
Type your 3-digit student number in the above box
SAVE your doc file *exactly* as it looks above, e.g.: 147.Week 3.doc
Questions? Contact Debby Narcisso, RDHAP, MPH(c) dnarcisso@pacific.edu

Journaling Directions

- Journal a minimum of 1 typed page this week**. Upload to Sakai by: 11/14/10**
- This week: The focus is on **connection with others**. From the social/emotional perspective of sociability (comfort with others) and intimacy (trust with others), journal your personal *feelings* regarding actual relationships or potential opportunities to interact with people from your selected group – whether it's professional or personal.
- Tip: *Immerse* yourself in understanding your attitudes/feelings/emotions with regard to the ease in establishing, or the effort in maintaining a relationship. Disengage from your assumptions, and consider your willingness to connect by openly listening to, and genuinely communicating with, individuals from your selected group.

Belief Statement: For whatever reasons, I believe (selected group) are .

Week 3 Journal

.Week 4

To protect your confidentiality:
Type your 3-digit student number in the above box
SAVE your doc file *exactly* as it looks above, e.g.: 147.Week 4.doc
Questions? Contact Debby Narcisso, RDHAP, MPH(c) dnarcisso@pacific.edu

Journaling Directions

- Journal a minimum of 1 typed page this week**. Upload to Sakai by: 11/21/10**
- This week: How do you feel about changing your belief statement? What social emotional competency would help you transform your beliefs about your selected group? What new thoughts and feelings would you need to consider for this week's focus on impacting others? From the social/emotional perspective of *initiative* and *inspiration*, journal your emotions/feelings/attitudes about influencing individuals from your selected group. Impact is the inclination and confidence to seek leadership opportunities, and the capacity to inspire others to change, e.g. treatment plan acceptance, or health behavior change in patients from your selected socio-cultural group.
- Tip: *Incubation* is the time to step back from gathering new information, and to consider future professional or personal relationship opportunities with your selected group – such as patients you may see, or staffs you may hire. Let go of controlling the outcome to fit your previous assumptions, and reflect on the past four weeks allowing what you've discovered through journaling to sift, filter, morph, and recombine into new areas of self-awareness.

- Next week: *Illumination* is the process of clarifying your most significant insights from reflective incubation. Begin the process of actively identifying your insights – your emotions and previous assumptions – and how they might have changed or become clarified as a result of in-depth reflection. Don't rush this process, be thoughtful. Next week you will provide a completed summary for the final journaling assignment.

Week 4 Journal

.Week 5

To protect your confidentiality:
Type your 3-digit student number in the above box
SAVE your doc file *exactly* as it looks above, e.g., 147.Week 5.doc
Questions? Contact Debby Narcisso, RDHAP, MPH(c) dnarcisso@pacific.edu

Directions

To receive full credit, please respond to EACH section below. Upload to Sakai by: 11/30/10

1. **Pre-Journaling Belief Statement**: **Write exactly what you submitted in October.**

For whatever reasons, I believe _____ (insert a socio-cultural/ethnic/racial group) are _____ (insert your interpretation of this group). I acknowledge I was not completely clear why I believed this way; furthermore, I realized this might influence my attitude towards, and communication with, these individuals, as well as my ability to provide equitable oral health care in my professional practice.

2. **Summary of insights**: **Summarize your significant emotions/attitudes, beliefs/assumptions after journaling.**

3. **Post-Journaling Belief Statement**: **Write a post-journaling Belief Statement in light of your reflection.**

For whatever reasons, I now believe _____ (insert a socio-cultural/ethnic/racial group) are _____ (insert your interpretation).

4. Survey: Please check the box that best represents your response

Agree	Disagree	
☐	☐	Self-awareness of my beliefs was fostered (positive or negative) through reflective journaling
☐	☐	I had a positive change in attitude towards my selected group after reflective journaling.
☐	☐	I experienced personal value in fostering self-awareness of my assumptions/beliefs
☐	☐	I believe there is educational value in students fostering self-awareness of beliefs prior to providing clinical care.

5. **Action Plan**: write how you will further address your beliefs about, and communication with, your selected group particularly as it relates to providing care for patients, e.g., take cultural competency training, continue journaling.

