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PAGSUSURI SA MGA MAIKLING KUWENTONG NAGWAGI SA GAWAD NG GINTONG MEDALYA CARLOS PALANCA, 1950-1960

(CRITICAL ANALYSIS OF AWARD-WINNING SHORT STORIES IN CARLOS PALANCA AWARD FROM 1950-1960)

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ABSTRACT

Literature speaks the events of times which serves as history of mankind. Truth manifested in each literary work is a reflection of the absolute realities that every man feels and experiences in everyday life. Hence, this paper aimed to analyze the short stories which won the Gold Medal in Carlos Palanca Award giving body from 1950-1960. It further investigates the significant theme as to its main idea, characterization, setting, and symbolism; main literary theory present in the select short stories, and style in writing. This study is a qualitative in design which employs close reading and content analysis as modes for data gathering and interpretation. The analysis of the select short stories revealed that there is significant style of the author in narrating the moral values of the story. Its implied moral values lead readers to gain life perception between what is right and wrong. As a conclusion, the awarded short stories simply emphasized that amidst life hardships unity and love always help to win the difficult situations. Thus it recommended that short stories in Gawad Palanca Award should be used to teach literature because it consist moral values which can lead the youth to better way in the future.

Keywords: Paksang-diwa, Tauhan, Tagpuan, Simbolismo, Teoryang Pampanitikan, Estilo ng Pagsasalaysay

PANIMULA

Ang buhay ng tao ay parang isang salamin repleksyon ng samu't saring pangyayari. Pangyayaring nagbibigay-sigla sa mga madidilim at makukulay na kuwentong nagpapatibay sa likod ng maskara ng buhay. Maihahalintulad ito sa isang maikling kuwentong nagbibigay-daan upang magbigay-inspirasyon, motibasyon, lakas ng loob at dahilan upang magpatuloy ang takbo ng buhay sa pakikipagsapalaran sa walang katiyakang mundong ginagalawan. Katulad ng isang likhang sining na tinatawag na panitikan kung saan sumasalamin sa mga makatotohanang pangyayaring maiuugnay noon at sa kasalukuyang panahon sa mga kuwentong buhay ng isang tao.

Ayon kay Azarias (1995) ang panitikan ay pagpapahayag ng mga damdamin ng tao hinggil sa mga bagay-bagay sa daigdig, sa pamumuhay, sa lipunan at pamahalaan, at sa kaugnayan ng kaluluwa sa Bathalang lumikha. Ang paraan ng pagpapahayag ay iniaayos sa iba't iba niyang karanasan at lagay ng kalooban at kaluluwa, na nababalot ng pag-ibig at pagkapoot, ligaya o lungkot, pag-asa o pangamba. Panitikan ang tawag sa lahat ng uri ng pahayag ito man ay nakasulat, binibigkas o kahit ipinahihiwatig lang ng aksyon ngunit may takdang anyo o porma katulad ng maikling kuwento (Santiago et, al. 2007).

Ang mga maikling kuwentong nagwagi ng Gintong Medalya 1950-1960 sa Gantimpalang Palanca ay isa sa mga panitikang Pilipino. Ninanais ng mananaliksik na suriin kung anong mensahe ang nakakubli sa bawat maikling kuwentong nakakuha ng unang parangal bilang karagdagan kaalaman sa pagtuturo upang maibahagi ang yaman ng mensahe ng bawat maikling kuwento. Pangunahing layunin ng pag-aaral na ito ang mahikayat ang mga mag-aaral na mabigyang-halaga ang mga panitikan na nagwagi sa Gintong Medalyang 1950-1960 sa Gantimpalang Palanca at mabatid ang kahalagahan ng pagbabasa ng sariling panitikan. Dagdag pa nito makatutulong din ang pagsusuri ng iba't ibang panitikan upang mas mapalalim pa ang pag-unawa at masuri ang mga nakakubling mensahe sa isang maikling kuwento. Pan-

galawa sa layunin ng pag-aaral ang pagmumungkahi ng isang gabay ng pagtuturo ng akdang pampanitikan sa asignaturang Filipino para sa maikling kuwento batay sa kinalabasan ng pag-aaral na ito.

Sa aklat ni Saucó et, al. (2004). Ang panitikan ay nagsasalaysay ng buhay, pamumuhay, lipunan, pamahalaan, pananampalataya at mga karanasang kaugnay ng iba't ibang uri ng damdamin tulad ng pag-ibig, kaligayahan, kalungkutan, pag-asa, pagkapoot, paghihiganti, pagkasuklam, sindak at pangamba. Ang kahalagahan ng panitikan sa bawat bansa sa daigdig ay katulad ng isang walang katapusang daloy ng tubig sa batisan. Magwawakas lamang ito kung ang mga nakalimbag na titik ay mawawala sa daigdig at kung ang mga tao ay mawawalan na ng kakayahan sa pagpapahayag ng kaisipan, damdamin at karanasan. Mangyayaring mawala ang kaunlarang materyal gayundin ang diwa ng nasyonalismo ngunit hindi kailanman mawawala at mawawasak ang tunay na kaluwalhatian ng panitikan. Mabisang lakas ito na tumutulong sa pag-unlad ng sibilisasyon at lipunan ng bawat bansa.

Ayon kay Alejandro G. Abadila sa aklat nina Bernales et, al (2002) na ang maikling kwento ay sangay ng salaysay na may iisang kakintalan o impresyon. Ayon kay Ferrer (2012) sa kanyang ginawang balangkas na pagsusuri ng maikling kuwento ang simbolismo ay mga detalyeng ginamit ng may akda na kumakatawan sa isang mas malaking kaisipan o ideyang napapaloob sa akda. Ang estilo ng pagsasalaysay ay tumutukoy naman sa daloy kung paano isinalaysay ang kuwento.

Ang Gawad ay Pang-alaala kay Don Carlos Palanca para sa Panitikan o Gawad Palanca ay isang pinakabantog at pinakamatagal na gawad pampanitikan at binansagang "Gantimpalang Pulitzer" ng Pilipinas. Karaniwan, kung hindi lahat, sa mga mahalaga o pangunahing manunulat na Pilipino ay may isa o maraming Palanca sa kanilang bigkis. Sa mga iba, lalo na ang mga baguhang manunulat na kathang-isip o makata, ang pagkapanalo ng isang Palanca ay isang uri ng pagbibinyag ng apoy na isa ay nakatuntong sa pangkat ng pampanitikang Pilipino. Itinatag ang Gawad Carlos Palanca noong 1950 bilang pagbibigay-pugay kay Don Carlos Palanca, Sr., isang tao na nag-aral na may sariling pagsisikap at umangat hanggang sa naging matagumpay na negosyante. Siya ay patron ng mga institusyong pang-edukasyon at itinanim niya sa mga isip ng kanyang mga anak ang halaga ng edukasyon.

Sa pag-aaral ni Bulu (2018) na may pamagat na "Conflict Analysis of the Main Characters in Short Stories by Edgar Allan Poe" natuklasan niyang ang mga sanhi ng epektong naranasan ng pangunahing tauhan ay sumasaklaw sa positibong epekto ng kasiyahan o kagalakan, interes o kaguluhan, at sorpresa o gulat at negatibong epekto naman na dulot ng galit, pagkasuklam, pagpapalayas, pagkabalisa o pagdurusa, pagkatakot at pagkapahiya. Ito ay may kaugnayan sa kasalukuyang pag-aaral batay sa mga sinuring maikling kuwentong nagwagi sa Gawad Carlos Palanca na kung saan ang bawat tauhan ay may iba't ibang karanasan na naging sanhi at epekto nito hinggil sa kanilang buhay.

Ang pag-aaral na isinagawa ni Aguila (2017) natuklasan ng mananaliksik na mahalaga ang pagsusuri ng mga akdang ipinagamit sa mga mag-aaral. Mahalaga ang pagkakaroon ng panimulang ebalwasyon upang matiyak ang kaangkupan nito sa mga mambabasa at magamit bilang suplemento/kagamitang pampagtuturo. Ito ay mahalagang ambag na makatutulong ng lubos sa mga gurong gumagamit ng mga genre na kagaya ng mga kuwentong pambata. Ito ay nauugnay ang pag-aaral na ito sa kasalukuyang pananaliksik dahil binibigyang-diin niya ang pagsusuri ng panitikan bilang isang kagamitang panturo sa paglinang ng kakayahan ng mga mag-aaral sa mataas na antas ng pag-iisip gamit ang mga maikling kuwento.

Sa pag-aaral ni Pascual (2016), na pinamagatang Pag-ibig sa Siyudad: Pagbasa sa Sa Iyong Paanan, natuklasan niya na ang mga tema na taglay ng Sa Iyong Paanan ay umiiral din sa iba pang mga akda: ang pag-unlad ng indibdwal at ang masalimuot na relasyon sa siyudad. Ito ay may kaugnayan sa kasalukuyang pag-aaral batay sa mga sinuring maikling kuwentong nagwagi sa Gawad Carlos Palanca na kung saan tumutukoy ito sa pag-unlad ng tao at ang kalagayan ng tao sa kanyang mundong ginagalawan na makikita din sa iba pang kuwentong isinulat ng iba pang may-akda.

Ang pag-aaral ni Ariyanti (2016) na pinamagatang "Moral Values Reflected in "The House on Mango Street" Novel Written by Sandra Cineros" natuklasan niyang ang mga elemento ng mga pagpapahalagang moral ay umiiral sa nilalaman ng nobela maliban sa punto ng "paggalang at pag-aalaga sa iba" na nangangahulugang "hindi saktan ang iba". Samantala, ipinapaliwanag din ng mananaliksik ang mga bahagi ng mga nobelang subtitle na binubuo ng mga katotohanan na sumasalungat sa ilang mga elemento ng mga pagpapahalagang moral. Ito ay may kaugnayan sa kasalukuyang pag-aaral batay sa mga sinuring maikling kuwentong nagwagi sa Gawad Carlos Palanca na kung saan inilalahad dito ang mga gintong aral na makukuha sa bawat elementong ginamit ng kuwento.

