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Chapter

Exploring a Culturally-Responsive Model and Theory for Sustainable Development in Education Based on Cebuano Context

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Abstract

This paper explores a culturally-responsive model and theory for sustainable development in education that intertwines a seamless juxtaposition of cultural knowledge, mastery, reflections and understanding, and innovations in the Cebuano context. A multiple case analysis of selected quintains of Cebuano culture in literature reviews, and past travel observations and experiences were used as the methodology of the study. Results revealed that studies on cultural knowledge reflected a Cebuano identity of indigenous worldviews and reverence to nature. Cultural knowledge served as a basis for cultural mastery in the formulation and implementation of government policies as exemplified in the *Bayanihan* to Heal Act, the creation of the Inter-Agency Task Force, and other decisions of government and non-government agencies to protect people's welfare. Cultural reflections ignited how people responded to these policies, with contrasting views and ambivalence. To prevent the furtherance of these views that would heighten possible conflict and violence, cultural innovations through a KRSP Model offers vibrant opportunities to promote and realize ESD Goal No. 4 by 2030.

Keywords: quintain, cultural knowledge, cultural mastery, cultural reflection, cultural innovation, KRSP model, quadrivium theory

1. Introduction

"Black Lives Matter" became a popular mantra among Black Americans after George Floyd died on May 25 this year. This dramatic scene resorted to rallies, looting, and destruction of properties that resulted in violence despite COVID-19 protocols [1]. This racial clamor of assertion reawakens a historical struggle of a cultural divide between the Blacks and the Whites in American history. Racism is crucial to unity, progress, and sustainable development not only in the United States of America but to other countries as well. Come to think of it, are the lives of the whites, the Asians, the Indigenous Peoples, and other races do not matter only because of this mantra? This question challenges racial dominance against racial equality that jeopardizes peace, unity, and sustainable development across the globe during this COVID-19 pandemic. Regardless of race, ethnicity, gender, culture,

and religions, all lives matter for sustainable development. It is through education that this cultural divide polarizes to an end and continuously creates a better world for humanity, guided by the democratic principles of freedom, equality, and the pursuit of human happiness.

How can the institution of education achieve this humanitarian goal? Education can start recognizing the country's most important resource – the human population. It is through education, training, mentoring, seminars, conferences, and workshops that make the human population acquire knowledge [2]. Thomas Malthus in his essay once said: "as the human population multiplies geometrically, food supply increases arithmetically" [3]. This quote may result in a disequilibrium of supply and demand in the market that impacts demographic studies. This demographic situation threatens humanity's existence that touches environmental, public health, socioeconomic, and political concerns vital to sustainable development. Curbing the rising number of human populations by the government is insufficient to provide enough opportunities for a sustainable future.

Historically, during the trying times of war (World Wars I and II), terrorism (religious, state, international) [4], and pandemic (Black Death, Spanish Flu, and now COVID-19), the world has been unprepared to manage sustainability, despite its efforts to maintain peace and order, alleviate hunger, and lighten the people's burdens. Natural upheavals and other forms of disturbances produce tensions to humanity's existence; the chain of poverty and hunger continues, undermining people's safety. Abuse, use of power and competition for supremacy and global dominance is obvious. Struggle for hegemony in global politics and the world market becomes one of the visible culprits on why these upheavals happen, setting back the essence of sustainable development.

One of the 'antidotes' in responding to these disturbing challenges is Education for Sustainable Development (ESD). The United Nations Educational, Scientific, and Cultural Organization (UNESCO) mandates 17 goals for ESD. Among these goals, this chapter limits its discussion to goal number four on quality education that ensures inclusiveness and equitability of quality education and the promotion of lifelong learning opportunities for all [5]. This is one of the targets of ESD by 2030, with an emphasis on cultural contributions [6]. However, the broadness of this goal allows the author to pick 'world heritage sites and local cultural properties' as one of ESD's eight themes, using the principles of tolerance and cultural relativism in the educational system. There is a potential for the Philippines to support this mandate in consonance with the finding of National Commission for Culture and the Arts (NCCA) that education ranked 4th in the executive survey on Filipino values with the essential capacity to ensure a brighter future, learn values, promote human rights, challenge values education, and improve its delivery [7].

This chosen ESD theme narrows down to specific aspects of the cultural properties of a Cebuano worldview that juxtaposes to secret knowledge, collective values and behavior, festivals, and reverence to the natural environment. In these contexts, this paper explores how ESD intertwines a juxtaposition to create culturally-responsive model and theory in the Philippines that may promote inclusive quality education and national identity in the ASEAN region. This goal desires to promote reduction, if not elimination, of racism, prejudice, and other forms of intolerance that creates bigotry and stronger stigma than the effects of COVID-19 pandemic in many parts of the globe. This happens when there is a lack of cultural knowledge, mastery, understanding, and reflections in cultural contexts that hamper creative cultural innovations for sustainable development, as the four important quintains or case conditions of this paper.

2. ESD using culturally responsive innovations or models

During this time of pandemic where it is impossible to conduct face-to-face interviews and observations to gather data, document reviews of literature in referred journals served the primary methods of this paper. A recollection of past experiences and travel observations in some parts of Cebu, before the onset of the pandemic, provided sufficient grounding of the paper. A multiple case analysis of selected document reviews of culture studies and culture-based ESD was used as the primary method in this paper. A multiple case analysis is a comparative method of research that deals with a small number of observations, interviews, and document reviews in a selected quintain or a target collection [8]. Literature scanning in the previous works on culture studies and culture-based innovation in education was archived, analyzed, and contextualized to provide a thorough analysis of this paper. The quintain focused on the paper was a condition studied on how a local culture can be used in enhancing ESD based on NCCA's survey on 19 values of a Filipino.

Ned Hermann's Brain Dominance Theory served as the fundamental framework in the presentation and analysis of the paper. This theory suggested that students can benefit from the teacher's delivery of instruction if lessons effectively stimulate both the thinking (cerebral) and feeling (limbic) parts of the brain [9]. Hence, to observe a vivid contextualization of this theory in the investigated quintain of the paper, **Figure 1** shows the four elements of a culture-based ESD framework.