Comments? Feel free to include any comments regarding your experience/opinions about your critical reflection

Appendix D

Detailed Sampling Process and Inclusion Criteria

Sampling procedures were integral to, and integrated with, the data analysis plan; moreover, sampling procedures were also a component of plans for scientific integrity, namely consistency and trustworthiness. With this in mind, detailed attention to both plans commanded there be a central location in which to chronicle the process in entirety. Appendix D weaves together the following: sampling procedures methodology that utilized three levels of selection criteria to establish a purposive sample, and the descriptive results at each selection level.

First level selection criterion. The study population consisted of first-year dental students enrolled in an American academic dental institution. With an accessible population of 142 students matriculated into the University of the Pacific Arthur A. Dugoni School of Dentistry, a total of 132 students (93%) signed consent forms to participate in the study.

The first level selection criterion was based on the completeness of journals, with the requirement that all participants submitted a journal for each of the five weeks. A total of 13 participants did not meet the first level criterion (11 males, 2 females). This adjusted the number of eligible participants from 132 (baseline) to 118 participants. As shown in Table D1, demographic statistics for the 118 participants after applying the first level of selection criterion were nearly identical with baseline proportions.

Table D 1

Distribution of Participants through Sampling Selection Levels by Gender, Race, Ethnicity, and Age

		Gender		Race/Ethnicity				Age
		Female	Male	Asian	White	Latino	Mixed	
Level	*n*	%	%	%	%	%	%	*M*
Baseline	132	52.9	47.7	45.5	45.5	5.3	3.8	24.1
First	118	49.2	50.8	42.4	49.2	5.1	3.4	24.1
Second	107	54.2	45.8	46.7	43.9	5.6	3.7	24.1
Third	44	52.3	47.7	45.5	45.5	4.5	4.5	25.0

Note. Mixed = mixed race participants. *n* = number of participants. *M* = mean age of participants. Level = selection level. Baseline = all participants in the study population. Third = purposive sample for data analysis.

Second level selection criterion. The second level selection process grouped participants into distinct categories as defined by the participants' selected socio-cultural populations. The criterion required each major category to consist of multiple representations for within group qualitative data analysis. A total of six major categories were identified: Age, Race, Religion, Health, Socioeconomic Status (SES), and Other. For a complete accounting of all socio-cultural groups assigned per major category, see Table D2.

The inability to perform within group qualitative comparisons for the Other category adjusted the number of eligible participants from 118 to 107 participants. As shown in Table D1, demographic statistics for the 107 participants after applying the second level of selection criterion were nearly identical with baseline proportions.

Table D 2

Distribution of Participants' Selected Socio-Cultural Populations

Category	Selected Socio-Cultural Populations	First Selection Level Participants *n*	Sample Participants *n*
Race			
	Asian, Korean, Vietnamese, Filipino	14	5
	African American, Black	8	3
	Middle Eastern, Russian	4	1
	Mexican	4	0
	White	2	0
	Americans	2	0
	Illegal immigrants, non-English speaking	3	1
Religion			
	Religious zealots	15	7
	Mormon	4	1
	Jewish	2	1
	Muslim	3	2
Health			
	HIV/AIDS, infectious diseases	8	1
	Obesity	4	2
	Drug addiction	4	2
	Developmental disability, mental illness	2	0
Age			
	Teenagers	9	4
	Elderly	3	3
	Young adults	2	1
	Children	2	1
SES			
	Poor, welfare	7	5
	Homeless, panhandlers	5	4
Other			
	Conservatives	2	0
	Dropouts	1	0
	Jersey brothers	1	0
	Judgmental individuals	1	0
	Personal computer lovers	1	0
	Police	1	0
	Poor hygiene	1	0
	Short men	1	0
	Supermodels	1	0
	Thugs	1	0
Total		118	44

Note. First selection level participants = participants that passed the first selection criteria; Sample = purposive sample population used for data analysis.
n = number of participants.

Third level selection criteria. The third level selection process was based on a combination of essential criteria: standardized length of written material, substantiveness of writing; a representative balance of survey results, comments, demographic variables; and group assignment.