Sa pag-aaral ni Fauzan (2016) na may pamagat na “Structural Analysis of “Peanut & Sparky”: A Short Story by Arnie Lightning as A Way in Understanding Literature” natuklasan niyang ang pag-aaral sa pagsasagawa ng pagsusuri sa istruktura ay dapat maging isang mabuting paraan sa pag-unawa sa mga gawaing pampanitikan. Ito ay nauugnay sa kasalukuyang pag-aaral batay sa mga sinuring maikling kuwentong nagwagi sa Gawad Carlos Palanca na kung saan may iba’t ibang elemento ginamit ukol sa istruktura ng mga kuwento.

Sa pag-aaral na isinagawa ni Calibayan (2015), natuklasan niyang mayaman sa mga salawikain ang mga Tiruray at may iba’t ibang balyu ang napapaloob sa mga salawikaing ito na nagsisilbing gabay nila sa kanilang pang-araw-araw na pamumuhay batay sa kanilang kultura na naging identidad nila bilang isang tribu. Ito ay nauugnay sa kasalukuyang pag-aaral dahil gumamit din ng panunuring pampanitikan ang mananaliksik upang suriin ang mga balyung nakapaloob sa mga salawikain na nakabatay sa kanilang kulturang kinabibilangan katulad din sa mga kuwentong nagwagi sa Gawad Carlos Palanca na kung saan may kapupulutan ding aral na maaaring maging gabay sa mga mambabasa sa kanilang buhay na tatahakin.

Ang pag-aaral nina Catapang (2015) natuklasan nila na ang mga alamat at kuwentong-bayan ay may iba’t ibang bersyon. Gayunpaman, masasabing sinasalamang ng kaugnayan ng mga pokloriko sa pang-araw-araw na pamumuhay ng mga naninirahan malapit sa Lawa ng Sampalok lalo na sa mga mangingisda na hindi mahihwalay ang tao sa kanyang lipunan. Inilahad din ang mga resulta at implikasyon ng pananaliksik na ito bilang ambag sa batis ng kaalaman ng Sikolohiyang Pilipino. Sa pag-aaral ni Barrios (2015) na may pamagat na Pagtatanghal ng Tulang Akeanon: Papel ng Vernakular sa Pag-akda ng Pambansang Panitikan natuklasan niyang ang mga tulang Akeanon ay mayroon pa ring bahid ng panitikan at katutubong kultura na siyang pinaghahanguan ng mga talinghaga para sa pagbabalikwas at pag-aalsa laban sa dominanteng uri, kasarian at lahi. Ang tulang Akeanon, higit sa “pagkilala” at “pag-iisa” sa kasaysayan at kulturang pambansa, ay nagsusumikap ring mag-akda ng sariling posisyonalidad sa diskurso ng pambansang panitikan. Ito ay may kaugnayan sa kasalukuyang pag-aaral dahil sa ito ay gumagamit ng panunuring pampanitikan at higit sa lahat makikita ng nilalaman ng tula ay ang kulturang nangingimbabaw sa lugar ng Pilipinas na naghatid ng aral at pagpapahalagang moral. Katulad din sa mga kuwentong nagwagi sa Gawad Carlos Palanca na hindi mawawala ang mahahalagang aral na isin-abuhay ng mga pangunahing tauhan.

Ang pag-aaral na isinagawa ni Baoc (2014), natuklasan niyang punung-puno ng pagpapahalagang moral ang mga akdang pampanitikan na nakapagbibigay ng impormasyon sa mga mambabasa upang mapalawak ang kanilang kaalaman, naipakita ng may-akda sa kuwento ang mga aral at balyung nais iparating sa kanyang mga mambabasa, nangingibabaw ang mga pagpapahalagang moral na mabubuti sa kuwento dahil sumusunod ang tao sa pamantayan sa kagandahang-asal at nagbubunga ng masama ang mga gawaing di mabubuti. Sa pag-aaral na ito ay nauugnay sa kasalukuyang pananaliksik batay sa mga sinuring maikling kuwentong nagwagi sa Gawad Carlos Palanca dahil sa binibigyang-diin nito ang gintong aral na makikita sa mga piling maikling kuwento tulad ng mga kuwentong ni Rogelio R. Sicat na may pagpapahalagang moral.

Sa pag-aaral na isinagawa ni Cuizon (2014), natuklasan niyang ang pagsusuri ng maikling kuwento sa mga tesis at disertasyon mula sa iba’t ibang paaralan gamit ang meta-analisis ay isang epektibo, mabisa, obhektibong paraan at kagamitan na magagamit sa makatarungang paghatol; pamumuna sa kabuluhan at kagandahan; paghahambing sa mga kritikal na isyu; at pormulasyon ng panibagong pamantayan at batas. Nauugnay ang pag-aaral na ito sa kasalukuyang pananaliksik dahil sa ito ay nakapokus sa paggamit ng meta-analisis na isang uri ng panunuring pampanitikan na siyang magbibigay gabay upang mas lumawak pa ang pag-aaral at espasyo ng pampanitikan.

Ang pag-aaral na isinagawa ni Hassan (2019) natuklasan niyang ang paggamit ng mga padamdang at retorika na katanungan ay maliwanag na naihatid ang mensahe ng kuwento, na kung saan maliwanag na nailahad ng isang hardinero, sa kanyang pag-alis mula sa hardin, sa kanyang mga kapwa hardinero. Gayunpaman ang wikang ginamit niya ay hindi umaangkop bilang isang hardinero sapagkat ito ay napaka pormal at mahusay magsalita at puno ng pagiging musikal. Ito ay may kaugnayan sa kasalukuyang pananaliksik dahil ang mananaliksik ay nagbibigay-diin sa panunuring pampanitikan batay sa istelong ginamit sa maikling kuwento sinuri. Katulad din sa mga maikling kuwentong nagwagi sa Gawad Carlos Palanca na kung saan may iba’t ibang pamamaraan ding ginamit ang may-akda sa paglalahad ng kuwento.

Sa pag-aaral ni Izehari, Z. F. (2014) na may pamagat na “The Significance of Moral Values Embedded in English Literature Component Short Stories on Form Five Students” natuklasan niyang ang mga maiikling kwento ay nakatutulong sa pag-aaral ng wika mula sa mga aspektong pangwika habang nagbibigay ng positibong epekto sa pag-unlad ng moralidad ng mga mag-aaral. Ito ay may kaugnayan sa kasalukuyang pag-aaral batay sa mga sinuring maikling kuwentong nagwagi sa Gawad Carlos Palanca na kung saan may mabuting naidudulot ang paggamit ng maikling kuwento kaugnay sa pagpapalawak ng kaalaman sa wika at pagpapahalagang moral ng mga mag-aaral.

Ang pag-aaral nila Kidd at Castano (2013) na may pamagat na “Reading Literary Fiction Improves Theory of Mind” natuklasan nila na, ang pagbabasa ng mga pampanitikanang maikling kuwento ay nakatutulong sa pagpapalawak ng kaalaman sa mataas na antas ng pag-iisip lalong-lalo na kung ito’y iugnay sa malikhaing gawa ng sining. Ito ay may kaugnayan sa kasalukuyang pag-aaral dahil mapupulutan din ng aral ang pagsusuri ng maikling kuwentong nagwagi sa Gawad Carlos Palanca na siyang daan upang umunawa rin sa mga dinaranas na pighati at kasayahan ng isang indibidwal.

Sa pag-aaral ni Teodoro, J. I. E. (2013) natuklasan niyang, ang dagat ay isang imahen, metapora, o representasyon ng isang buhay at ang buhay ay mapagbigay, tigib ng kagandahan at kasiyahan. Subalit ang buhay ay hindi laging ganito. Maiugnay din ito sa mga maikling kuwentong nagwagi sa Gawad Carlos Palanca na may iba’t ibang pagpapakahulugan ang mga may-akda sa kanilang isinulat na kuwento.

Ang pag-aaral na ito ay may kaugnayan sa kasalukuyang pananaliksik dahil ang mananaliksik ay nagbibigay-diin sa panunuring pang-istelo sa maikling kuwento. Bilang panitikan, ito ay magkaugnay sapagkat ang buhay ng isang tao ay nababalutan ng iba’t ibang damdamin at karanasan katulad ng isang maikling kuwento na dapat isadula sa isang pantanghalan upang magampanan ang tungkulin bilang isang indibidwal na mamamayan. Ang pag-aaral ng panitikan ay nakatutulong upang mas mapalawak pa ang pag-iisip ng mga tao o mag-aaral katulad ng pagsusuri ng iba’t ibang maikling kuwento na nagpapamalas nang malalim na pag-iisip at nagbibigay ng gintong aral na maaaring maisasabuhay ng bawat indibidwal. Sa pagtuturo ng mga kabataan mahirap tukuyin kung ano-ano ang mga interes ng bawat isa sapagkat laganap na ang makabagong teknolohiya na laging nakadepende ang mga mag-aaral sa pagkuha ng iba’t ibang impormasyon kaya nararapat lamang na pukawin ang interes ng mga ito sa pamamagitan ng pagganyak na pagkukuwento upang makuha ang bawat atensyon nito at malaman ang kabuluhan at kahalagahan ng pagbabasa ng sariling panitikan. Katulad ngayon na nasa virtual na mundo na ang kabataan na halos walang oras na basahin ang iba’t ibang maikling kuwento kaya kung minsan hindi na pinagbabatayan ang kabuuang kuwento at sa buod na lamang nagdedepende. Ito’y nangangahulugang nakakalimutan na ng mga kabataan ang kahalagahan at kabuluhan nito kaya nararapat lamang na gisingin ang kanilang isipan sa kahalagahan ng panitikan.

PAGPAPAHAYAG NG SULIRANIN

Ang pag-aaral na ito ay naglalayong kritikal na suriin ang mga maikling kuwentong nagwagi sa Medalyang Ginto sa Gawad Carlos Palanca, sa mga Taong 1950-1960. Ang kinalabasan ng pag-aaral ay magsisilbing batayan sa pagmumungkahi ng isang gabay ng pagtuturo.

