

Improving the communication ethics of dental students through learning about local culture

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Abstract

Dental students must communicate empathetically by paying attention to local cultural values. This article investigates the relationship between studying local culture and interest in developing sympathetic communication. This study uses a qualitative method. Ninety-six dental students were selected as respondents. Primary data comes from student responses and screenshots of learning materials collected through online questionnaires. The results showed that there had been an increase in the knowledge of dental students to develop sympathetic communication by paying attention to the values of local cultural wisdom. Students' responses to learning local culture are divided into three groups: (a) respondents who think that professional dentists must have cultural intelligence in building communication; (b) respondents who think that cultural knowledge is relevant to the social field; and (c) respondents who stated that cultural intelligence could be correlated with various aspects of life. This study provides a basis for designing similar curricula in other universities.

Keywords: Communication, etiquette, humanist dentist, learning, local culture.

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1. Introduction

The ethics of speaking politely by paying attention to the values of local cultural wisdom offers the best solution to prepare prospective dentists to embrace a humanist character in Indonesia. Humanist dentists are characterised by their ability to apply the principles of humanist behavior to their patients (Choo Hwee et al., 2020; Sedhom, 2020). The interdependent relationship between patient and doctor is a fundamental principle of doctors' and dentists' work (Freudenreich & Kontos, 2019; Rieffestahl et al., 2021; Shaw et al., 2018). Doctors are expected to meet patients' expectations for their medical treatment. Medical decisions made by doctors for their patients must be conveyed through positive, practical, constructive, and respectful communication skills (Borysowski et al., 2021; Koh, 2018; Søndergaard et al., 2021). Humanist doctors have an advantage in that they can apply principles of communication (Grech, 2020; Roborgh, 2018). Medical professionals must establish good interpersonal relationships (Al-Hemiary et al., 2020; Armas et al., 2018; Wu et al., 2021). Ideally, a doctor is proficient in dealing with various physical and non-physical ailments and knowing the patient's feelings and thoughts. Therefore, the medical professional is expected to understand the patient's difficulties. Information about patient difficulties is a product of good communication skills (Chang et al., 2020; Cuffy et al., 2020; Sedhom, 2020). While some doctors pay attention to the human aspect (humanist), many do not (Grech, 2020; Makino et al., 2018). A doctor who bases patient communication on humanist principles can be called a humanist doctor (Hargraves et al., 2019; Sari, 2014; Wu et al., 2021) and a humanist dentist.

Communication is a basic need of humans as social beings because it can increase cooperation (DeCaro et al., 2021) and knowledge exchange (Sanford et al., 2020). Humans will become isolated when they have barriers to communicating with others (Giovannoni & Xiong, 2019). Humans can communicate from birth through verbal and non-verbal language patterned in conventional systems (Colomer & Sebastian-Galles, 2020; Conway et al., 2020). Spoken language comes from languages humans have mastered early (Beard, 2018), while non-verbal language comes from non-language aspects, such as facial expressions, gestures, sounds (Holler & Levinson, 2019; Xiao et al., 2020), and pictures (Terrier, 2019). Verbal and non-verbal language has the potential to build practical communication skills.

Effective communication skills between the speaker and the interlocutor are marked by the satisfaction and comfort of both parties (Monshizadeh et al., 2019; Ou & Gu, 2020). The pleasure and comfort produced in communication affect the maintenance of good relations between the speaker and the interlocutor (Maybury et al., 2013). The excellent relationships resulting from building an effective communication process can have implications for luck, wealth, and future success for both parties involved in the communication process (Curcija et al., 2019; Lucas et al., 2020). A study in China reported that doctors and patients should have no communication failure (A. Guo & Wang, 2021). Losing communication between dentists and laboratory staff puts dental health at risk, as seen in a case study in Riyadh (Tulbah et al., 2017). The ability of health care professionals, such as doctors, to communicate effectively can have a tremendous impact on their earnings (Önler et al., 2018), likewise pharmacists (Schwartzman et al., 2021; Svensberg et al., 2018) and nurses (Avia et al., 2021; Pratiwi et al., 2021).