Length criterion required participants to have written greater than one paragraph per week, with the preference for one full page per each of the five weeks. To determine that journal content was substantive and representative of critical reflection involved scanning each of the 107 participants' journals. Selection was based on a preference for the following criteria:

1. Participants had personal experience with their socio-cultural group
2. Sources of prejudicial beliefs were identified as an actual personal experience or part of the participants' cultural narrative, as opposed to recounting an impersonal rendition or academic report
3. Participants that described feelings and emotions
4. Change efforts and plans for future action were described
5. Insights were offered regarding perceived personal and educational value.

At the completion of the third level participant selection, a total of 44 participants were selected for the final sample population; moreover, the goal of approximating the baseline population was met. As shown in Table D1, demographic variables were compared across all selection levels. There were no proportional differences between baseline and the final purposive sample for Males, Whites, and Asians; and there were no significant proportional differences (p = 1.000) between the baseline group and the purposive sample for Females, Hispanic, and Mixed. Differences in group mean age between baseline and the purposive sample were also not significant (95% CI [-2.04 to 0.44], p=0.167). The following describes criteria requirements and results for the comments section, survey questions, and group distribution.

Comments section criterion required a preference for participants to have written feedback about their experience or opinions with critical reflection. The comments section of Week 5 of the journals was an optional component for participants to write about their experience or opinions with critical reflection. To determine that a balance of positive and negative comments was included involved scanning each of the 107 participants' journals. The final results of the distribution of participants' comments achieved a representative balance and were as follows.

Table D 3

Distribution of Sample Participants' Comments

Comments	*n*
Positive	14
Negative	13
Conflictual	9
None	8
Total	44

Note. n = number. Positive = positive comments. Negative = negative comments. Conflictual = comments that were both positive and negative. None = participant did not write any comments.

Survey questions criterion required participants to have answered the four-question, dichotomous-scaled survey on participants' perceptions of critical reflection. The four questions were limited to a response of agree or disagree with the following statements:

1. Awareness: Self-awareness of my beliefs was fostered (positive or negative) through reflective journaling.
2. Attitude: I had a positive change in attitude towards my selected group after reflective journaling.
3. Personal: I experienced personal value in fostering self-awareness of my assumptions/beliefs
4. Pedagogical: I believe there is educational value in students fostering self-awareness of beliefs prior to providing clinical care.

As shown in Table D4, proportions from the survey responses were obtained for comparison between baseline participants and the purposive sample participants. Overall, the purposive sample participants agreed slightly more with self-awareness and pedagogical value; and agreed slightly less for attitude change and personal value; however, there were no significant differences ($p < 0.10$) between the baseline group and the purposive sample across all four variables.

Table D 4

Distribution of Individual Participants Who Agreed or Disagreed to the Survey Questions

		Survey Question							
		1. Awareness		2. Attitude		3. Personal		4. Pedagogical	
		Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
Level	*n*	%		%		%		%	
Baseline	129	88.4	11.6	63.1	36.9	73.1	26.9	84.5	15.5
Sample	44	90.9	9.1	54.5	45.5	63.6	36.4	88.6	11.4

Note. *n* = number of participants. Baseline = dental students that consented to participate in the study; total reflects 3 participants that did not respond to the survey. Sample = purposive sample participants.

Lastly, representation within the five major socio-cultural categories was considered essential for qualitative data analysis; this was due to utilization of the constant comparative method for individual analysis, within group comparisons, and between group comparisons. Group distributions by major socio-cultural categories were as follows: Religion presented with the largest representation of participants (*n* = 11); followed closely in succeeding order by the Race group (*n*=10); Age (*n*=9); SES (*n*=8); and the Health group (*n*=6).

Third level selection criteria by order of importance.

- Excel sorting: (in order of importance)
  - By positive self-awareness
  - By attitude change, personal value
- Assess for length
  - Content of journals > 1 paragraph per week
- Scan for substance: (in order of importance)
  - Described personal experience, and sources of beliefs
  - Described feelings/emotions
  - Described solutions, and/or takes personal responsibility
  - Offered insights regarding perceived personal/educational value
- Assure balance for analysis (in order of importance)
  - Balance of positive/negative comments
  - Balance of male/female participants

Appendix E

Detailed Qualitative Data Analysis Protocols

Just as the sampling procedures were integral to, and integrated with the data analysis plan, the reciprocal was also true. Qualitative data analysis procedures were integral to, and integrated with boundary setting protocols to assist in selecting participants based on the content of their critical reflections. The boundary-setting strategy was for maximum variation, with the intent of getting a broad range of voices from the participants. This process of participant selection was incorporated into the initial stages of qualitative analysis. See Appendix D for sampling details.