The first element of the culture-based ESD framework is cultural knowledge (CK). This element refers to the knowledge of facts, concepts, principles, generalizations,

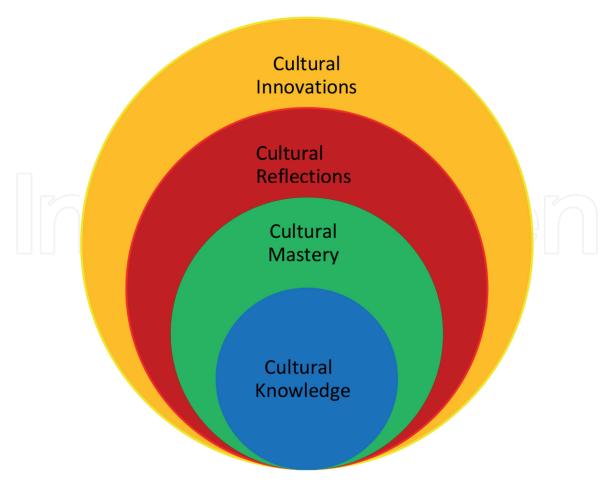


Figure 1.
Elements of culture-based ESD.

and theories on local cultures, which are essential in ESD. The second element is cultural mastery (CM). CM is the repetition of the learned competencies. This is classified into cognitive, fine and gross motor, and appreciation skills. Both the first and second elements emphasize convergent, linear, and objective analysis of cultural quintains. When learners' CK and CM are in place, they are ready to hurdle the third and fourth elements in the framework. The third element is the cultural reflections (CR), which utilizes the understanding and decision-making for further actions. This includes the process of doing integration, collaboration, and revision of what has been learned in the CK and CM. This collaboration requires participation by stakeholders [10]. The framework completes with cultural innovations (CI) as its fourth element. CI includes cultural innovations in the contexts of the languages, traditions, mores, folkways, and other cultural elements and properties in the community. Unlike the CK and CM, the CR and CI emphasize the divergent, cyclical, and creative synthesis of cultural orientations in a specific locality.

2.1 Quintain for cultural knowledge

The dynamics of human society depends on the culture of its people. Issues on gender, race, religion, and diet are avoided when society has an awareness of cultural knowledge. Cultural knowledge (CK) does not only include how people behave and act, but this also includes secret knowledge which is often regarded as taboos in other societies. CK also includes the people's worldviews on how they look at their social environment and the way they respond to it [11]. Concepts of cultural relativism, tolerance, justice, and peace may dispel a wrong understanding of cultural diversity and distorted worldviews when there is a vibrant interplay of education for sustainable development in the community, with the support of other social institutions as well.

2.1.1 The knowledge of Cebu's traditional healing

The indigenous knowledge of *panambal* or healing allows the people of the community to use folkloric modalities and become responsive in using medicinal plants available in the natural environment to heal their illnesses [12–15]. This local culture of healing allows the community to become sustainable and be relieved from expensive medicines in drugstores and hospital services [16]. It also opens various studies on these medicinal plants that exhibit a potential value for laboratory trials by pharmaceutical companies [17], to contribute to the production of medicine and increase business and employment opportunities for community members.

This also promotes tourism development to showcase the culture of *panambal* in the Philippines. **Figure 2** shows the 12 common cultural practices of *panambal* in Cebu, Philippines [16]. *Hilot* is a body massage commonly used by old folks in rural areas. The advent of the spa for stressed individuals promotes *hilot* in most urban areas that make masseurs' life sustainable. *Palina* is fumigation commonly used by faith healers for patients to smell the aromatic smoke of burnt herbs, myrrh, frankincense to relieve pain; and to drive out evil spirits. Vendors earn an income of these materials for *palina*, provide relief on middle-income earners' sickness, and supply Catholic churches for use during masses.

Himolso is a pulse-checking of patients to determine the blood pressure and diagnose ailments so that the *albularyo* (faith healers) can find the necessary herbs and plants to treat them. *Palakaw* is a petition for healing used by the *albularyo* to implore the spirits to heal patients. *Pasubay* is a diagnosis of ailments and its possible means for cure [16], utilizing *himolso*, viewing crystals, card reading, rituals, and psychic powers. *Tutho* is a saliva-blowing at the head of the patient; while the *tayhop*



Figure 2.Traditional healing practices in Cebu [16].

is a gentle-blow of the affected part of the patient's body to experience relief of pain. *Tuob* is a steam inhalation commonly used in rural areas to treat colds, cough, fever, and influenza using herbs, spices, and salt in a boiling pot. *Pangalap* is the searching of the medicinal herbs and plants for the intended *palina*. *Albularyo* uses the roots, leaves, bark, and juices of these medicinal flora for healing. *Pabukal* is a decoction of herbal plants [12], which will be served as a traditional tea that provides a catharsis of pain. *Orasyon* is the mystical prayers of the *albularyo* with God or with the spirits of the underworld to grant healing.

Hikay is a feast to please the spirits of nature or offer thanksgiving to the souls of the departed ancestors to protect family members from harm. Hikay is also used to heal one's ailment after having offended with any spirit of nature in a form of hikayan (a ritual celebration) such as harang (ancestor worship); huhat silung (ritual for good fortune and thanksgiving for abundant harvest); tigpo (atonement of sins of the spirits of the underworld); sagangsang (ritual for abundant wine); damit (ritual for abundant harvest); balangkisaw (ritual for atonement after having offended with the spirits of the water gods); and bug-os or pamisa (offering for the souls of the departed) using puso (cooked rice in pouches) [18]. Figure 3 shows the six designs of puso used during the hikay celebration [18–21].

Figure 3 visualizes the six types of rice pouches used during the *hikayan* or *offrenda* celebration – an animistic ritual offering. Native animism is a belief that post-mortals being depended on sacrifices offered up by the living [22]; and the belief that the materialistic and the spiritual worlds remain inseparable [23]. These rice pouches are offered to the spirits of the underworld to provide farmers with an abundant harvest, safety from natural calamities, healing their sickness, achieving a healthy and abundant life, and fulfillment of their dreams. *Binaki* (froglike shape) and the *Manan-aw* (blooming phalaenopsis) represent a replication of the beauty of nature. These pouches are offered with great intentions of healing and for a successful harvest. *Binosa* (shot glass shape) and *Tinigib* (chisel-shape) symbolize the perceived utilitarianism in the ritual offering for the success of the *hikayan*. *Badbaranay* (wadlike shape) and the *kinasing* (heart-shape) are used for self-glorification in union with the spirits of nature. These pouches represent the intimacy of man, nature, and spirit.