Changes in behaviour and opinions mark successful communication stemming from the messages conveyed in communication (Endrejat et al., 2020; Maltinsky & Swanson, 2020; Men et al., 2020). As part of their training, doctors and dentists require empathic communication skills (Choi et al., 2015; Krystallidou et al., 2020; Soeroso & Susuilo, 2008). The degree of effectiveness in communicating is influenced by many things (Budi Setyaningrum, 2018; Chan et al., 2019; Milrad et al., 2019; Önler et al., 2018). An important factor that affects the development of a favourable communication situation is

knowing about communication ethics based on local cultural knowledge (Bassano et al., 2019; Vinyals-Mirabent, 2019; Yeetin & Buakaew, 2018). The values of wisdom contained in local culture become essential knowledge in building practical, constructive, and respectful communication between the speaker and the interlocutor.

Various aspects of local cultural wisdom in communicating are regulated in a speech pattern called *Langgam Kato Nan Ampek* (four etiquettes of polite speech in Minangkabau society). The *Langgam Kato Nan Ampek* style is an ethical principle in local culture that regulates one's vocabulary by considering aspects of linguistic politeness (Brown, 2015). Human decency can be taught through language (Kádár & House, 2021; Ramos-González & Rico-Martín, 2015; Xiang et al., 2020). These ethical principles are sourced from the local cultural wisdom of the Minangkabau community, located in West Sumatra (Kahn, 2020). Speaking by the etiquette of Minangkabau culture builds a polite relationship between the speaker and the interlocutor because it helps to deliver a good service (Rahmi et al., 2018; Siby, 2019; Yuspita, 2021). In addition, a relationship based on politeness in communication situations has a positive, constructive impact on maintaining the self-esteem of individuals. *Langgam Kato Nan Ampek* addresses the communication effect which occurs during the communication process.

Local cultural communication knowledge is regulated by a speech pattern called *Langgam Kato Nan Ampek* (etiquette for polite speech in Minangkabau society). The *Kato Nan Ampek* style consists of four rules for communicating with another person, considering the speaker's position and social strata (Arsih et al., 2019; Efrianto & Afnita, 2019; Yelfiza et al., 2020). The first rule is the ethics for speaking when the interlocutors are from different social strata. This first rule in the etiquette is *Kato Mandaki* (speaking etiquette that uses a vertical nuanced sentence structure for the interlocutor to show respect to the other person). The second rule is *Kato Manurun* (using a command sentence structure respectful of the other interlocuter). The third rule is *Kato Mandata* (where there is an equal relationship between the interlocutors). Fourth, speaking ethics for interlocutors in similar social positions but respecting each other in terms of intimacy and kinship, namely *Kato Malereang* (communicating ethics using symbolic sentence structures or connotative meanings to others). These four patterns of speech etiquette originating from the rich local culture in West Sumatra, one of the provinces in Indonesia, were introduced to students of the dental faculty at Andalas University through an effective communication technique learning curriculum. Introducing four ethical speech patterns based on local cultural values for dental students is designed to prepare them to be friendly and patient-friendly in their dental practices. In addition, internet-based communication teaching methods are intended to prepare humane dental candidates for their workplaces.

Studies related to learning local culture have addressed three areas of study. The first area is research describing local cultures on the verge of extinction (Krasoń, 2018; Lee et al., 2019; Schwartzman et al., 2021; M. Zhu et al., 2020). The second is transmitting local culture through the media for revitalisation (Ghermandi et al., 2020; Liu et al., 2019; Lycett, 2019). Third, research on strategies for teaching local culture in primary and secondary schools (Q. Guo et al., 2020; Liu et al., 2019; Toledo-Sandoval, 2020; Wernholm & Reneland-Forsman, 2019). However, in this literature, there is no research on how local culture can be transmitted to dental students as a basis for their communication skills. The gap is research on how to develop sensitivity to local culture for dentistry students and how it builds an ability to establish good communication between the dentist and the patient.