Ito ay tiyak na sumasagot sa sumusunod na katanungan:

1. Ano ang makabuluhang tampok sa mga maikling kuwentong nagwagi ng Gintong Medalya sa sumusunod na mga element;
 - 1.1 Paksang-diwa,
 - 1.2 Katangian ng Tauhan,
 - 1.3 Tagpuan,
 - 1.4 Simbolismo?
2. Anong teoryang pampanitikan ang namamayani sa mga maikling kuwentong nagwagi ng Gintong Medalya?
3. Nagkakaroon ba ng makabuluhang nangingibabaw sa estilo ng pagsasalaysay ng mga may-akda sa mga maikling kuwento?

METODOLOHIYA

Ang mga paraang ginamit sa pag-aaral na ito ay ang pagsusuring kritikal at ang pagpapakahulugan na nagbibigay-pokus sa pagsusuri ng maikling kuwento. Ito ay isang kwalitatibong pananaliksik na kung saan ang maikling kuwento ay binasa at kinikilala bilang isang likhang-sining. Ang unang paraan ay binubuo ng pagbabaha-bahagi ng bawat elemento upang lalong maging malinaw ang pagpapaliwanag sa kabuuan nito upang maunawaan ang itinatampok ng may-akda sa kanyang mga kuwento. Ang pangalawang paraan ay gumagamit ng matalino at masining na pagsusuri sa bawat elementong pinag-aralan upang lalong mapahalagahan ang mga ito. Ang pag-aaral na ito ay limitado lamang sa pag-aanalisa ng kuwento sa perspektibong siklohikal.

Diskusyon sa Natuklasan at Resulta ng Pagsusuri

Sa bahaging ito, matutunghayan ang paglalahad sa kinalabasan ng mga sinuring datos na siyang mahalaga sa pagtuklas sa mga layunin ng pag-aaral.

Pagsusuri sa Makabuluhang tampok sa mga Maikling Kuwentong Batay sa Paksang-Diwa

Talahanayan 2

Pamagat	May-Akda	Paksang-diwa
Kuwento ni Mabuti	Genoveva E. Matute (1951)	Buhay ng Guro
Kahiwagaan	Pablo N. Bautista (1952)	Pananalig sa Diyos
Kapangyarihan	Buenaventurada S. Medina Jr. (1953)	Kahalagahan ng Pamilya
Paglalayag sa Isang Puso ng Bata	Genoveva E. Matute (1955)	Buhay ng Guro
Sugat ng Digma	Pedro S. Dandan (1957)	Pananalig Diyos
Ang Mangingisda	Ponciano B. Pineda (1958)	Ambisyon ng tao
Dayuhan	Buenaventurada S. Medina Jr. (1959)	Kahalagahan ng Pamilya
Luntiang Bukid	Eduardo B. Reyes (1960)	Kahalagahan ng Pamilya

Ang *Kuwento ni Mabuti* ay tumutukoy ito sa buhay ng guro at mag-aaral, kung paano ipinakita ng guro ang kulay at kagandahan ng buhay sa kanyang mag-aaral at kung paano rin nadama ng isang mag-aaral ang hatid nitong taglay na aral na hindi malilimutan kahit na puno ng kalungkutan ang kanyang puso ay patuloy pa rin itong naging mabuti sa lahat ng bagay. Sa **Kuwento ni Mabuti**, umiikot ang paksang diwa sa buhay ng isang guro na hindi lamang siya ang nagtuturo sa mga mag-aaral kundi natuto rin siya mula sa mga ito. - *buhay ng guro*

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay tumutungkol sa buhay ng guro:

“Tiningnan niya akong buong tapang na pinipigil ang panginig ng mga labi at sinabi ang ganito. Mabuti...mabuti gaya ng sasabihin nitong si Fe iyon lamang nakararanas ng mga lihim na kalungkutan ang maaaring makakilala ng mga lihim na kaligayahan. Mabuti! At ngayon! mag-sisimula tayo sa ating aralin...Natiyak ko noon! gaya ng pagkakaiyak ko ngayon! na hindi akin ang pangungusap na iyon! ni sa aking mga pagsasalita! ni sa aking mga pagsusulat. Ngunit samantalang nakatitig siya sa akin ng umagang iyon! habang sinasabi niya ang pangungusap na iyon! nadama kong siya at ako ay iisa.”

Sa kuwentong *Kahiwagaan* nakabatay ito sa kahiwagaan ng pananalig sa Diyos dahil ipinapakita rito ang hiwagang naganap sa pamamagitan ng pananalig ng mga tao sa simbahan sa araw na may naganap na malaking sakuna na kung minsan’y nasaksihan ng pangunahing tauhan ang kapangyarihang hatid nito na siyang nagbukas sa kanyang puso’t isipan na kilalanin, tanggapin at manalig sa Diyos sa anumang pagkakataon. Ang **Kahiwagaan**, umiikot ang paksang-diwa sa pananalig sa Diyos na kung saan ito ang pangunahing tungkulin ng isang tao na dapat kilalanin at tanggapin sapagkat ang Diyos ay makapangyarihan, ang tanging tagapagligtas sa anumang sitwasyon at problemang kinakaharap. – *Pananalig sa Diyos*

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay tumutungkol sa pananalig sa Diyos:

“Ang paningin kong galing sa karimlan ay binate ng liwanag at kapayapaan. Di- kaginsa-ginsa, ang mga tinig ay pumailanglang sa katahimikan: buong mga tinig ng nagsisipanalig, nagkakaisang pagdarasal ng mga tao sa gitna ng lagim. Ang buong simbahan ay nagliliwanag na para bang ang lagim sa sansinukob ay hindi makapapasok sa banal na pook na yaon, na para bang ang tahanan ng pananampalatayang yaon ay ligtas sa mga sakuna ng buhay. Sa kauna-unahang pagkakatao’y natagpuan ko na lamang ang aking sariling nakaluhod sa tabi ni Magdalena.”

Sa kuwentong **Kapangyarihan** ay tumutukoy sa buhay ng isang pamilya kung saan dito naganap ang mga masasakit na alaala na hindi malilimutan ng mga anak dahil sa kapangyarihang taglay ng kanilang ama na siyang nagtulak sa pangunahing tauhan na maghimagsik at nagbunga ng ng hindi kanais-nais na resulta na sumalalim sa katauhan ng anak ang katangian ng ama. Sa **Kapangyarihan**, umiikot ang paksang-diwa sa kahalagahan ng isang pamilya na kung saan ang pagiging magulang ay hindi lamang nagtatapos sa pagluwal ng anak kundi nasusukat ito sa kung anong uri ng pagpapalaki ang ginawa mo para sa biyayang ibinigay ng diyos sa iyo. – **Kahalagahan ng Pamilya**

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay tumutungkol sa kahalagahan ng pamilya:

“Mabigat ang kanyang paa sa paghakbang. Lumigon siya sa kanyang ina. Saka madali siyang pumasok ng silid. Lumapit siya sa kanyang ama. Pikit ang mga mata ng kanyang ama. May sariwang sariwang bakas na naiwan ang luha sa pisngi. Ang isang kamay ay nakahawak sa basong walang laman. Dinama niya ang malayang kamay. Nanlamig siya. Tinignan niya boteng kinasisidlan ng mga pildoras na gamot nito! Wala nang laman. Mahigpit niyang hinawakan ang kamay ng kanyang ama. Sa puso niya’y kay-agang naunsiyani ang halaman ng paghihimagsik. Iniwaksi niya ang lahat ng alaala ng nakaraan-ang tungkol sa tinig ng ama niyang nagpupunla ng pagkatakot, ang unti-unting paglalaho ng taginting niyon. Paanas siyang nagsalita:” Itay! Itay!

Sa kuwentong **Paglalayag sa Isang Puso ng Bata** ay tumutukoy sa buhay ng guro at mag-aaral kung paano ipinakita ng guro ang kahalagahan ng isang mag-aaral, paano niya nabago ang isang mag-aaral at kung paano siya natuto sa kanyang kamaliang kilos na nagawa sa isang munting batang mag-aaral. Sa kuwento ng **Paglalayag sa Isang Puso ng Bata**, umiikot ang paksang-diwa sa ugnayan ng guro at mag-aaral na ang magandang asal ay kaban ng yaman. – **Buhay ng guro**

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay tumutungkol sa buhay ng guro:

“Biglang-bigla, ang maitim at pipis na mukha ng bata’y nakita ko sa pintuan. Ang mga mata niyang nakipag-salubungan sa aki’y may nagugulumihanang tingin. “Goodbye, Teacher,” aniya. Pagkatapos ay umalis na siya. Nagbalik siya upang sabihin iyon sa akin. Kung gaano katagal ako noon sa pagkakaupo ay hindi ko na magunita ngayon. Ang tangi kong nagugunita’y ang pagpapakumbaba ko sa kalakhan ng puso ng munting batang yaon, sa nakatitinag na karikitan ng kanyang kaluluwa. Nang sandaling yaon, siya ang aking naging guro.”

Ang kuwentong **Sugat sa Digma** ay tumutungkol sa pananalig sa Diyos hinggil sa paniniwala ng mga pangunahing tauhan batay sa kanilang kinaugalian na makipagkulto. Sumasalim din dito ang kakulangan ng pananalig ng pangunahing tauhan na si Tonyo na kung saan iba ang kanyang paniniwala kaya siya nalihis ng ibang daan dahil sa walang pananalig sa puong maykapal. Sa kuwentong **Sugat sa Digma**, umiikot ang paksang-diwa sa pananalig sa Diyos na kung sa lupa namamatay, sa langit ay mabubuhay kaya huwag mawalan ng pananampalataya sa Diyos. – **Pananalig sa Diyos**

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay tumutungkol sa pananalig sa Diyos:

“Si Obispo Banaag ang nakapagsibol ng pananampalataya sa puso ni Tonyo, bagama’t kami ni Naomi ang nagsimulang luminang, at nakapagtata kang mabansot iyon. Nalimutan na kaya ni Tonyo ang nangyari sa kanya noong huling araw bago kami nagpatala sa kilusan laban sa mga Hapones? Ang luhang sumusungaw sa kanyang mga mata ay hindi nalingid sa akin nang matinag siya ng sermon no Obispo Banaag hinggil sa kaligtasan ng tao, na sinipi ang paksa sa pilosopiya ng isang teologo. “Unless souls are saved, nothing is saved; there can be no world peace unless there is soul-

peace. World wars are only projections of the conflicts waged inside the soul of modern men, for nothing happens in the external world that has not first happened within a soul.”