In essence, the research questions for this study focused on two main trajectories: self-awareness of prejudicial beliefs and curriculum insights from critical reflection. The qualitative data analysis process selected was based in grounded theory protocols using the constant comparative method (CCM) as developed by Glaser and Strauss (1967). Rigorous analysis through grounded theory was outside the scope of this study; however, it ultimately served as a solid beginning for future research. Appendix E reflects the qualitative data analysis protocols, selective results, key decisions made, and insights discovered from reading and analyzing over 200 pages of participants' reflections.

Initial qualitative analysis protocols

Upload journals to Atlas ti

- Rename files using the following naming convention:
  - Group, gender, race, age, student number
  - Example: AGEHM28.147.doc
  - This code represents a Hispanic male, age 28, student #147 who is journaling about an age-based prejudice.

Read several journals without coding

- Examine the text for general flow, congruent thoughts, tone, direction, attitudes, feelings

Individual Journal Analysis protocols

Coding strategy within an individual participant's 5-week journal

- *Pre-analysis coding strategy*
  - Codes to include identifying passages that pertain to the research questions: Beliefs, Value
  - Codes to include identifying passages that pertain to social and emotional competence: emotions, attitudes, intimacy/trust, sociability/comfort, inspiration/leadership
  - Codes to include identifying passages that pertain to personal experiences
  - Codes to include identifying passages that demonstrate a transformation occurred

- *Coding strategy during initial coding*
  - Be open to additional factors that aren't covered under the pre-coding strategies, i.e. reactions, responses
  - Label single words, phrases, sentences, paragraphs with representative words to describe the phenomena observed
  - Avoid using descriptors that bias or judge
  - Code to saturation, or until there are no new descriptive words to define phenomena
  - Keep a close connection between codes and data: compare new passages/phrases/words with existing codes and see if the process is consistent and applied the same way.

Within Group Analysis protocols: CCM

Comparison within groups

- *Within group comparison strategy*
  - This defines individual participants who share the same socio-cultural population, but they may have different prejudice/stereotype.
  - Strategy: discovery of the relationship of codes across different perspectives within the same participant group (e.g., comparing every journal within the AGE group).
- *Coding strategy during initial coding*
  - Be open to additional factors that aren't covered under the pre-coding strategies, i.e. reactions, responses
  - Label single words, phrases, sentences, paragraphs with representative words to describe the phenomena observed
  - Avoid using descriptors that bias or judge
  - Code to saturation, or until there are no new descriptive words to define phenomena
  - Keep a close connection between codes and data: compare new passages/phrases/words with existing codes and see if the process is consistent and applied the same way.

Qualitative analysis results: early categorization after within group coding

After going through and doing open coding for the first pass through of individual journals, I worked off-line to organize the themes. Coding patterns after within group analysis was as follows:

1. Beliefs are identified; the situation is conveyed (personal experience)
2. Interpretation of the situation (perspective, insight, understanding)
3. Reactions to the situation (rationalization, justification, emotions, coping)
4. Plans to address the situation (change efforts anticipated for the future, change efforts underway now).

Qualitative analysis results: negative stereotyping taxonomy

Belief statements: 44 Stereotypes fell into characteristics along two threads:

Personal accountability/self-regulation:
People who don't take the initiative, don't have self-discipline, take personal responsibility, or have the constitution and fortitude to help themselves
Money: irresponsibility, or cheap

Social behavior:
People who are rude, inconsiderate, disrespectful, unsociable, or unaware
Dangerous/threatening, mentally unstable
Close-minded/opinionated, strident or extremist in some form

Negative stereotype taxonomy
Results: all belief quotations from the 44 participants

Personal accountability category

Indolence: lacking individual initiative and effort

- Careless about well-being
- Gross
- Lazy, lacking in self-discipline; lazy
- Weak willed, getting through life with a crutch
- Lazy and not hard-working
- Get some initiative
- Not willing to help themselves
- Strain on our society
- Lack of trying
- Taking advantage of the system
- Entitlement

Ineptitude: lacking individual knowledge/awareness/competency

- Boring
- Stupid
- Superficial
- Shallow
- Reserved
- Uneducated, difficult to communicate with (The participant's belief of communication difficulty was in regards to individuals who do not speak English)