This article aims to fill the gaps in previous research on the potential value of teaching local cultural values to dental students. Specifically, this study is intended to answer three critical questions. First, how is the concept of *Langgam Kato Nan Ampek* transmitted in dental student learning? Second, what are students' reactions to local cultural teaching materials, especially regarding *Langgam Kato Nan*

Ampek? Third, what are the implications of these student responses to using *Langgam Kato Nan Ampek* in the learning process at the faculty of dentistry? The answers to these three questions will explain the relationship between knowledge of local cultural values, especially *Langgam Kato Nan Ampek*, and dental students' receptiveness to embracing local cultural values.

2. Methodology

This article aims to fill the gaps in previous research on the potential value of teaching local cultural values to dental students. Specifically, this study is intended to answer three critical questions. First, how is the concept of *Langgam Kato Nan Ampek* transmitted in dental student learning? Second, what are students' reactions to local cultural teaching materials, especially regarding *Langgam Kato Nan Ampek*? Third, what are the implications of these student responses to using *Langgam Kato Nan Ampek* in the learning process at the faculty of dentistry? The answers to these three questions will explain the relationship between knowledge of local cultural values, especially *Langgam Kato Nan Ampek*, and dental students' receptiveness to embracing local cultural values.

Learning local culture is a strategy that can build human cultural sensitivity in communicating with other people. The relationship between local cultural education and dental students' ability to communicate empathetically as the research object was chosen for three reasons. The first reason is that the lack of learning about local culture has resulted in an ever-diminishing awareness of ethics and regional identity. Ethical values and courtesy in local culture are needed to build empathetic communication. Second, little attention has been paid to analysing the relationship between learning local cultures and improving empathic communication skills in dental students. While the research shows various values in local culture, it does not address how significant they are for empathic speaking skills for millennial students. Third, it is necessary to assess the importance of learning local cultural values given its considerable potential for learning to speak politely by local etiquette. Finally, etiquette in speaking is fundamental in building empathic communication skills for all dental students. These three reasons indicate that an intimate understanding of the relationship of local cultural learning with dental students' ability to establish empathetic communication is an important and urgent issue. It should be understood as providing a basis for policy development in teaching local cultures through dentistry curricula in universities worldwide.

2.1. Research design

The design of this research is qualitative. The research object is dental students' receptiveness to local cultural learning materials to improve empathetic communication skills. This research was conducted in Indonesia, principally at Andalas University, based on a sample of ninety-six students from the faculty of dentistry who had participated in the empathetic communications learning process in the second half of 2021. The faculty of dentistry has designed a learning curriculum for students structured in blocks of learning. Each block contains valuable materials to prepare them as dentists. For example, block 1 relates to effective communication techniques and includes an introductory lecture, "Effective Communication across Local Cultures."

The local culture taught is Minangkabau's because the faculty's location is in the province of West Sumatra in Indonesia. Data collection was carried out twice. The first survey was carried out before the teaching of local culture was carried out. Then, after learning about the local culture, the survey was repeated one more time. Survey activities take place online through a questionnaire created on the google form. The analysis of the survey results explains the relationship between local cultural learning and students' responses and receptiveness to using local cultural materials in communicating. The primary source data is dentistry student response sentences collected through a google form

application. Secondary source data comes from the literature that addresses and explains the principles of *Langgam Kato Nan Ampek's* principles and other relevant data.

2.2. Sample and data collection

The research data comes from surveys of dentistry students' responses while studying local cultures to build communication skills using *Langgam Kato Nan Ampek* materials in block one. Online questionnaires using google forms were distributed to students before and after learning was completed. In addition, students' active discussion activities were used to supplement the data from the survey results during the online learning process. The richness of literature associated with *Langgam Kato Nan Ampek* is the basis for this research.