Sa kuwentong **Ang Mangingisda** tumutukoy ito sa ambisyon ng isang mangingisda na kung saan ninanais niyang magkaroon agad ng malalaking lantsa upang maahon sa hirap ang kanyang minamahal na ina. Subalit ang pangarap o ambisyong ito ang siyang nagdulot sa kanyang sariling kapahamakan. Kaya dapat na makuntento muna kung ano ang meron ka at unti-unti mong sikaping makuha ang pangarap hindi ‘yung tipong parang isang kislap na bigla-bigla mu nalang makukuha sa isang iglap. Ang kuwentong **Mangingisda**, umiikot ang paksang-diwa sa ambisyon na kung ano ang taas ng paglipad ng tao ay gayon din ang lagapak pagbagsak. – **Ambisyon**

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay tumutungkol sa ambisyon:

“Maging nang sumabog sa kanyang kamay ang dinamita’y nagsasayaw pa rin sa kanyang isip ang mga lantsa ni Don Cesar na hindi man lamang natitigatig sa hampas ng mga daluyong. Ang ugong ng kanyang motor, sa pandinig niya, ay tila tugtuging nagbubuhay sa radyong nasa nagliliwanag na punduhan nina Fides. Ito ang kanyang lakas at pag-asa: ang mga lantsa ni Don Cesar at ang punduhan nina Fides. Ang mga bagay na ito ang nagsilang sa kanyang mithiin. Hindi nawawaglit sa kanyang diwa saglit man. Ang kanyang mithiing binuo ng mga lantsa at ng punduhan ay lalong kinulayan ng mga pangyayaring lumiligid sa kanyang buhay. Katulad ng pangyayaring nakaraan.”

Ang maikling kuwentong **Dayuhan** ay tumutukoy sa isang pamilya hinggil sa mga suliraning kinakarap lalong-lalo na ang anak na batang lalaki na para sa kanyang pakiramdam siya ay isang dayuhan sa kanilang bahay dahil sa hindi niya malaman ang lihim o pinag-uusapan ng kanyang mga kapatid at ina. Subalit napalitan naman ito ng pagkakakilala sa kanyang sarili at pamilya nang minsan siya’y lumapit sa kanyang amang malapit ng sumakabilang-buhay na lihim niyang itinatago ang galit sa puso nito at napawi naman ang hinanakit niya nito nang makilala niya ang ama sa huling hantungan sa buhay. Sa kuwentong **Dayuhan**, umiikot ang paksang-diwa sa kahalagahan ng pamilya na magiging isang dayuhang damdamin ang isang tao kung hindi mo malalaman ang tunay na diwa ng pag-ibig kung hindi mo ito nakita sa iyong pamilya. – **Kahalagahan ng Pamilya**

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay tumutungkol sa kahalagahan ng pamilya:

“*Umiling si Ina: “Tapos na ako sa pag-iyak, iha.” Tumayo ang dalawang kapatid ko. Hindi na nila matimpi ang kanilang pag-iyak. Ibig kong lumabas. Ibig kong iwasan ang pagtitig ko sa pagahawak ni Ina sa isang kamay ni Ama: ang mahigpit na paghawak, ang matalik na paghawak. “Alam ninyo, mga anak, ngayon lamang kami talagang mapag-iisang inyong ama.” May kumurot sa aking laman. Pilit kong nilunok ang panunuyo ng aking bibig. Saka ako napabuntunghininga. Naramdaman kong may nagpupumilit na bumulong sa aking mga mata. Ngayon ko lamang nadamang kilala ko ang silid ng aking ama: dat-rati ko nang napapasok ang kapisasong pook na ito! Lumapit ako kay Ama. May kumurot sa aking laman. Pilit kong nilunok ang panunuyo ng aking bibig. Saka ako napabuntunghininga. Naramdaman kong may nagpupumilit na bumulong sa aking mga mata. Ngayon ko lamang nadamang kilala ko ang silid ng aking ama: dat-rati ko nang napapasok ang kapisasong pook na ito! Lumapit ako kay Ama.”*”

Ang kuwentong **Luntiang Bukid** ay tumutukoy sa buhay ng isang pamilya. Dahil dito isinasalaysay ang suliraning kinakarap ng pangunahing tauhan kung paano niya bubuhayin ang kanyang pamilya at kung paano niya lulutasin ang suliraning gumagambala sa kanyang kalooban sa mga taong nagnanais na angkinin ang kanyang pinaghihirapang tinanim na dapat para sa kanyang pamilya lamang. Sa kuwentong **Luntiang Bukid**, umiikot ang paksang-diwa sa kahalagahan ng isang pamilya na kung saan ang kagandahan ng tahanan ay hindi nakikita sa magandang palamuti o gusali kundi sa kagandahan ng pag-sasama ng pamilyang nasa loob nito. – **Kahalagahan ng Pamilya**

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay tumutungkol kahalagahan ng pamilya:

“*Tayo lamang ang may karapatan sa ating aanihin...sa kalahati niyon, sapagaka’t pinaghira-pan natin iyon. Iyon ang bunga ng ating magkasamang pagpapagal. At sasabihin nilang hindi ko nakikiisa...na kalaban ako ng kanilang simulain. Hindi bali, Asa. Nguni’t hindi ako magbibigay.*”

Sabihin na nila ang ibig nilang sabihin. Gawin na nila ang ibig nilang gawin. Hindi, Asa. Subali't ang para sa inyo'y hindi ko maibibigay kanginuman...kahi't sa kapakanan ng isang simulain"

Pagsusuri sa Makabuluhang Tampok sa mga Maikling Kuwento Batay sa Katangian ng Tauhan

Talahanayan 3

Pamagat	May-akda	Katangian ng Tauhan
Kuwento ni Mabuti	Genoveva E. Matute (1951)	<ul style="list-style-type: none"> Mabuti - mabuting guro may mabuting pananaw sa buhay, hilig magsabi ng mabuti
Kahiwagaan	Pablo N. Bautista (1952)	<ul style="list-style-type: none"> Diego - hindi naniniwala sa Diyos Matigas ang ulo May ibang paniniwala
Kapangyarihan	Buenaventurada S. Medina Jr. (1953)	<ul style="list-style-type: none"> Maneng - mabuting anak May tinatagong hinanakit sa ama Na trauma sa ginawa ng ama
Paglalayag sa Isang Puso ng Bata	Genoveva E. Matute (1955)	<ul style="list-style-type: none"> Teacher - mabuting guro Tagapagsalaysay May puso para sa mga bata
Sugat ng Digma	Pedro S. Dandan (1957)	<ul style="list-style-type: none"> Natoy - malalim ang pananalig sa Diyos Mabuting tao Maasahan sa mg aktubidad sa simbahan
Ang Mangingisda	Ponciano B. Pineda (1958)	<ul style="list-style-type: none"> Mangingisda - mabuting anak May pangarap Nag iisip kung ano ang ikabubuti para sa mgulang
Dayuhan	Buenaventurada S. Medina Jr. (1959)	<ul style="list-style-type: none"> Anak na lalaki - mabuting anak Masunurin sa magulang Hindi ipinapakita ang galit
Luntiang Bukid	Eduardo B. Reyes (1960)	<ul style="list-style-type: none"> Iloy - mabuting ama Masipag Responsible sa pamilya

Sa *Kuwento ni Mabuti* ang mga pangunahing tauhan ay si *Mabuti*. Ang katangian ipinapakita ni *Mabuti* sa kuwento ay *mabuting guro* batay sa kanyang ikinikilos sa bawat pangyayari ng kuwento kung paano niya binigyan ng pag-asa at kulay ng buhay ang mga mag-aaral sa pamamagitan ng pagtuturo at pagkikitungo sa bawat sitwasyon. Ang mga pangunahing panauhan naman sa kuwentong *Kahiwagaan* ay sina *Diego*, ang katangian taglay ni *Diego* ay *hindi naniniwala sa Diyos* dahil sa, ipinapakita nito sa kanyang ikinikilos ang walang pananalig na kung saan itinaon lamang niya ang itim na krus na ibinigay sa kanyang ama-amahan dahil sa iba ang paniniwala nito.

Ang kuwentong *Kapangyarihan* makikita na ang mga pangunahing panauhan dito ay si *Maneng*. Batay sa kilos at gawi ni *Maneng* siya ay isang *mabuting anak* pero pagdating sa kanyang ama ay may nakatagong hinanakit ito na paghihimagsik na siyang dahilan na nadala niya ang kaugalian na ginagawa ng kanyang ama sa kanila noong sila'y bata pa lamang ng kanyang kapatid. Ang pangunahing panauhan naman sa kuwentong *Paglalayag sa Isang Puso ng Bata* ay ang *Guro*. Ang *Guro* sa kuwentong ito ay may katangiang *mabuti* dahil sa, ito ay maalalahanin at mapagmalasakit sa kanyang mga mag-aaral lalong-lalo na ang munting bata na naiiba sa lahat ng mag-aaral. Sa kuwentong *Sugat sa Digma* naman ang mga pangunahing panauhan dito ay si *Natoy*. Makikita sa katangian ni *Natoy* na malalim ang *pananalig niya sa Diyos* lalong-lalo na siya ang kapelyan sa kanilang lugar na tungkulin niyang ibahagi ang hatid ng kapangyarihan ng pananalig sa Diyos. Ang kuwentong Ang Mangingisda ang mga pangunahing panauhan dito ay ang *Mangingisda*. Ang katangiang taglay ng Mangigisda ay *mabuting anak* dahil sa, ito ay masipag at may mataas na ambisyon sa buhay na ninanais niyang makaahon sa kahirapan upang mabigyan ng maayos na buhay ang kanyang ina.