The recent NCCA survey that ranked 8th on health and wellness among the 19 values of a Filipino [7] reflects the 12 traditional healing practices of a Cebuano.

2.1.2 Knowledge of Cebuano collective behavior and act of kindness

Another lens to look into cultural knowledge is examining how people behave and act in the community during good and bad times. **Figure 4** mirrors this lens into five Cebuano cooperation practices known as TAYTU (*tagay, alayon, yayong, tambayayong*, and *unong*) [24]. The friendliness and gregariousness of everybody prove that they are not in isolation. As part of social culture, Cebuanos are sensitive and cooperative to other's needs.



Figure 3.
Six Puso designs.

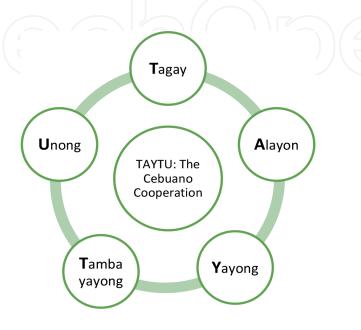


Figure 4. *Cebuano cooperation.*

Either in good times or in bad times, *tagay* (social drinking) is a refuge of *barkada* (friends) to share their emotions either for comfort or for fun. This Cebuano culture survives with time and it is sustainable. Before, *tangero* (drinkers) used *hungot* (smoothened coco shell) as a local shot glass to be shared among the members of the spree on the porch or at the corner. As time evolves, bars provide several shot glasses, i.e. one glass for each drinker to use to prevent viral infection. Regardless of the time, drinkers share their successes, fears, pains, and failures to seek comfort and piece of advice over a bottle of beer or wine matched with a *pulotan* (appetizer) and a *kantahan* (singing).

To speed up the task at hand, the Cebuano people engage with an *alayon* (working as a team). In rural areas, farmers do *alayon* on the farm among each member of the team. Their survival depends on the efforts of others [25]. They decide to participate in the *alayon* and work cooperatively on the farm for a week; take turns working on another farm for the succeeding weeks until they finish or decide to have another *alayon* cycle. *Yayong* is an act of helping each other by lifting a heavy object, fetching water, changing tires, and doing laundry. This act of kindness extends to help the person during the time of crises like the death of a loved one, loss of a job, and easing of someone's burden.

When yayong is extended to several members of the family, friends, and members of the community, it becomes a tambayayong (a collective effort) to make the community more sustainable and achieve development. The fishermen in the coastal areas of Cebu use tambayayong in casting nets for fishing and by pulling these nets with heavy loads of catch on the shoreline. When yayong becomes well-established, an individual is ready to help others. This act of kindness is called unong. This unong is more than the act of sympathy, but empathy extended during wake and burial to the families of a departed loved one. Unong is extended to people who are victims of natural calamities and human atrocities in a form of donations and other humanitarian services to alleviate their suffering. Unong also includes the support extended to welfare homes for the aged, child-care centers, correctional centers, street families, street children, persons with disabilities (PWDs), and other minority groups. Generally, TAYTU is reflective with pakikip-agkapwa (social relations) that ranked 3rd in the national survey of Filipino values, which includes Bayanihan (cooperation), empathy, reciprocity, and hospitality [7].

2.1.3 Knowledge of Cebuano cultural festivals

In the NCCA survey of Filipino values, culture, arts, and sciences ranked 9th among the 19 Filipino values [7]. This means that the expressions of the Cebuano festivals shape their soul and identify as a Filipino. The province of Cebu is the most highly celebrated in the Philippines because of her 32 known festivals among the 44 towns and six component cities. A festival is a celebration of a particular event with the maximum participation of everybody in the community [26]. **Figure 5** shows the distribution of the 32 celebrated festivals with five types: environmental (38%), socio-anthropological (25%), economic (22%), historical (9%), and religious (6%) reflect cultural gratitude and pride. **Tables 1–5** present the origins of these festivals.

The cultural knowledge of festival celebrations in Cebu is reflective of the experiences, stories, and folklore of the 32 towns and cities covered in the study. As shown in **Table 1**, the festivals with environmental origins have greater convergence in the south and eastern part of the province, which constitutes 38% among the over-all festivals celebrated annually. This implies that Cebuano festivals in the studied locations have greater animistic beliefs and traditions, reflective of their experiences and interaction with the environment. This connection between man and nature creates a profound intimacy that promotes Cebuano cultural identity

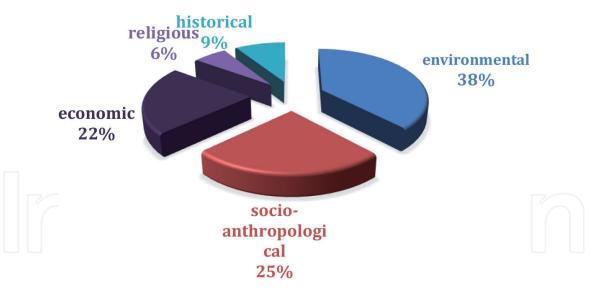


Figure 5.Origins of cultural festivals.