2.3. Analysis of data

Research on the relationship between learning local cultural values related to communication ethics, especially about *Langgam Kato Nan Ampek*, and dentistry students' responsiveness to becoming humanist doctors was done in two stages. First, the primary data collection stage was collected through online surveys using the Google Form application in the first stage. The survey was conducted twice before the online learning process began and after completion. Second, the secondary data collection stage was done by studying the literature related to principles and materials on the *Kato Nan Ampek* language in the local culture of the Minangkabau people. The study participants were ninety-six first-year dentistry students. Comprising twenty males and seventy-six females. The study participants are described in more detail in Table 1 below.

Table 1. Respondents characteristics

Respondent category	Female	Male	(N)		
Gender	76	20	96		
Age	17	18	19	20	(N)
	19	53	23	1	96
Origin of ethnicity	Minangkabau		Non- Minangkabau (N)		
	66	30	96		

Various categories of data, sourced from literature and interview data, provided the basis for the analysis. The analysis explored the relationship between learning local culture in communication techniques based on local cultural values and dental students' responsiveness to empathetic communications training. The data analysis process took place in three stages and used two techniques

The first stage is data reduction, to organise the data more systematically, especially in a textual thematic way. Second, displaying data to present research results in tables and interview excerpts. Third, the data verification or inference stage mainly shows the data trends. The data processed in these three stages were analysed using descriptive and content analysis. Content analysis techniques were used to interpret and understand the data obtained from interviews with students in class. Library resources were used to describe and understand the relationship between knowledge of the ethics of *Langgam Kato Nan Ampek* and students' responsiveness to becoming humanist dentist candidates.

Finally, the analysis and analytical techniques stages allow conclusions on the relationship between knowledge of communication ethics based on local wisdom values and students' skills to become humanist dentists.

3. Findings

The transmission of knowledge about the principles of *Langgam Kato Nan Ampek* to dentistry students has had a significant impact on dentistry students' communication abilities in general. Using the *Kato Nan Ampek* language, the increase in communication knowledge can be seen in three forms. First is the enthusiasm of dentistry students in listening to learning materials about *Langgam Kato Nan Ampek*. Second, students' high responsiveness to local cultural materials, especially *Langgam Kato Nan Ampek*. The third is the high level of respect and its implications for the quality of students' empathy for local culture. These three facts are discussed in detail in the following sections. Before these three aspects are described in this paper, the results of a preliminary survey are presented relating to students' knowledge of the local culture, which is beneficial to communication styles. Ninety-six students answered initial questions about their knowledge of local culture, as shown in Figure 1 below.