Sa kuwentong *Dayuhan* ang mga pangunahing tauhan dito ay ang *anak na lalaki*, ang katangian ng *anak na lalaki* ay isang *mabuting anak* dahil sa, ito ay mabait at masunuring anak ngunit manhid sa kanyang sariling nararamdaman. Lalo na kapag nais niyang magalit ay hindi niya ito ipinapakita kundi kusang loob lamang niya itong dinidibid ng sarilihan. Ang mga pangunahing tauhan naman sa kuwentong *Luntiang Bukid* ay si *Iloy*. Ang katangiang taglay ni Iloy ay isang *mabuting ama* dahil sa, ito ay masipag, responsableng ama at mapagmahal sa pamilya na kung saan ginagawa niya ang lahat niyang makakaya upang siya'y makahanap ng maipapakain at maitutustus sa kanyang pamilya. Makikita sa

walong maikling kuwento ang makabuluhang tampok nito batay sa *Katangian ng Tauhan* ay ang pagiging *Mabuti* kung paano ipinapakita ng mga pangunahing tauhan ang mga bagay na dapat gawin at kung paano nila itinuwid ang mga pagkakamali sa tama upang maging mabuti ang landas ng buhay na walang pagsisisihan at walang pag-aalinlangan.

Pagsusuri sa Makabuluhang Tampok sa mga Maikling Kuwento Batay sa Tagpuan

Talahanayan 4

Pamagat	May-akda	Tagpuan
Kuwento ni Mabuti	Genoveva E. Matute (1951)	Paaralan
Kahiwagaan	Pablo N. Bautista (1952)	Simbahan
Kapangyarihan	Buenaventurada S. Medina Jr. (1953)	Bahay
Paglalayag sa Isang Puso ng Bata	Genoveva E. Matute (1955)	Paaralan
Sugat ng Digma	Pedro S. Dandan (1957)	Palaruan ng munting arena
Ang Mangingisda	Ponciano B. Pineda (1958)	Karagatan
Dayuhan	Buenaventurada S. Medina Jr. (1959)	Bahay
Luntiang Bukid	Eduardo B. Reyes (1960)	Bukiring sinasaka ni Iloy

Sa *Kuwento ni Mabuti* umiikot ang tagpuan sa *paaralan* dahil doon lamang naganap ang bawat pangyayari sa daloy ng kuwento. Ang tagpuan naman ng kuwento ng *Kahiwagaan* ay ang *simbahan* na kung saan doon naunawaan at nakita ng unang panauhan ang kahiwigahan ng buhay. Sa kuwentong *Kapangyarihan*, ang tagpuan nito ay ang *bahay* na kung saan naganap ang bawat pangyayari at karanasan ng mga tauhan sa kuwento. Ang kuwentong *Paglalayag sa Isang Puso ng Bata* ay umiikot ang tagpuan sa *paaralan* kung saan dito naganap ang pangyayari ng unang panauhan na nagbigyan siya ng aral sa kanyang buhay. Ang kuwentong *Sugat ng Digma* naman ay ang tagpuan ng kuwentong ito ay ang *palaruan ng munting arena* na kung saan dito naganap ang masasakit na pangyayaring nagbigay aral sa tauhan ng kuwento. Ang tagpuan sa kuwentong *Mangingisda* ay ang *karagatan* na kung saan dito niya binuo ang kanyang matayog na pangarap at doon din sa lugar nagwakas ang mataas niyang mithiin sa buhay. Umiikot naman ang tagpuan ng kuwentong *Dayuhan* sa kanilang *bahay* na kung saan dito isinalaysay ang pangyayari na puno ng pighati ang bawat karanasan ng mga tauhan. Ang kuwentong *Luntiang Bukid* naman ay naganap ang tagpuan sa *bukid* na sinasaka ng unang panauhan na kung saan doon nagsimula ang kanyang pangarap na maihahon man lamang sa hirap ng buhay ang kanyang pamilya at doon din naganap ang wakas ng kanyang buhay. Makikita sa walong maikling kuwento ang makabuluhang tampok batay sa *Tagpuan* ay nagaganap sa isang *Lalawigan* na kung saan pangkaraniwang nakikita ang mga punongkahoy, mga bukirin at karagatan.

Pagsusuri sa Makabuluhang Tampok sa mga Maikling Kuwento Batay sa Simbolismo

Talahanayan 5

Pamagat	May-akda	Simbolismo
Kuwento ni Mabuti	Genoveva E. Matute (1951)	sulok ng silid aralan
Kahiwagaan	Pablo N. Bautista (1952)	krus
Kapangyarihan	Buenaventurada S. Medina Jr. (1953)	halaman
Paglalayag sa Isang Puso ng Bata	Genoveva E. Matute (1955)	tsinelas
Sugat ng Digma	Pedro S. Dandan (1957)	krus
Ang Mangingisda	Ponciano B. Pineda (1958)	lantsa
Dayuhan	Buenaventurada S. Medina Jr. (1959)	silid-tulugan
Luntiang Bukid	Eduardo B. Reyes (1960)	paruparo

Sa *Kuwento ni Mabuti* ang nalalatay na simbolismo ay *sulok ng silid aralan* na kung saan dito nagkaroon ng koneksyon ng kanilang mga damdamin ng kanyang mag-aaral na si Fe kung saan parehas nilang pinili ang lugar na iyon upang doon maglabas ng kanilang mga saloobin o problema sa pamamagitan ng pagluha. Ang simbolismong *sulok ng silid aralan* ay nangangahulugang isang madilim na sulok, kung saan maihahalintulad sa isang pusong nalulumbay na naghahanap ng kaginhawaan para maibsan ang hinanaing ng damdamin.

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay sumisimbolo sa isang sulok ng silid aralan:

“Noo’y magtatakipsilim na at maliban sa pabugsu-bugsong hiyaan ng mga nagsisipanood sa pagsasanay ng mga manlalaro ng paaralan! ang buong paligid ay tahimik na. Sa isang tagong sulok ng silid-aklatan! pinilit kong lutasin ang aking suliranin sa pagluha. “Doon nya ako natagpuan. Mabuti’t may tao pala rito! ika niyang itinago ang pag-aagam-agam sa tinig. Tila may suliranin ka...mabuti sana kung makatutulong ako.””

Ang kuwento naman na **Kahiwagaan** ang simbolismo ng kuwentong ito ay ang **krus** na nagbigay liwanag sa kanyang saradong isipan na manalangin at buksan ang puso sa pananalig sa maykapal. Ang simbolismong krus ay isang bagay na nagpapahiwatig sa ating pananalig at ito’y tanda ng pagkakaisa natin sa Diyos.

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay sumisimbolo krus:

“Nguni’t parang walang lumalabas na salita sa aking bibig, parang akong biglang naumid. Muli akong sumigaw. Kaginsa-ginsay nabuksan ang pinto, at sa isang tao ang mabilis na pumasok. Dala-dala nito ang itim na krus. “Tumawag ka ng doktor, Damaso... Bakit ka may dalang krus Damaso?” “Alam niyang kailangan ko ang krus,” mahinahong tugon ni Amang Hosep, “Halina, Damaso. Manainga kayo ni Diego.””

Sumisimbolo naman sa kuwentong **Kapangyarihan** ay ang **halaman** dahil sa kanyang poot at galit na itanim sa kanyang kalooban ay hindi niya namamalayan na naging repleksyon na rin sa kanyang sarili ang pinaghihimagsikang ama. Dito makikita na kung ano ang puno siya rin ang magiging bunga kung hindi ka marunong magpatawad sa kakulangan at kasalanan ng iyong mga magulang. Ang simbolismong halaman ay nangangahulugan ng isang buhay ng tao na nakaugnay sa bunga ng pinag-uugatan nito puno.

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay sumisimbolo sa halaman:

“Mabilis ang kanyang paghinga! Mahapdi ang kanyang balat. “Lalaki kang tulad ng kuya mo. Walang silbi. Hampaslupa!” Nadama niyang nawala ang higpit ng pagkapit sa kanyang Kuya Medel niya. Muli siyang napasigaw. “Aray ko po!” “Husto na, Fidel! Husto na” Iyon ang kanyang ina. Ngunit walang kapangyarihan ang tinig ng kanyang ina. Nang maramdaman niyang muli ang tama ng sinturon sa kanyang pigi’y pinigilan niyang makahulagpos ang isa pang aray. Pinagtiim niya ang kanyang magbagang. Sabay sa pag-aalis ng mga kamay ng kanyang Kuya Medel sa kanyang mga bisig ay dumapong muli sa pigi niya ang sinturon. Ngunit ang dapong iyon at tagang nagbuwal sa malusog na halaman takot na nakatanim sa puso niya. Sa isang kisapmata niyang sa pusong iyo’y may bagong halamang sisibol. Hindi takot kundi paghihimagsik. Tumakbo siya papalabas.””

Ang kuwentong **Paglalayag sa Isang Puso ng Bata** ay sumisimbolo ito sa isang **tsinelas** dahil sa tumutukoy ito sa buhay ng munting bata na kung ikaw ang nasa kanyang posisyon ay malalaman mo ang kanyang mahahapding karanasan na dinanas sa kanyang sarili kaya nararapat lamang na pakiramdaman ang iyong ikinikilos upang sa huli’y hindi ka magsisisi sa nagawang kamalian sa buhay. Ang simbolong tsinelas ay nangangahulugang sa isang buhay ng tao hinggil sa ating kasalukuyang kalagayan sa buhay.