Towns & component cities	Location	Origin
Cebu City	East	Sulog (water current)
Borbon	Northeast	Silmugi River
San Francisco, Camotes	Northeast	Soli-soli (grass)
Carcar City	Southeast	kabkab (native fern)
Mandaue City	East	Tawi (grass)
Aloguinsan	Southwest	Kinsan (a type of fish)
Barili	Southwest	Uma (farm)
Cordova	East	Dagat (sea)
Alcoy	Southwest	Siloy (black shama)
Sibonga	Southeast	Bunga (fruit)
Boljoon	Southeast	Bolho (water sprout)
Alegria	Southwest	Kawayan (bamboo)
	Cebu City Borbon San Francisco, Camotes Carcar City Mandaue City Aloguinsan Barili Cordova Alcoy Sibonga Boljoon	Cebu City East Borbon Northeast San Francisco, Camotes Northeast Carcar City Southeast Mandaue City East Aloguinsan Southwest Barili Southwest Cordova East Alcoy Southeast Sibonga Southeast Boljoon Southeast

Table 1. Festivals with environmental origins.

and pride. For instance, the Siloy Festival of Alcoy is a depiction of pride of the town's locally known siloy or a songbird Black Shama (*Copsychus cebuensis Steere*), as an avian species found only in Cebu, Philippines. Cebuanos in the southern part of Cebu exhibit their profound dependency and cultural gratitude with nature. The various *bolho* (water spouts) of the town of Boljoon provides an abundant supply of freshwater from springs and falls for domestic use. The bounty of nature from the harvest of the *umahan* (farm) and *bunga* (fruits) from orchards makes the towns of Barili and Sibonga one of the 'vegetable and fruit baskets' in the province. Cebu is not only known for farm abundance, but the *dagat* (sea) also provides Cebuanos with rich marine resources like the *bakasi* (eel); and *kinsan* (fish) in the towns of Cordova and Aloguinsan [27].

Trees and grasses shape the identity of the cities of Mandaue and Carcar and the towns of San Francisco and Alegria. The name Mandaue is derived from *tawi*, a Banyan tree from a Ficus family. This tree provides shades for fisherfolks to trade with their catch with farm products on the coast. Carcar is also derived from *kabkab*

Festivals of Cebu	Towns and component cities	Location	Origin
Toslob	Oslob	Southeast	Toslob (plunging into the sea)
Hinulawan	Toledo City	West	Hinaguan (fruits of labor)
Palawud	Bantayan	Northwest	Lawud (deep sea fishing)
Kabuhian	Ronda	Southwest	Kabuhian (livelihood)
Hinatdan	Ginatilan	Southwest	Hatud (an act of good service)
Karansa	Danao City	Northeast	Karansa (dancing in merrymaking)
Sinanggiyaw	Dumanjug	Southwest	Sinanggiyaw (planting & thanksgiving)
Halad	Talisay City	Southeast	Halad (offering for thanksgiving)

Table 2. Festivals with socio-anthropological origins.

Festivals of Cebu	Towns & component cities	Location	Origin
Sarok	Consolacion	Northeast	Sarok (farmer's hat)
La Torta	Argao	Southeast	Torta (sponge cake)
Pintos	Bogo City	Northeast	Pintos (a local delicacy)
Tagitab	Naga City	Southeast	Tagitab (electrical light)
Budbod	Catmon	Northeast	Budbod (millet suman)
Utanun	Dalaguete	Southeast	Utanun (vegetables)
Tostado	Santander	Southeast	Tostado (local cookies)

Table 3. Festivals with economic origins.

Festivals of Cebu	Towns & components cities	Location	Origin
Tag-anito	Tudela	Northeast	Anito (spirits)
Kabanhawan	Minglanilla	Northeast	Banhaw (resurrection)

Table 4. *Festivals with religious origins.*

or kabankaban (Drynaria quercifolia Linn), an epiphyte that grows within the branches and trunks of trees [28]. Kabkab enhances natural beauty and provides lush canopies to shade farmers and fisherfolks in trading their products. The importance of soli-soli (Typha latifolia) in San Francisco [29], and kawayan (Bambusa vulgaris) in Alegria recognizes the importance of these grasses, as primary materials for the weaving of bags, baskets, mats, hats, and pouches for local industries.

Recognizing the importance of rivers for trading is unquestionable in history. The Silmugi River of Borbon and the Rivers of Guadalupe and Pahina Central remind the residents of the place of the importance of these rivers to agriculture and trade. The vibrance of the economic life of the Cebuano reflects the *sulog* (current) of water, as they perform annually the grandest celebration of the country – the Sinulog Festival in honor of the Señor Santo Niño de Cebu, for bequeathing His abundant blessings [30].

Table 2 shows the festivals in southwestern and northeastern Cebu with socioanthropological origins. The Cebuano in these towns and cities exhibit reliance on

Festivals of Cebu	Towns and component cities	Location	Origin
Haladaya	Daan Bantayan	Northeast	Haladaya (victory offering)
Kadaugan	Lapu-lapu City	East	Daug (winning for victory)
Tagbo	Poro, Camotes	Northeast	Tagbo (to meet)

Table 5. Festivals with historical origins.

the bounty of nature. The bounty of marine life makes the fisherfolks of Oslob engage in *tuslob*, plunging into the waters either to catch fish or to swim. This is a similar version to the fisherfolks' mundane life on the island of Bantayan as they perform the *palawud*, sailing to the *lawud* (deep seas), looking for a bountiful catch. To meet both ends, the residents of Ronda find ways to survive by relying on their *kabuhian* (livelihood) through farming, fishing, and craft industries. Success in these endeavors is celebrated by the residents of Dumanjug in their *sinanggiyaw*, a celebration of good planting and copious harvesting. The *sinanggiyaw* proves the feasting celebrations of the early Filipinos during planting and harvesting seasons [31, 32].

The resilience of the Cebuano mirrors their *hinaguan*, the golden achievement of success as the residents of Toledo City perform their Hinulawan Festival. The jovial celebration equates to the cheerful celebration of *halad* (offering) by the residents of Talisay City as they showcase their annual Halad Festival. With a joyful mood, the residents of Danao City dance the *karansa* (thrilled dancing) to celebrate the success of the city's local industries. The residents of Ginatilan celebrate a remarkable value of *hatud* (an act of good service) by which *hinatdan* (being given) the town got its name [33]. This is a festival of cultural gratitude and service without cost during times of need.

Table 3 shows 22% of Cebu's festivals with an economic origin. A greater slice of this percentage related to cuisines. Pastries represent a very important aspect of food culture. "Recognizing the story of native foods is a story about history, ecology, and culture that extends well beyond the dining table [34]." This quote reflects how Argao, Santander, and Catmon become proud of their origin as a town. Food becomes the ethnicity marker of a place i.e. used to express affection and demonstrate power and authority [35]. The delicious *torta* (sponge cake) of Argao marks the town's identity in the South. Santander's *tostado* (local cookies) marks the town's reputation as one of its local brands. Native delicacies of the north attract locals and tourists alike too, as Catmon showcases the traditional *bubod* (suman) made of *kabog* (millet) wrapped and cooked with banana leaves. Few kilometers away from Catmon is the city of Bogo, where *pintos* (a local delicacy) made of grated young corn, mix with milk, and sugar, wrap with flesh inner pericarp of corn.