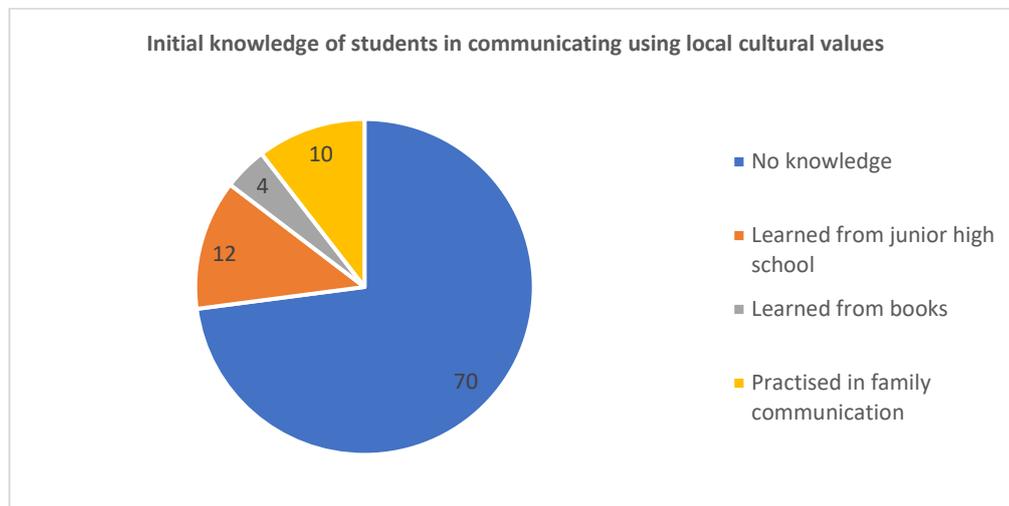


Figure1 Dental students' initial knowledge of local culture to communicate

Figure 1 shows dental students' initial state of knowledge about communication ethics sourced from the local culture. Most seventy students did not know the principles of building effective communication based on local cultural ethics. Twelve students claimed to have known the material from lessons at Junior High School. Ten students replied that they had already known the ethics of local culture-based communication from reading textbooks. The remaining four students claimed to have been accustomed to practising communication ethics based on local cultural values in their family communes. The results of this initial survey seem quite concerning as to the lack of student knowledge of local culture and its relationship to building good, well-mannered and practical communication.

3.1. Dentistry students' receptiveness to empathetic communication based on *Langgam Kato Nan Ampek*

Local cultural material about *Langgam Kato Nan Ampek*, as the basis for sensitive and effective communication, was transmitted to dental students using zoom meetings as the e-learning media. The e-learning learning method was used because of the COVID-19 pandemic. First, the lecturer explained the material in the *Langgam Kato Nan Ampek*. Table 2 below describes the material for effective

communication, which references the principles of local cultural values, especially the *Langgam Kato Nan Ampek*, an essential part of the learning process.

Table 2. Local cultural teaching materials to build dental students' communication skills

Learning Outcome	Subject matter	Topic	Meaning
Good communication skills	Basic communication science		
Respects the patient's cultural background	Introduction to local culture		
Values locality in building communication	Principles and ethics of communication-based on local culture	Style of <i>Kato Nan Ampek</i>	Four etiquettes for polite speech in Minangkabau society
Communicates empathetically and humanely	Speech etiquette is based on age and social strata according to local cultural values	<i>Kato mandaki</i>	Words from the bottom up
		<i>Kato manurun</i>	Top-down words
		<i>Kato malereang</i>	Flat words but nuances of mutual respect
		<i>Kato mandata</i>	Horizontal word

Table 2 shows the material taught to dental students in Block 1. One of the four modules in Block 1 covers Communication Ethics and Cross-Cultural Communication in Minangkabau culture. The material presented in Table 2 relates to these two modules. When raised by the lecturer, all students appeared enthusiastic about listening to these two areas, even though the material on local culture was not included for the leading dentistry group. Students' enthusiasm could be seen in all ninety-six students, always or almost always were in the on-video mode during the learning process. Only six students were sometimes in the off-video mode. This phenomenon shows that students' interest in local cultural materials is significant. Figure 2 below shows students' seriousness in listening to the presentation of material about *Langgam Kato Nan Ampek*. In figure 2 below, the lecturer explains *Langgam Kato Nan Ampek* to the students.





Figure 2. The enthusiasm of students learning the material *Langgam Kato Nan Ampek*

In Figure 2, on-screen one at the top left, one of the students appears off video. However, in-screen two on the top right and screen three on the bottom left, all students listen to the material in the on-video mode. But in-screen four at the bottom right, five students are in the off-video mode. Thus, ninety dental students could be closely observed during the *Langgam Kato Nan Ampek* material presentation. The six people in the off-video mode are indicative of -video behaviour which has become an interesting phenomenon in the new styles of online learning during the pandemic. When the video is turned off, they only display their name, photo, and zoom account identity. As a result, these students' activities cannot be monitored. However, this off-video phenomenon can also be caused by poor network quality when a screenshot of attendance photos is carried out. Students being in the on-video and off-video modes can be directly related to *Langgam Kato Nan Ampek* as one of the ethics of speaking in local culture.

3.2 Dentistry students' responses to *Langgam Kato Nan Ampek*

The positivity of students' responses to the *Langgam Kato Nan Ampek* material in the Block 1 learning process for dental students is very high. The reactions of dental students to local culture, which are an integral part of building practical communication skills for aspiring dentists, were also obtained from the interviews. As stated above, this study found that millennial students need to learn about local cultural wisdom. Table 3 below shows that 93.8% of dental students think the local cultural material transmitted to them is essential. The rest, 6.2%, believe that transferring knowledge about local culture that focuses on *Langgam Kato Nan Ampek* is very important.