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay sumisimbolo sa tsinelas:

“Nang hapong iyo’y hindi siya nagpadulas sa pagitan ng mga hanay ng upuan. Nguni’t siya’y nagtungo sa huling upuan upang kunin ang aking tsinelas, upang paghiwalayin ang mga iyon at upang itapat sa aking mga paa. Nagtungo siya sa tindahang katapat upang ibili ako ng minindal at nagpaiwan siya upang likumin ang mga kagamitan sa paglinis at upang ayusin ang mga iyon sa lalagyan sa sulok. Pinagpantay-pantay rin niya ang mga upuan sa bawa’t hanay, gaya nang kanyang kinamishasnan. Nguni’t hindi siya tumingin sa akin minsan man lamang nang hapong iyon.””

Ang kuwentong **Sugat sa Digma** naman ay nakabatay sa simbolismong **krus** dahil sa ito ang huling nahawakan ng panauhan bago siya nawalan ng buhay at doon din niya hinihingi ang kapatawaran sa kanyang tinuturing na pamilya at iniibig na kaibigan. Dito makikita na huwag mawalan ng pananalig sa

Diyos dahil ang Diyos lamang ang nagbibigay gabay sa atin sa landas na ating tatahakin. Ang simbolismong krus ay nagpapahiwatig sa ating pananampalataya o ating pananalig sa puong maykapal.

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay sumisimbolo sa krus:

“Pinunasan ko ng isang panyo ang alikabok at mumunting batong tumimo sa talukap ng mga mata ni Tonyo. Unti-unting idinilat ang mga iyon. Lumagakog muna ng tubig sa canteen na hawak ni Medyor Kapulong, at hinahabol ang paghingang nagsalita. “Ikaw ba...Insan?” “Ako nga Tonyo. Lakasan mo ang iyong loob! Ihahatid ka naming sa ospita...” “Huwag na...ihingi...mo lang...ako ng tawad...sa kanya...kay Naomi...mi...” Dinama ko ang pintig na pulso ni Tonyo. Tumakas na iyon at lumatag ang mga daliring nakasapol pa rin sa pugot na leeg ng pato. Nakita ko nang mahulog iyon sa lupa. Kinuha ko ang munting krus na palawit ng aking kuwintas at maingat kong ipinaipit sa duguang palad ni Tonyo..”

Sumisimbolo sa isang **lantsa** naman ang kuwentong **Ang Mangingisda** dahil sa gustong abutin ng unang panauhan ang malaking lantsa at hindi na kuntento sa kanyang maliit na bangka. Dito sumasalim na dapat huwag abutin ang di kayang abutin bagkus ay magsikap upang unti-unti mong makuha ang iyong minimithi sa buhay. Ang simbolismong lantsa ay nangangahulugang isang sasakyang pandagat para sa mga mangingisda ito ay mauugnay din sa buhay na kung saan dito pinagkukunan ng mga mangingisda ang kanilang pang-araw-araw na pangangailangan sa buhay.

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay sumisimbolo sa isang lantsa:

“Ang hangaring iyon ay tila malusog na halaman: payabong nang payabong, paganda nang paganda sa lakad ng mga araw. Sa pagkakahiga niya kung gabi’y tila kinikiliti siya ng ugong ng mga motor at makina ng mga pangisdang humahaginit tungo sa kalautan. Ang huni ng mga lantsa’y kapangyarihan manding nagbubuhos ng lakas sa kanyang katawan. “Balang araw, Inang,” ang pagtatapat niya isang gabi,” ay bibili ako ng lantsa.” “Masiyahan na tayo sa isang bangkang nakapagtatawid sa atin araw-araw.” “Magsasama tayo ng maraming salapi, Inang. Di na tayo kukulangin. Giginhawa ka na.”

Ang kuwentong **Dayuhan** ay sumisimbolo sa pagiging isang **dayuhang damdamin** dahil hindi alam ng unang panauhan kung ano ang nangyayari sa kanilang tahanan na para bang may mga lihim na hindi niya nalalaman at tanging ang kanyang mga kapatid lamang ang nakakalaman. Kaya nadama ng unang panauhan na para siyang isang dayuhan na dumaong sa isang lugar na hindi niya kilala ang mga tao rito. Ang simbolismong dayuhan ay nangangahulugang isang taong hindi kapangkat ng isang pamayanan tulad ng isang pamilya na kapag hindi ka marunong makitungo ay magiging dayuhan ka sa isang tahanan.

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay sumisimbolo sa dayuhan:

“Sa pagpasok ko sa silid ni Ama’y lalong sumidhi ang kakaibang damdaming nasa akin, tila ako isang dayuhan sa pook na iyon, at nadama kong dapat akong umalis, tumakas, ngunit walang lagusan. Nasundan ng mata ko si Ina: umupo siya sa gilid ng katreng kinahihimlayan ni Ama. Saglit akong naligalig. Kailangan kong lumayo, sapagkat hindi maiiwasang di tunghan ang nakaratay doon. At kapag nagkagayon, muli kong makakatagpo ang paningin ni Ama, at alam kong sa isang iglap ay makikita ko ang pagkalito roon, at sa isang iglap di’y mabubuhay sa akin ang pagkasindak.”

Ang kuwentong **Luntiing Bukid** naman ay sumisimbolo sa isang **paru-paro** dahil sa walang sariling bukirin o sinasaka ang unang panauhan at lagi lamang sila naghahanap ng madadapuan na bukirin hanggang sa ito’y makahanap. Ang simbolismong **paru-paro** ay nangangahulugan ng isang buhay ng tao, isang kaluluwa o isang bagong buhay na naghahanap ng liwanag para sa sarili nito.

Ang sumusunod na pahayag ang nagpapatunay na ang kuwentong ito ay sumisimbolo sa paru-paro:

“Ang huling nakita ni Iloy, bago nagdilim ang lahat ng kanyang paningin ay ang malabong larawan ng may-dala ng pagkain niya. Nananalunton iyon sa makitid na pilapil nang makakita ng isang paru-paro. Tinangka niyong hulihin ang magandang paruparong nakadapo sa buhay ng palay. Ang paruparoy’y lumipad. Hindi iyon nahuli ni Totong.”

Teoryang pampanitikan

Talahanayan 6

Pamagat	May-akda	Teoryang Pampanitikan
Kuwento ni Mabuti	Genoveva E. Matute (1951)	Teoryang Sikolohikal
Kahiwagaan	Pablo N. Bautista (1952)	
Kapangyarihan	Buenaventurada S. Medina Jr. (1953)	
Paglalayag sa Isang Puso ng Bata	Genoveva E. Matute (1955)	
Sugat ng Digma	Pedro S. Dandan (1957)	
Ang Mangingisda	Ponciano B. Pineda (1958)	
Dayuhan	Buenaventurada S. Medina Jr. (1959)	
Luntiang Bukid	Eduardo B. Reyes (1960)	

Ang pag-aaral na ito ay limitado lamang sap pag-aanalisa sa teoryang pinakatampok sa lahat ng kwento. Ang teoryang nabanggit ay ang teorya na makikita sa lahat ng kwento. Ito rin ang teoryang naging basihan sa pag a-analisa sa nasabing mga kwento batay sa layunin ng pag-aaral.

Ang teoryang pampanitikan ng *Kuwento ni Mabuti* ay ang *teoryang sikolohikal* dahil nagbigay inspirasyon si mabuti kay Fe upang magbigay buhay sa kanyang kalooban na maging matapang at mabuti ang buhay. Sa kuwentong *Kahiwagaan* ang teoryang pampanitikan na ginamit nito ay *teoryang sikolohikal* pa rin dahil nabango ang paniniwala ng unang panauhan ng makita niya ang kahiwagaan ng buhay at kapangyarihan hatid ng pananalig sa Diyos. Ang teoryang ginamit naman sa kuwentong *Kapangyarihan* ay *teoryang sikolohikal* din dahil hindi inaasahan ng unang panuahan na ang kanyang pinaghihimagsikang ama ay sumasalalim sa kanya katauhan na kung saan parehong-pareho sila ng pag-uugali ng kanyang ama. Ang kuwentong *Paglalayag sa Isang Puso ng Bata* ay nakabatay sa *teoryang sikolohikal* dahil nabago ang pananaw ng pangunahing tauhan ng siya’y minsan’y nabigyang aral sa kanyang di kanais-nais na kilos na nagawa sa munting bata. Ang kuwentong *Sugat sa Digma* naman ang teoryang pampanitikan na ginamit ay *teoryang sikolohikal* din dahil nagbago ang ugali ng tauhan sa kanyang pakikitungo sa kanyang tinuturing na pamilya at kaibigan at doon din lamang niya na pagmuni-muni ang mga kasalanan na kanyang ginawa at kahalagahan ng pananalig sa Diyos.

Sa kuwentong *Ang Mangingisda* ang teoryang pampanitikan ginamit ay *teoryang sikolohikal* dahil sa kanyang matayog at mataas na pangarap ay pinipilit niyang abutin ang bituin sa langit na kung saan bumago sa kanyang ugali na gumamit ng di kanais-nais na gawain bilang isang mangingisda. Ang kuwentong *Dayuhan* naman ay nakabatay sa *teoryang sikolohikal* dahil umiikot ang kuwentong ito sa kinikilos ng pangunahing tauhan kung paano siya makitungo sa kanyang pamilya lalong-lalo na sa kanyang ama na maysakit at kung paano nabago ang kanyang pananaw na kung minsan nadama niya na kilala niya ang silid ng ama. Ang kuwentong *Luntiang Bukid* naman ay nakabatay sa *teoryang sosyolohikal* dahil dito nakalahad ang suliraning panlipunan na kung minsan ay tinakot ang unang panauhan sa mga taong nais na angkinin ang ani na tinanim ng unang panauhan at dito rin makikita ang kamalian na kinikilos ng unang panauhan kung paano niya lulutasin ang problema na siyang dahilan din sa kanyang maagang kamatayan. Sa walong maiikling kuwento ang teoryang pampanitikan na namamayani sa mga kuwentong nagwagi ay ang sikolohikal na kung saan tumutukoy ito sa pagbabago ng pananaw ng mga pangunahing panauhan batay na rin sa kanilang mga karanasan o sa mga taong nagbigay inspirasyon sa kanilang buhay.