Part of earning income by the residents of Consolacion is the weaving of a traditional farm hat known as *sarok*. This industry reflects the ingenuity of the townsfolks to use dry leaves of bananas and bamboo strips [36, 37]. Farm yields are indicators of sustainable development. The town of Dalaguete showcases its *utanun* or vegetables as a 'vegetable basket' in the south. Naga City, one of the industrial zones in Cebu, recognizes *dagitab* (electrical lights) as these continue to shine through the years symbolizes the existence of the National Power Corporation (NPC) plant in the city for more than two decades, giving its dedicated service to the Cebuano people.

Table 4 shows 6% of Cebu's festival with religious origins. The intimate connection and reverence of Cebuano to nature before the arrival of the Spanish

conquistadores reflects a renaissance of the Tag-anito Festival of Tudela. Cultural gratitude of all the favors granted by the spirits of nature (anitos), the residents of Tudela perform the *tag-anito*, a prayer of thanksgiving in festive dancing, and rejoicing. One Castillan heritage that Cebuano Catholics of Minglanilla practice during the Easter celebration is the *kabanhawan*. This festival celebrates the resurrection of the crucified Christ meeting His mother, Mary. This festivity symbolizes the renewal of Cebuano from the bondage of sins.

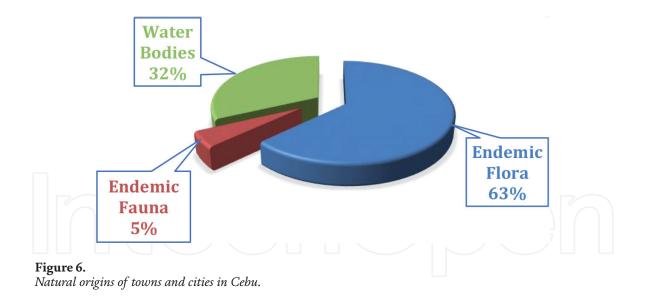
Table 5 shows the Cebuano festivals with the historical origin. During the pre-colonial times, the residents of Poro, Camotes practiced *tagbo*, which means to meet. This scene manifests the value of reconciliation to settle the tribes' differences on the island. The celebration of victories for defending the territories against the enemies and colonizers is one of the traits of a Cebuano. The *haladaya* (celebration of victory) of Daanbantayan from pirates and the *kadaugan* (victory) of the island of Mactan by chieftain Lapu-lapu in 1521 demonstrate the heroic acts of the Cebuano.

2.1.4 Knowledge on the natural origin of some towns and cities of Cebu

Before the arrival of the Spaniards in 1521, the ancestors of modern Filipinos named their towns and villages with names of everything in the natural environment. Five cities and nine towns in Cebu named after the names of endemic flora and fauna; six named after specific water bodies and its characteristics [38]. This worldview implies a Filipino intimacy and reverence with nature, closely similar to other Southeast Asian neighbors. Early Cebuano adored spirits of nature, worshipped the sun, the moon, and the stars [39]. A 37% of the 51 towns and cities of Cebu derived their names from the bounty of nature. A presumption that 63% of these towns and cities changed their names during the Spanish occupation in the province either by force or consent with the Spanish authorities under the bastion of Christianity.

The changes of these names of the 63% of towns and cities in Cebu were obvious replications of the names of some provinces in Spain like Asturias, Compostela, Toledo, Santander, Cordova, Tudela or naming these places based on names of saints like San Francisco and San Fernando with a historic and religious sense [38]. However, the remaining 37% retained their old names as shown in **Figure 6** either because the Spanish officials never had the interest of changing it or the Cebuano fought for its retention because of its anthropologic value, the pride of place, and sentimentality. **Figure 7** shows the three classifications of the origins of towns and cities in Cebu. Five cities and seven towns have 63% origin with endemic flora. Bogo City is derived from a bogo (Garuda floribunda) tree, which served as a trading center with traders coming from the islands of Bantayan and Masbate. Carcar City got its name from kabkab or kaban-kaban, a local fern found abundant in the lush vegetation of tropical Cebu [28]. This epiphyte grows within trunks and branches of trees. Naga City is derived from naga or narra (Pterocarpus indicus) tree [40]. The town folks name the place because of the available narra tree in the early times. The characteristics of this hardwood are essential in the production of durable pieces of furniture.

As mentioned in the Mantawi Festival, the name of Mandaue city is also derived from a *tawi* tree that commonly grows in the coastal area. The *magtalisay* (*Terminalia catappa*) is a very important tree where the City of Talisay's name is taken [41]. The abundance of this tree that grows on the coast provides shade for fishermen to trade their catch, and for the residents who spend time swimming during holidays and other special occasions. The town of Argao comes from *sali-abgaw* (*Premma vestilla*) [42], which is known to have a curative element for healing. The town of



Badian comes from *badyang* (*Alocasia macrorrhizos*) [43], which large leaves resemble like a heart-shape commonly used to wrap leafy vegetables and flower harvests from the farm.