Table 3. Positivity of student responses to local culture

Question	Not important	Important	%	Very important	%	(N)	%
Do you need knowledge of local cultural	0	6	6.2	90	93.8	96	100

In Table 3, it can be seen that there all students think that the transmission of communication knowledge based on local cultural wisdom is necessary. Ninety students believe that knowledge derived

from local culture is of fundamental importance. The rest, six students, considered that this knowledge is essential.

The different narrative responses of dental students were collected through online interviews. The online discussion was guided by a list of questions packaged through the google form application. Ninety-six narratives of dentistry students were collected to examine students' responses to the relevance of local cultural values in building communication in the millennial era. The interview narratives were organised thematically and categorised. Three categories emerge from these dental students' answers. The first category is answers which can be directly correlated with the dental profession of the future. The second comprises answers related to social relations. The third category is answers related to other aspects, such as community themes such as friendship, cultural identity, and cultural heritage. Figure 3 below describes the students' answers' three types of narrative qualities.

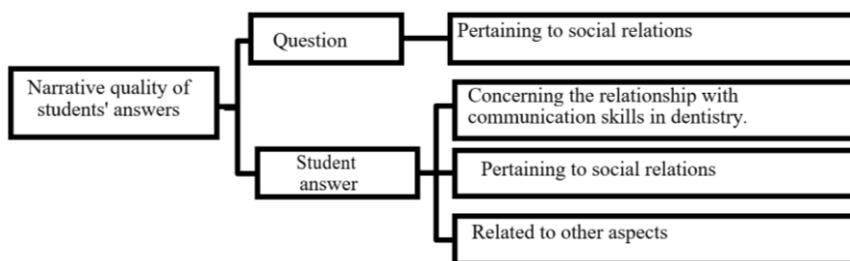


Figure 3. Category of student answers about teaching *Langgam Kato Nan Ampek* as an aspect of local culture in the millennial era

The three categories of student answers presented in Figure 3 show various positive student responses to gaining knowledge of communication ethics based on the *Kato Nan Ampek*. The instructional videos included in this study evidence these positive student responses (available at <https://drive.google.com/drive/folders/1g9l8ygmzsQ9FjOyprAiDZHmlsYE7q2Sm?usp=sharing>).

3.3. Cultural intelligence must color interdisciplinary education

The transmission of knowledge of communication ethics based on local cultural values significantly influences enhanced dental students' learning to become humanist dentists. Communication ethics in the *Langgam Kato Nan Ampek* principles affect students' communication knowledge as dentist candidates. The *Kato Nan Ampek* style of speaking regulates how a speaker speaks to an interlocutor by considering social position and strata (Arsih et al., 2019; Efrianto & Afrita, 2019; Yelfiza et al., 2020). Four ethics can be applied to communication.

First is a speaker's ethic of being lower in the socio-cultural structure than the interlocutor's. The ethics contained in this relationship are regulated by using *Kato Mandaki* (words from the bottom up). Second is a speaker's speaking ethics, where the speaker is higher in the socio-cultural structure than the interlocutor. The ethics contained in this relationship are regulated by using *Kato Manurun* (top-down words). Third, there is the ethic of speaking to interlocutors on the same socio-cultural stratum. This relationship is governed by *Kato Mandata* (horizontal words). Fourth is the speaking ethic to show a respectful relationship between the speaker and the interlocutor, even though they are the same age, and is found in *Kato Malereang* (flat words but nuances of mutual respect). Dentistry students could understand the four types of speech etiquette by studying local culture materials in Block 1. This knowledge of the *Langgam Kato Nan Ampek* is one aspect of local Minangkabau culture that positively influences human behavior shown in the sample group of dental students.