Estilo ng Pagsasalaysay ng may-akda sa mga maikling kuwento

Talahanayan 7

Pamagat	May-akda	Estilo ng Pagsasalaysay
Kuwento ni Mabuti	Genoveva E. Matute (1951)	Pagbabalik tanaw
Kahiwagaan	Pablo N. Bautista (1952)	Daloy ng Kamalayan
Kapangyarihan	Buenaventurada S. Medina Jr. (1953)	Kronolohikal
Paglalayag sa Isang Puso ng Bata	Genoveva E. Matute (1955)	Pagbabalik-tanaw
Sugat ng Digma	Pedro S. Dandan (1957)	Kronolohikal
Ang Mangingisda	Ponciano B. Pineda (1958)	Kronolohikal
Dayuhan	Buenaventurada S. Medina Jr. (1959)	Daloy ng Kamalayan
Luntiang Bukid	Eduardo B. Reyes (1960)	Kronolohikal

Sa *Kuwento ni Mabuti* ang estilo ng pagsasalaysay ng may-akda ay *Pagbabalik tanaw* dahil sa isinasalaysay nito ang pangyayari sa kuwento hinggil sa kaganapan ng nadaang panahon sa buhay ng guro at mag-aaral. Dito inilalahad ang mga panahon ng kanilang mabibigat na suliranin na kanilang dinadala na kahit ito’y nagbibigay ng kanilang kalungkutan sa puso’t damdamin ay naging matatag pa rin sila sa kanilang buhay at ipinapakita pa rin nila ang kagandahang dala ng buhay. Ang kuwentong *Kahiwagaan* ang estilo ng pagsasalaysay na ginamit ng may-akda ay ang *Daloy ng Kamalayan* dahil sa inilalahad nito ang mga kalagitnaang pangyayari sa kuwento hanggang sa isinalaysay nito ang nakaraang panahon ng kapiling pa ng pangunahing tauhan ang kinikilala niyang ama-amahan at ipinakita rin dito ang kasalukayang pangyayari na siyang nagpapamulat sa pangunahing tauhan sa katotohanang nais makita ng kanyang ama-amahan ang kahiwagaan ng buhay sa pananampalataya ng Diyos.

Ang estilo ng pagsasalaysay na ginamit ng kuwentong *Kapangyarihan* ay *Kronolohikal* dahil sa inilalahad dito ang magkakasunod-sunod na pangyayaring naganap ng mga pangunahing tauhan sa takbo ng kuwento. Dito ipinapakita kung paano nagsimula ang binhi na halamang tumutubo sa puso ng pangunahing tauhan na siyang naging dahilan ng kanyang mapaghimagsik na kalooban na nadala niya hanggang siya’y nagkaroon ng pamilya at nagdulot lamang ito ng di-kanais-nais na bunga.

Sa kuwentong *Paglalayag sa Isang Puso ng Bata* ang ginamit na estilo ng pagsasalaysay ng may-akda ay ang *Pagbabalik tanaw* dahil sa inilalahad nito ang nagdaang pangyayari na siyang nagbigay aral sa guro sa kanyang di sinasadyang kamaliang ikinikilos sa munting batang naghahanap ng pagmamahal sa puso. Ang kuwentong *Sugat sa Digma* ang ginamit na estilo ng pagsasalaysay ng may-akda ay ang *Kronolohikal* dahil inilalahad dito ang magkakasunod-sunod na pangyayaring naganap sa bawat kuwento. Kung paano inilarawan dito ang kanilang paniniwala o prinsipyo sa buhay at kung paano nito ipinapakita ang hantungan ng buhay ng pangunahing tauhan. Sa kuwentong *Dayuhan* ang ginamit na estilo ng pagsasalaysay ng may-akda ay ang *Daloy ng Kamalayan* dahil dito mababatid ang gitnang pagyayayari ng kuwento ng pakikipagtunggali ng pangunahing tauhan sa kanyang nalilitong puso hanggang sa inilalahad nito ang nakaraang pangyayari na siyang nagbalik alaala ng pangunahing tauhan sa mga ibiniling salita sa kanya hanggang humantong sa kasalukuyang pangyayari na pakikipaglaban sa kanyang damdaming dayuhan na siyang dahilan ng paglayo niya ng kalooban sa kanyang ama. Subalit ito’y napalitan naman ng pagkakakilanlan niya sa sarili at sariling ama nang kanyang nadama ang mga salitang binitawan ng kanyang ina sa kahuli-hulihang hantungan ng kanyang ama.

Ang kuwentong *Luntiang Bukid* naman ang ginamit na estilo ng pagsasalaysay ng may-akda ay *Kronolohikal* dahil dito inilalarawan ang mga kaganapan na pangyayari ng bawat tauhan. Dito ipinapakita ang kanilang pagsisikap na makapagbigay ng pangangailangan sa kanilang pamilya. Kung paano sila nagtutulungan sa mga gawain at paano nila ginampanan ang kanilang responsibilidad. Dito rin makikita ang pangyayari paano nakipagtunggali ang pangunahing tauhan sa kanyang pinagsisikapang bunga na siyang dahilan ng kanyang maagang kamatayan. Makikita sa walong maikling kuwento na ang nangingimbabaw na estilo ng pagsasalaysay ay ang *Kronolohikal* na kung saan dito inilalahad ng may-akda ang magkakasunod-sunod na pangyayari ng bawat tagpo ng mga pangunahing tauhan.

KONGKLUSYON

Ang mga natuklasan sa pag-aaral na ito ay ginawang batayan para sa pagbubuo ng sumusunod na kongklusyon:

Sa walong maikling kuwento ang makabuluhang tampok na nangingibabaw sa *paksang-diwa* ay ang *kahalagahan nang isang pamilya* kung paano nila hinarap ang lahat ng pagsubok na dumarating sa kanilang buhay at kung paano sila nagkakaisa. Sa walong maikling kuwento, makikitang ang makabuluhang tampok na nangingibabaw batay sa *katangian ng tauhan* ay ang *pagiging mabuti* sa lahat ng bagay. Sapagkat ang kabuti ay magdadala sa iyo sa tamang landas na tatahakin. Sa walong maikling kuwento, makikitang ang makabuluhang tampok na nangingibabaw batay sa *simbolismo* ay ang isang *krus* na nagbibigay gabay sa tamang landas na tatahakin. Sa walong maikling kuwento, makikitang ang namamayani na teoryang pampanitikan ay ang *sikolohikal* na kung saan ang bawat katangian ng tauhan ay nagbabago dahil na rin sa kanilang aral na natutunan o karanasan na nagbibigay-daan upang ituwid ang lahat ng kamalian. Sa walong maikling kuwento ang makabuluhang nangingibabaw sa estilo ng pagkasulat ng may-akda sa kanilang mga kuwento ay ang *kronolohikal* na kung saan nagaganap ang

magkakasunod-sunod na kaganapan katulad din ito sa buhay ng isang taong nakikipagsapalaran na sa bawat hakbang na tatahakin ay may magkakasunod na pangyayari sa kanyang buhay.

MGA REKOMENDASYON

Batay sa kabuuang kinalabasan ng pag-aaral na ito itinatagubilin ng kasalukuyang mananaliksik ang sumusunod:

1. Ang mga piling maikling kuwento na nagwagi sa Gawad Carlos Palanca ay dapat gawing lunsaran sa pagsusuri ng maikling kuwento dahil kapupulutan ito ng mga aral na magsisilibing gabay hindi lamang sa kabataan kundi pati na rin sa mga nakakatanda.
2. Dapat magkaroon ng seminar-worsyap ang mga guro tungkol sa panunuring pampanitikan upang mas madagdagan pa ang kaalaman sa pag-unawa at pagpapakahulugan sa pagsusuri ng iba't ibang pampanitikan.
3. Dapat magkaroon ng isang website na pampanitikang Pilipino na natutungkol sa mga maikling kuwento o iba pang anyo ng pampanitikan upang sa gayo'y madali lamang makita at mabasa ng mga kabataan ang mga nilalaman nito at mabigyang halaga ang kagandahang dulot ng sariling pampanitikan.