Barili is derived from *balli* (*Echinochloa stagnina Retz*) [44], a grass that is used to feed cattle in the fields. Catmon is derived from a catmon (*Dilleniaccaea philip-pinensis*) tree [45], one of the endemic rare species of trees in the Philippines. Dalaguete is taken from a *dalakit* (*Ficus benjamin linn*) tree [46], i.e. often

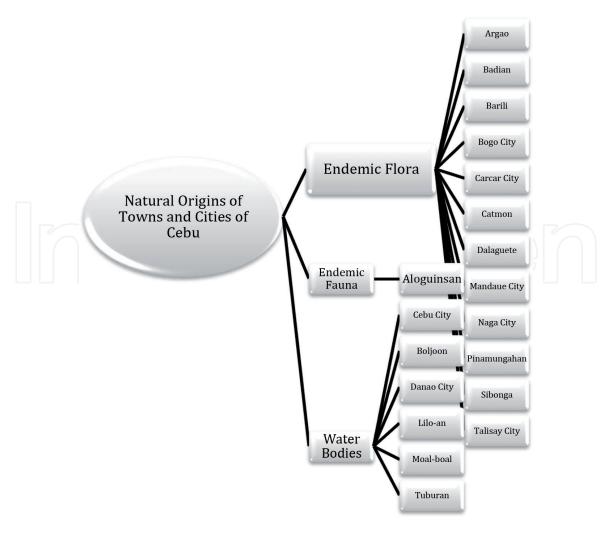


Figure 7.Origins of towns and cities of Cebu.

mentioned in Cebuano folklore. The towns of *Pinamungahan* and *Sibonga* derived their names from a betel palm (*Areca catechu*) [47, 48]. Wrapped with the leaves of *buyo* (*Piper betel* L.), the nut of this palm is an essential element to ancient rituals like in the *hikayan* celebration.

The only town named after an endemic fauna in Aloguinsan. As mentioned in the Kinsan Festival, the name of the town is derived from *ulo* (head) and *kinsan* (big fish) [27]. Freshwater is one of the very important resources for survival. The towns of Boljoon, Moal-boal, and Tuburan got their names from abundant springs and water spouts like in Boljoon from bolho (water spout) [49], Moal-boal from mual (spring or well) and *bual* (bubbling water) [50], and Tuburan from *tubod* (spring) [51]. Residents of these towns use springs for household consumption and agricultural use. The City of Danao got its name from danaw or danawan (a marsh pond) [38], which is used by farmers for their water buffalos to plunge after the day's toil of plowing. Lilo-an got its name from *lilo* (whirlpool) [38], which is risky for fishermen's fishing expeditions. The old name of the City of Cebu was Sugbu that got its name from *sug* (current) of the river or stream adjoining the Mactan Channel, which is a busy waterway for maritime trade and harbor. With the NCCA survey, Filipino values related to the environment ranked 13th [7]. This finding intertwines a connection on how Cebuano values the environment is indicative of the socioanthropological nostalgia of the natural origins of towns and cities. This connection represents a cultural ecology that man, nature, and spirit are closely related [23].

2.2 Quintain for cultural mastery

What is central in the study of culture is a shared knowledge [11]. This is the way how to make a culture of a place sustainable, by mastering and sharing it for dissemination. There are different ways on how to engage in cultural mastery. First is by embracing and appreciating its worldviews and the essential benefits these bring to community life. Second is by engaging it through constant practice to learn the culture. The third is by supporting cultural advocacies and foundations to achieve the real essence of culturally responsive sustainable development. Fourth is by monitoring and regulating people's cultural competence through ESD cultural frameworks. The fifth is by evaluating cultural programs to ensure sustainability.

2.2.1 The mastery of traditional healing

For poor and middle-income families who cannot afford to seek hospital help during the COVID-19 pandemic use *tuob* (steam inhalation) as home remedies; despite the disapproval of the Department of Health because of lack of scientific studies. *Pabukal* (decoction) is also used as another remedy to enhance the immune system during this time of COVID-19 pandemic. In the decoction, pulverized dried leaves of kamunggay (Moringa oleifera) and kamias (Averrhoa bilimbi) or ginger powder with lemon juice, and crushed garlic are boiled for 15 minutes. Some use pabukal with salt to experience comfort. The Department of Health (DOH) in the Philippines encourages the public to eat moringa to help protect from the COVID-19 virus because nutritionist Salina Teo explains that moringa contains vitamins C and E, calcium, potassium, and iron to boost the immune system [52]. Hilot is integrated into health and wellness in spa services. The promotion of herbal medicine and the propagation of herbal plants through the creation of herbal gardens for home remedies [53]. The recognition and production of virgin coconut for medicinal use by some pharmaceutical companies is another example of cultural mastery [17]. Along this vein, the Department of Science and Technology (DOST) in the Philippines through the Philippine Council for Health Research and Development

(PCHRD) prepares a set of policies that welcome traditional healing practices into the mainstream of medical science [14].

2.2.2 The mastery of Cebuano collective behavior and act of kindness

How is the culture of collective behavior and acts of kindness mastered? The willingness to help is a prime value of a Cebuano to sympathize with by extending their donations during the times of calamities either in cash or in kind. *Unong* or empathy is an act of kindness in times of someone's grief of a loss of someone. During the COVID-19 pandemic, the Philippine government has created the Inter-Agency Task Force (IATF) to manage cases of COVID −19 infections. As deputized by the government under the Bayanihan to Heal Act, IATF functions as a tamabayayong unit with members from other government agencies. This initiative of the government recognizes cultural knowledge of the Filipino collective behavior of *Bayanihan*. The term Bayanihan is a derivative word of bayani, which means hero. Hence, Bayanihan is a heroic act of kindness. A successful marriage of a couple succeeded because they do yayong (partnership) in building a family. Successful cooperatives in Cebu are living witnesses of tambayayong (cooperation) efforts of its members. Following the protocols of staying home, wearing masks, washing of hands, and observing a meter of social distancing during community quarantines exemplify a tambayayong spirit with the government, to reduce contagion.

2.2.3 The mastery of the Cebuano cultural festivals

The celebration of annual festivals has been a part of Cebuano's cultural life. The grandest Sinulog Festival is supported by the Sinulog Foundation, Inc., the Cebu City government, the private sectors, and the faithful. Festivals with economic origins promote the products of towns and cities through the government's One Town One Product (OTOP) policy by the Department of Trade and Industry (DTI). Festivals with environmental origin are used to promote the preservation of the endemic species of flora and fauna. The Dinagat Festival recognizes the bakasi (Anguilla japonica) as the popular exotic street food of the town of Cordova that promotes tourism attraction of the town. The Siloy Festival of Alcoy becomes a grand slam winner in Sinulog competition because of its message to conserve the endemic Black Shama. In 2012, BirdLife International, the Official Red List Authority for Birds for International Union for Conservation of Nature (IUCN) classified the Black Shama endangered [54]. The local communities know the existence of the Black Shama and recognize the efforts of the government through the Department of Environment and Natural Resources (DENR) for its preservation. However, there is still the need for a concerted effort for both government and non-government organization programs to inform, educate, and communicate these conservation policies and programs [54], for sustainable development.