Figure 3 shows that all dental students positively responded to speech etiquette knowledge based on the *Langgam Kato Nan Ampek*. As noted earlier (see Table 1), the sample of dentistry students includes thirty students who do not have a Minangkabau cultural background and come from Indonesia's Batak, Makasar, Javanese, and other ethnic groups. Therefore, only sixty-six students are Minangkabau. Nevertheless, based on the two data in the two tables, it can be stated that dentistry requires this knowledge about local wisdom values. Thus, understanding communication etiquette based on *Langgam Kato Nan Ampek* can significantly enhance their communication skills as future dentists

4. Discussion

4.1. Improved culture-based intelligence for effective communication

This study shows that there has been an increase in dental students' knowledge about practical communication ethics based on local cultural knowledge. Introducing knowledge about *Langgam Kato Nan Ampek* as an aspect of local culture in Indonesia triggers students' sensitivity to building functional, polite, and constructive communication skills. Increased students' knowledge of local cultural materials was linked to their responses. First, the enthusiasm of students to listen to the *Langgam Kato Nan Ampek* material was very high. Figure 2 shows that ninety students use video mode while only six do not use video mode when the screenshot is complete. Shows students' seriousness and curiosity towards communication techniques based on local cultural ethics. Millennial-age dental students, who are digitally literate and tend to follow popularly and even cosmopolitan tastes, remain enthusiastic about learning about local culture. Second, the positivity of student responses to local culture is very high, as shown in Table 3.

The data in Table 3 shows that 93.8% of students have a high level of positivity in their response to the knowledge of *Langgam Kato Nan Ampek* as a basis for fostering effective and polite communication in the future workplace. However, for 6.2% of the students, local cultural wisdom is still essential to building practical communication skills. This data indicates that design learning method for local cultural heritage is very much needed for millennial students, as seen in this sample of millennials. The design of learning local culture that is attractive and presented thoughtfully is essential to building a sustainable relationship between the millennial generation and local cultural knowledge.

Third, in terms of narrative responses, there are three groups in terms of student opinions about the process of transmitting knowledge of *Langgam Kato Nan Ampek* in the learning curriculum. Those in this first group, which comprise the majority, view that fostering communication as a future dentist requires knowledge of communication techniques that rely on local cultural wisdom.

This fact shows that dental students are cognisant of the need for knowledge of local culture, especially *Langgam Kato Nan Ampek*. The second group believes that understanding communication ethics using the principles of *Langgam Kato Nan Ampek* can create good social relations. The third group considers that when dental students understand communication techniques based on local cultural wisdom, it will automatically impact life's journey. The group also views that learning local culture can create an awareness of the need to build brotherhood, maintain the richness of local culture, and balance the power of foreign cultural flows that enter the homeland. Some even suggest that local cultural heritage should be packaged to appeal to millennials.

4.2. Humanist dentist with communication skills based on local cultural values

Dental students' enthusiasm to learn communication principles based on local culture is linked to an awareness of the need for empathic communication skills. Their strong awareness of learning

communication techniques by paying attention to local cultural values reflects their desire to become humanist dentists. Dentists must cultivate politeness in communicating to establish good interpersonal relationships (Al-Hemiary et al., 2020). The relationship between the dentist and the patient, the patient's family, and other health workers in the work environment will contribute to overall patient care. This good relationship is also the basis of a doctor's professionalism (Freudenreich & Kontos, 2019; Rieffestahl et al., 2021; Shaw et al., 2018) and will also impact the dentist's financial and non-financial benefits.

The principle of politeness in communication (Brown, 2015) follows the basics of speaking ethics based on the *Kato Nan Ampek* language. Therefore, speaking etiquette is needed to build good communication and avoid ineffective communication. In addition, excellent and effective communication between these future dentists will reduce tension in social interactions between the dentist and the patient, the patient's family, and other healthcare workers. Therefore, the ethics of communication in the local content, which is transferred to dental students, is an excellent first step to preparing the humanist dentist of the future (Hargraves et al., 2019; Sari, 2014). An important recommendation from these findings is to use innovative learning methods from local cultural materials to improve the empathic communication skills of dental students (Pashkov et al., 2020).