Social Accountability category

Inconsideration: lacking regard for other people and their feelings

- Disrespectful, selfish; disrespectful, can't respect authority figures; disrespectful; disrespectful
- Inconsiderate; inconsiderate
- Rude; don't care about anyone but themselves
- Short attention spans; selfish focus
- Difficult to identify and interact with; difficult to hold normal conversations; complicated to deal with; function on a different level
- Do not associate outside of their ethnic group; tend to cluster together

Aggression: lacking regard for other people's sense of security

- Short tempered
- Violent; violent
- Untrustworthy, competitive, conniving
- Aggressive
- Dangerous
- Unstable, dangerous; volatile; dangerous and sketchy
- Mentally unstable and are a danger to the population
- Misbehaving brats
- Punks; act menacing

Dogmatism: lacking respect for other people's ideologies

- Stubborn in their ways; don't change their opinion
- Close-minded: Subjective and close-minded, refuse to respect other people's customs and beliefs; refused to respect other's values; Intolerant, close-minded; stubborn, close-minded; close-minded and judgmental; close-minded
- Rigid, fanatical, ultraconservative
- Socially toxic and intolerant
- Judgmental; concept of reality is distorted
- Actively trying to convert
- Prejudiced
- Miserly:
    - Penny savers
    - Cheap; cheap
        - The "miserly" ideology was based on the participants' description of the dogmatic approach these individuals had regarding asserting their economic values when aggressively demanding discounts for dental services.

Random sampling of belief quotations of every 7th participant
from the 2nd level selection pool

For the purpose of verification of the two sub-themes and respective categories, a random sample of 12 participant's journals was analyzed; all representative prejudicial beliefs were congruent with the two sub-themes and categories.

1. high tempered
2. lazy
3. illegal
4. not trustworthy
5. self-righteous dangerous fanatics
6. untrustworthy
7. lazy and lack the motivation to better their lives
8. uptight and too intense
9. lazy
10. careless about their oral health
11. judgmental
12. loud and opinionated

Random participants' quotes sorted into negative stereotype taxonomy

Personal Accountability category

Indolence:

- lazy; lazy
- lazy and lack the motivation to better their lives
- careless about their oral health

Social Accountability category

Aggression:

- high tempered
- illegal
- not trustworthy; untrustworthy

Dogmatism:

- self-righteous dangerous fanatics
- uptight and too intense
- judgmental
- loud and opinionated

Table E 1

Distribution of Participant Groups by Negative Stereotypes of Personal Accountability and Social Accountability

	Personal Accountability		Social Accountability		
	Indolence	Ineptitude	Inconsideration	Intimidation	Dogmatism
Group	*n*	*n*	*n*	*n*	*n*
Age	1	2	5	0	1
Health	4	0	1	0	0
Race	1	2	2	4	2
Religion	0	0	0	1	11
SES	5	1	0	2	0

Note. n = number of quotations that illustrated each category. Group = participant groups

CCM Among Group Analysis protocols

Comparison among groups

- *Between group comparison strategy*
  - This defines comparisons between participant groups who do not share the same socio-cultural population or prejudice/stereotype.
  - Strategy: discovery of the relationship of codes between different perspectives between different participant groups

- *Coding strategy during initial coding*
  - Be open to additional factors that aren't covered under the pre-coding strategies, i.e. reactions, responses
  - Label single words, phrases, sentences, paragraphs with representative words to describe the phenomena observed
  - Avoid using descriptors that bias or judge
  - Code to saturation, or until there are no new descriptive words to define phenomena
  - Keep a close connection between codes and data: compare new passages/phrases/words with existing codes and see if the process is consistent and applied the same way.

Qualitative analysis results: categorization into themes for research question #1

Five themes emerged from data analysis

1. Initial Engagement, or self-awareness of the belief
2. Immersion, or self-awareness of the sources of belief
3. Explication, or self-awareness of the perspective of the belief
4. Illumination, or transformational insights from reflection
5. Creative Synthesis, or self-awareness of change efforts towards the belief.

Coda

A thought without belief is nothing at all.

A thought *with* belief can start a war…or heal a nation, even.

Such is the power of belief.

~ Mooji

www.mooji.org