2.2.4 Mastery regarding the natural origin of towns and cities

How can the natural origins of towns and cities impact cultural practice? In the case of the local governments of Bogo City and Catmon, Cebu. They initiated the planting of the *bogo* and the *catmon* trees in their locality to remind the residents of the nostalgia in the socio-anthropological origins of their town and cities. Nurseries run by government and non-government organizations propagate these species for the pride of place and historical sense. With the origins of the towns of Boljoon, Malabuyoc, and Tuburan derived from bodies of water, domestic and farming life is made possible. The pristine waters of these towns promote local tourism

development. These mastery efforts reconnect the profound intimacy, love, and reverence of nature by the Cebuano folks during the pre-colonial periods, which are vital in shaping, cultural and ecological gratitude, Cebuano identity, and pride of place.

2.3 Quintain for cultural reflections

In understanding cultural contexts, reflection is a common tool to process a person's ideas, feelings, and actions. **Figure 8** shows the types of cultural reflections. *Reflections On* refers to someone's insights on the cultural contexts, in a form of positive or negative impressions, positive or negative observations, and comments. *Reflections In* refers to someone's feelings or emotions about his or her experiences, gut feeling, and affirmation for acceptance or rejection of a specific cultural context. *Reflections About* refer to someone's right decisions and right actions in a specific cultural context.

2.3.1 Cultural reflections on traditional healing

Despite the government's response to COVID-19 pandemic, contact tracing of possible infected residents is difficult with no enough health workers to facilitate, hospital bed capacity exceeded, suspected COVID-19 patients have no choice to wait in a long queue to be swabbed or to hop from one hospital to another to find their luck and get admitted; the unlucky ones accept their fate to perish. These sad realities create fear and some of those who have insufficient income resort to traditional Cebuano healing as an alternative. The Cebu provincial government through its memorandum encourages the use of *tuob* as home remedies. Issues between culture and science on the efficacy of *tuob* crop up between health workers and the people who believe it. A reflection on this, the Department of Health (DOH) does not

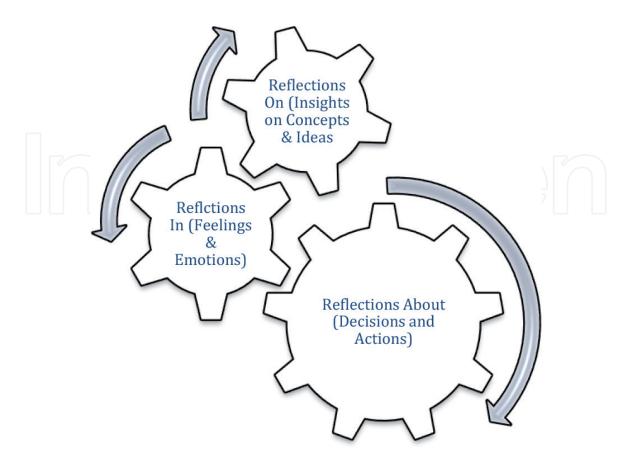


Figure 8. *Types of cultural reflections.*

recommend it because of a lack of scientific studies to prove its claim. DOH officials further explain its danger that its heat can damage the patient's lungs and eyes and can spread viral contamination within the family members by its liquid droplets or by its aerosol. A reflection in contextualizes this, while those who support *Tuob* claim for healing, the rest feel the ambivalence – whether to accept it or not. This ambivalence may result in mixed emotions and worries about their health conditions. A reflection about why a concrete action may not be initiated by the government and other private companies to provide further studies to investigate the efficacy of *tuob* or explore the other forms of Cebuano *panambal* (healing), instead of destroying a cultural practice like this. Doing it will eradicate the ethnocentric bias of a peripheral culture, who knows this is one way to support sustainable development in local public health in the future.

2.3.2 Cultural reflections on Cebuano Collective behavior and act of kindness

Collective behavior shapes people's identity through their cultural knowledge and practices. In times of natural calamities and in trying times of need, a Cebuano can extend his or her helping hand as contextualized in the TAYTU. During this time of the pandemic, it is irreconcilable that an official of the country labels a Cebuano as *gahi'g ulo* (hard-headed) because of a lack of support or cooperation to prevent the rise of COVID-19 cases in Cebu. While it is true to some, there are some Cebuano who managed to stay home for four months of quarantine measures. A reflection on downplaying the extent and danger of COVID-19 by some local government officials, and their laxity to lead affect the rising cases of COVID-19. Residents can never be blamed as hard-headed because they simply go out to buy their provisions when aids of government remain insufficient for the longest duration of lockdown. Along with TAYTU, a reflection about retorts that Cebuano residents are compliant to cooperate with government protocols provided that the necessities of their families are provided. How can this be done when some of them work daily, some lost their jobs, some left with no savings? How can they survive? Being hard-headed is a risky decision for their loved ones because they have to go out and buy their provisions including medicines for the family. This concern validates the NCCA survey that Filipinos most highly valued the family [7]. They take risks in 'meeting both ends meet' for the security and safety of their families. A reflection about these questions. Where is the act of kindness when people are lining up under the heat of the sun claiming their financial assistance? How sure that social distancing and wearing of masks are strictly followed to prevent them from being infected? Why can the local government not request help from their constituents to help in the distribution of these food packs to the residents' houses? When systems and good governance are observed, the potentials of a Cebuano *alayon*, *yayong*, *tam*bayayong, and unong can never be underestimated. These collective behaviors can build successful cooperatives and merge partnerships to bigger corporations, which if these would succeed, a tagay celebration is possible to enjoy a lighter side of life.

2.3.3 Cultural reflections on Cebuano cultural festivals

A reflection on the tapestry of cultural festivals that speak the cultural, historical, and natural identity of the towns and cities of Cebu. Festival is a colorful pageantry for product promotion and tourism marketing strategies. A reflection narrows down the religious purpose of festival celebrations is overshadowed by business motives for marketing strategies, to gain profit, and to ensure economic sustainability. However, a reflection about the internalization of these festivals in the cultural fabric of the Cebuano souls for unity and harmony in the entire province.