4.3. Cultural intelligence must color interdisciplinary education

This research on applying the principles of communication ethics in *Langgam Kato Nan Ampek* for dental students' communication skills in Indonesia highlights two further considerations. First, creating a broader awareness of using local cultural knowledge or cultural intelligence requires the willingness of higher education institutions to redesign interdisciplinary learning curricula. When cultural intelligence is incorporated into the dental curriculum, institutions will have the opportunity to produce humanist graduates. Second, based on the response of dental students in Indonesia in learning communication based on local culture, it can become the basis for similar study programs at various universities in other places. The policy of making cross-disciplinary curricula is necessary to build student skills at their respective colleges.

So far, the existing research emphasises three things. First, local culture has been declared almost extinct because it does not have a place in the current era (Krasoń, 2018; Lee et al., 2019; D. Zhu et al., 2021). Second, local culture is transmitted through revitalising media (Curcija et al., 2019; Ghermandi et al., 2020; Lycett, 2019). Third, local culture is encouraged to be passed on to younger primary and secondary school students (Q. Guo et al., 2020; Liu et al., 2019; Toledo-Sandoval, 2020; Wernholm & Reneland-Forsman, 2019). These three studies view local culture as an intangible wealth passed down from generation to generation through performing arts and creative media to build human character. This study differs from the three trends above. This study explores the learning process of local cultural wisdom as a source of intelligence to build effective communication for future dentists. Local cultural intelligence has the potential to prepare humane dentists who, in turn, will be able to communicate effectively and politely and have the opportunity to realise financial benefits because of high patient satisfaction. Local culture contributes to the dental education curriculum, as is evident in the Effective Communication Block. Local culture has become a significant ingredient in improving ethical communication skills for future humanist dentists. Therefore, teaching local culture to the young generation is essential with fun techniques such as teaching music to students (Fayez Ismail, 2021).

Two action plans can be formulated based on the high level of positivity of the responses of dental students in Indonesia to learning communication techniques based on local cultural values. Two action plans can be implemented to develop dental students' empathy toward patients, their families, and

other healthcare workers. First, the policy of establishing an interdisciplinary dental curriculum, mainly concerning local culture, is fundamental. Intelligence from local cultural wisdom can contribute to building an empathetic attitude, being polite, maintaining self-esteem, and being very helpful in interpersonal communication. Second, the need for agreement and uniformity of interdisciplinary learning curriculum for dental faculty students depends on local cultural intelligence in each region and country in various dental study programs.

5. Conclusion

This research contributes to the enrichment of the literature on using local cultural knowledge to enhance future dentists' communication skills in several ways. First, it identifies techniques for effective communication based on learning local cultural intelligence for dental students. It argues the importance of knowledge related to communication ethics based on local cultural intelligence for future dentist candidates. Our research shows that students' enthusiasm is very high for learning communication ethics based on the principles of *Langgam Kato Nan Ampek* as an aspect of Minangkabau local culture for dental students. Second, this research incorporates elements of local cultural heritage in the learning process of dental students. Third, our study contributes to the methodological part by offering an essential and unique test to assess the relationship between dental students' responses in building practical communication skills and learning the principles of *Langgam Kato Nan Ampek* as an aspect of local culture.

There are at least two things that need to be developed in future research—first, the expansion of research sites in several universities in various places with dental education. Second, evaluate the ability of dental students to use local cultural intelligence after they commence practising as a dentist. Unfortunately, this study was limited to a small sample, thus not allowing for comparative analysis. In addition, this study was limited to one location and one university. Therefore, comprehensive research is possible only by comparison by using a more extensive and diverse sample. Through these two methods, a more comprehensive sample can be used to provide further data to assess the impact of transmitting knowledge of local cultural intelligence on the readiness of dental students to communicate sympathetically and empathetically to become humanist dentists.

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