2.3.4 Cultural reflection of the natural origins of towns and cities

The naming of towns and cities in Cebu after an endemic flora and fauna and bodies of water is unique in the Philippines and perhaps the rest of the world. A reflection on upholds an ethos of Cebuano intimacy and reverence to nature – cultural and ecological gratitude given to Mother Nature – the source of everything that people need. A reflection makes the Cebuano proud about the origins of their towns and cities. Concern for conservation efforts of these endemic flora and fauna and the preservation of the bodies of water remain one of the important reflections about this quintain to improve sustainability.

2.4 Quintain for cultural innovations

After all the discussions on cultural knowledge, mastery, and reflections, the greatest challenge is how to innovate culture and integrate it with ESD. Cultural innovation is a process of integrating cultural knowledge, skills, and reflections into another concept, product, and system for development. The previous works of the author and company on culture-based pedagogies support cultural innovations [24, 37]. As contextualized in the culture of healing, a cultural knowledge about panambal (healing) using herbal medicine includes finding out the different herbal plants including its parts, and its processes of utilization for healing. Its cultural mastery includes the practice of using these herbal plants. Believing and sharing the testimonies and claims based on scientific studies on the efficacy of these herbal medicines presupposes cultural mastery. Cultural reflection is both the process of 'doing things right' (efficiency) and 'doing the right things' (effectiveness), to ensure public health safety. Thinking beyond about it to improve healing is a cultural innovation that includes: propagation of herbal plants, creation of traditional healing centers, the production of bottled herbal products approved by the Food and Drug Administration (FDA) for safe use, and the creation of the concept of *panambal* to education like making a *panambal* teaching strategies that would improve localized and contextualized learning. Therefore, there is a need to incorporate sustainable initiatives in innovative development [55]. Harmonizing these elements into a desired framework of action is known as the KRSP Model for a Culture-based ESD. How does this framework work for sustainable development?

2.4.1 The KSRP model for a culture-based ESD

To make culture-based education sustainable and achieve its desired goals by 2030, KRSP (Knowledge of culture, Skills in cultural practice, Reflections to cultural contexts, and Performance in cultural innovations) Model facilitates the holistic ESD. Figure 9 shows 13 intricacies of the KSRP Model for a Culture-based ESD in four phases. The first phase is the quadrivium of knowledge (K), skills (S), reflections (R), and performance (P) in a seamless and nurturing delivery of instruction as shown in Figure 1.

This primary phase emphasizes the basic notion of learning from easy to difficult, i.e. from concrete to abstract or from specific to general in a linear and sequential form of instruction. The second phase is the blended quadrium of knowledge and skills (KS), knowledge and performance (KP), skills and reflections (SR), and reflections and performance (RP). The connection between knowledge and skills (KS) enhances individuals' left-brain potentials for critical analysis such as comparing and contrasting, classifying, analyzing, inferring, supporting a statement, ordering and ranking, evaluating and critiquing, and decision-making, to become more rational [53]. The connection between reflections and performance



Figure 9. *KRSP model for a culture-based ESD.*

(RP) nurtures individuals' right-brain potentials for creativity such as originality, fluency, flexibility, elaboration, brainstorming web, and generating relationships for integration, to become more intuitive [53]. The linking of the skills and reflections (SR) provides opportunities for sensitivity to affect like feelings and emotions and become more instinctive. The connection between knowledge and performance (KP) promotes opportunities for action and experimentation to become more intellectual.

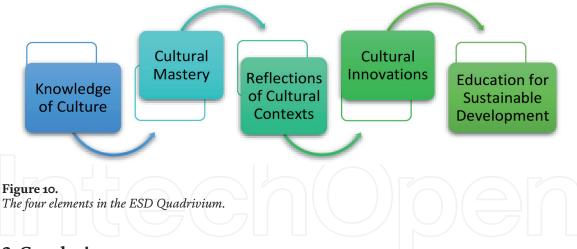
The third phase is the trifocal trivium of knowledge, skills, and performance (KSP); the trifocal trivium of knowledge, skills, and reflections (KSR); the trifocal trivium of skills, reflections, and performance (SRP); and the trifocal trivium of knowledge, reflections, and performance (KRP). KSP indicates more left-brain dominance with creative results on cultural products and performance. KSR implies also with more left-brain dominance with concern for collaboration and team-building. SRP shows more right-brain dominance with an emphasis on self-regulation and competence. KRP projects the likelihood of right-brain dominance with emphasis on critical analysis and logical understanding. The last phase is the connection that integrates knowledge, skills, reflections, and performance (KSRP). The combined fulcrum of KSRP completes the holistic success of a culture-based ESD. KSRP promotes understanding, tolerance, respect, and harmony despite diverse perspectives and cultural orientations.

2.4.2 Quadrivium theory of culture integration for ESD

With the KRSP Model as a lens, a Quadrium Theory of Culture Integration for ESD is generated as shown in **Figure 10**. To make education sustainable for 2030, first educational institutions need to conduct intensive research and archiving of cultural artifacts for curation to establish a cultural knowledge profile of a certain locale.

Second, making use of the curated culture profile, cultural mastery propels for practice according to the person's skills and interest. Third, concerns and issues in the process need further reflections for better action that facilitate cultural innovations for the sustainability and development of ESD. Fourth, deciding for better action supports the eight standards of effective critical thinking such as clarity, accuracy, precision, relevance, depth, breadth, logic, and fairness [10]. Missing one of these elements in the quadrivium, as discussed in **Figure 8**, affects the quality of ESD implementation.

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3. Conclusion

Quality and sustainable education underscore the fragments of culture such as knowledge, skills for practice, reflections, and the right actions for innovations. Recognizing Cebu's knowledge of traditional healing, the people's collective behavior, and the act of kindness, the origins of festivals, towns, and cities challenge modernity and science in the mastery and reflection process. This issue thwarts the essence of culture as a 'soul of the nation' to survive, preventing opportunities for creativity and innovation for sustainable development. The four elements of a culture-based ESD dovetails the creation of the KRSP Model that propels the generation of Quadrium Theory of Culture Integration for ESD.

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