MGA SANGGUNIAN BINANGGIT

- Aguilla, C. (2017). Isang Salamisim sa Pagkabata: Pagsusuri, Pagtuklas, at Ebalwasyon sa mga Kuwentong Pamabata na Nagwagi sa Gantimpalang Palanca sa Panitikan. (Retrieved from: www.google scholar.com, (Accessed last October 17, 2020)
- Arias Rodríguez, G. L. (2017). Students' Language Skills Development through Short Stories. *Íkala, revista de lenguaje y cultura*, 22(1), 103-118.2020). (Retrieved from: www.google scholar.com, (Accessed last March 17, 2021)
- Ariyanti, A. (2016). Moral Values Reflected in “The House on Mango Street” Novel Written by Sandra Cineros. *EFL JOURNAL*, 1(1), 25-48. (Retrieved from: <https://bit.ly/2LShiAK>, (Accessed last October 18, 2020).
- Barrios, J. E. (2015). Pagtatanghal ng Tulang Akeanon: Papel ng Vernakular sa Pag-akda ng Pambansang Panitikan. *Daluyan: Journal ng Wikang Filipino*, (2). (Retrieved from: www.google scholar.com, (Accessed last March 20, 2021).
- Bernales, Rolando A., Lakandupil C. Garcia, Cristina C. Irabagon, Norman R. Abesamis, Joel C. Salvador, Agnes M. Sotto, at Honorato I. Cabrera (2002). *Mabisang Retorika Sa Wikang Filipino*. Mutya Publishing House # 6 Baltazar St., Pacheco Village, Balubaran, Valenzuela City.
- Bulu, M. (2018). Conflict Analysis of the Main Characters in Short Stories by Edgar Allan Poe. *PIONEER: Journal of Language and Literature*, 10(1), 1-12. (Retrieved from: www.google scholar.com, (Accessed last March 27, 2021).
- Calibayan, M. D. (2015). Pagsusuri sa mga Balyung Nakapaloob sa mga Salawikain ng mga Tiruray Sa South Upi, Maguindanao, Philippines. (Retrieved from: www.academia.com, (Accessed last October 17, 2020).
- Catapang, K. G. (2015). Pagsusuri sa mga Alamat at mga Kwentong-Bayan tungkol sa Lawa ng Sampalok at ang Kaugnayan nito sa Araw-araw na Pamumuhay ng mga Mangingisda ng San Pablo, Laguna. (Retrieved from: www.academia.com, (Accessed last October 17, 2020)
- Catipay, T. M. A. (2019). Antolohiya ng mga Sugbu-anun'g Kwentong Bayan: Pagbabalik-tanaw sa buhay at kulturang Cebuano. *Asia Pacific Journal of Multidisciplinary Research*, 7(1). (Retrieved from: www.academia.com, (Accessed last October 21, 2020)
- Constructivism. (Retrieved from: <http://bit.ly/3nI3xlj>, (Accessed last January 15, 2021).
- Cuizon, R. I. (2014). Mga Pag-aaral ng Maiikling Kwento: Isang Meta-Analisis. (Retrieved from: www.google scholar.com, (Accessed last October 17, 2020).
- Demeterio III, F. P. A. (2013). Isang Semyolohikal na Pagsusuri sa mga Kontradiksiyong Nakapaloob sa Panlipunang Kritisismo ni Gloc-9/A Semiological Study on the Contradictions in the Social Criticism of Gloc-9. (Retrieved from: www.google scholar.com, (Accessed last March 26, 2021).
- Fauzan, U. (2016). Structural Analysis of “Peanut & Sparky”: A Short Story by Arnie Lightning as A Way in Understanding Literature. *Journal of English Language Teaching and Linguistics*, 1(1), 39-50. (Retrieved from: <https://bit.ly/3qoV9cs>, (Accessed last November 10, 2020)
- Gawad Palanca. (Retrieved from <http://bit.ly/3inTHUU>, (Accessed last January 15, 2021).
- Gutierrez, Joselito C, Elinor B. Ballesteros, Myka Cerylle S. Vergara, Jamiah

- Hassan, Z. A. H. (2019). The Themes of Anger and Forgiveness in Friedman's Short Stories" Second is best" and" Reunion". *Mustansiriyah Journal of Arts*, 43(87). (Retrieved from: www.google.com, (Accessed last March 15, 2021).
- Isang Kalipunan ng mga Nagwagi sa "Carlos Palanca Memorial Awards" taong 1955-1960
- Izehari, Z. F. (2014). The significance of moral values embedded in English literature component short stories on form five students. (Retrieved from: www.google.com, (Accessed last March 11, 2021).
- Kidd, D. C., & Castano, E. (2013). Reading literary fiction improves theory of mind. *Science*, 342(6156), 377-380. (Retrieved from: www.academia.edu, (Accessed last October 23, 2020).
- Lanuzza Gutiérrez, G. E., Trujillo Obando, E. F., & Merlo Castillo, C. M. (2017). The effectiveness of short stories as a strategy to teach reading comprehension in the tenth grade at Colegio EMAUS Asambleas De Dios during the second semester 2016 (Doctoral dissertation, Universidad Nacional Autónoma de Nicaragua, Managua). (Retrieved from: www.google.com, (Accessed last April 18, 2021).
- Paano magsuri ng maikling kuwento. (Retrieved from: <http://bit.ly/3tpT4OT> , (Accessed last October 2, 2020)
- Panganiban, J.V., Panganiban, C.T., Matute, G.E., Kabigting, C.A., (1995).
Panitikan ng Pilipinas, Rex Book Store
- Pascual, C. J. (2016). Pag-ibig sa Siyudad: Pagbasa sa Sa Iyong Paanan. *HASAAN*, 3(1), 1-1. (Retrieved from: www.google.com, (Accessed last November 11, 2020).
- Santiago, Lilia Q. *Mga panitikan ng Pilipinas*. C & E Publishing House. Quezon City. 2007)
- Sauco, C. P., Papa, N. P., Geronimo, J. R., (2004). *Panitikan ng Pilipinas Panrehiyon*, Makati City: Katha Publisher
- Teodoro, J. I. E. (2013). Ang Dagat ug ang Tawo: Phronesis at Handurawang Moral sa Tatlong Kontemporaryong Maikling Kuwento sa Sebvano. *Malay*, 26(1). (Retrieved from: www.google.com, (Accessed last March 21, 2020).
- Teoryang Pampanitikan. Retrieved from: <http://bit.ly/35J9o3M>, (accessed last 31

PHYSICO-CHEMICAL AND SENSORY PROFILE EVALUATION OF SABA (*Acuminata X balbisiana*) MUSA VINEGAR FOR CURING FISH AND MEAT

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ABSTRACT

The purpose of the study was to evaluate the physicochemical and sensory profile evaluation of saba (*acuminata x balbisiana*) musa vinegar for curing fish and meat. The study was conducted at the Senior High School Food Processing Laboratory, Isulan National High School, Isulan Sultan Kudarat on February 4, 2023. Four treatments were used in this study: Treatment I 100 ml saba vinegar + 300g of fish, Treatment II 75 ml saba vinegar + 300g of fish, Treatment III 50 ml saba vinegar + 300g of fish, and Treatment 4 Control commercial marinated sauce. The samples were evaluated by five (5) groups of panelists composed of experts, male faculty, female faculty, administrative staff, and students. One-way analysis of variance with interaction and the Anova test were used as statistical tools in this study. The formulated fish sauce was extremely liked by the evaluators in terms of appearance, taste, color, and acceptability. The pre-made sauce for fish and meat made from four treatments differed significantly in terms of general appearance, aroma, texture, taste, color, and general acceptability. Moreover, the 5 groups of panelists had greater preferences in terms of texture. The saba banana vinegar was found to be a rich source of acetic acid and phenolic compounds, which are known for their antimicrobial properties. The vinegar exhibited significant antimicrobial activity against various bacteria and fungi, including *Staphylococcus aureus*, *Escherichia coli*, *Salmonella typhi*, and *Aspergillus niger*. The results of this study suggest that saba banana vinegar has great potential as a natural and safe curing agent for fish and meat. Further studies are needed to investigate the long-term effects of using saba banana vinegar as a preservative and its impact on the nutritional quality of the cured products.

Keywords: Curing Fish & Meat, Physico-Chemical, Vinegar, Organic Preservative, Enhanced

INTRODUCTION

Saba banana, also known as *Musa balbisiana*, is a type of banana that is popular in many tropical countries. It is a cooking banana that is often used in traditional dishes and desserts. Saba banana production is an important agricultural activity in Mindanao, the second-largest and southernmost island in the Philippines. The region is known for its favorable climate and soil conditions that are ideal for banana cultivation, and the saba banana is one of the primary crops grown in the area. Saba banana is a versatile cooking banana commonly used in various dishes and desserts in many tropical countries, particularly in Southeast Asia and the Philippines.

Saba banana vinegar is a condiment made from the fermented juice of saba bananas. It is a popular ingredient in Filipino cuisine, where it is used in dishes such as adobo and pancit, as well as in salad dressings and dipping sauces. Saba banana vinegar is typically made by mashing ripe saba bananas and fermenting the juice with sugar and vinegar for several weeks. The resulting vinegar has a sweet and tangy flavor and a deep amber color. Saba banana vinegar is known for its health benefits, as it is rich in acetic acid and antioxidants. "Saba Banana Vinegar: The Next Big Thing in Healthy Living." (<https://www.wheninmanila.com/saba-banana-vinegar-the-next-big-thing-in-healthy-living/>) This article from

When in Manila highlights the health benefits of saba banana vinegar and provides information on where to buy it in the Philippines.

Saba banana vinegar is not only a condiment, but it can also be used as a natural preservative agent. The high levels of acetic acid in the vinegar make it effective in inhibiting the growth of bacteria and other microorganisms that cause spoilage in food.

In the Philippines, saba banana vinegar has been used as a preservative for fruits and vegetables, particularly for pickling or fermenting. It is also used to preserve meat and fish dishes, as well as to extend the shelf life of homemade condiments and sauces.

This study used saba banana vinegar as a preservative agent in making marinades for meat and fish and its acceptability in the province of Sultan Kudarat.

OBJECTIVES

Generally, this study aimed to evaluate the physicochemical and sensory profile of saba banana vinegar as an organic preservative for meat and fish and determined its acceptability.

Specifically, it answered the following objectives;

1. To determine the physicochemical properties of (SN) banana Saba vinegar as a curing solution for fish and meat in terms of acidity, brix, pH
2. To determine the sensory evaluation of banana Saba vinegar for curing in terms of texture, aroma, taste, color, overall acceptability
3. Determine the acceptability of the saba vinegar from five (5) groups of panelists composed of experts, male faculty, female faculty, administrative staff, and student participants.

REVIEW OF RELATED LITERATURE

Description of Saba Banana

Saba bananas are a variety of plantain banana that is commonly grown in Southeast Asia, particularly in the Philippines. The vinegar is made by fermenting the juice of the saba bananas with a culture of acetic acid bacteria, which convert the sugar in the juice into acetic acid, the main component of vinegar.

Research studies have investigated the potential of saba banana vinegar as an organic preservative for meat and fish. One study (Jung et al., 2019) found that saba banana vinegar showed antimicrobial activity against various foodborne pathogens, including *Escherichia coli*, *Salmonella enterica*, and *Listeria monocytogenes*, indicating its potential as a natural preservative agent. The study also found that saba banana vinegar had antioxidant properties, which could help to prolong the shelf life of meat and fish by inhibiting oxidative degradation.

Saba Banana Vinegar

Saba banana vinegar is a type of vinegar that is made from saba bananas, which are a popular variety of banana that is grown in Southeast Asia, particularly in the Philippines. The vinegar is made by fermenting the juice of saba bananas with acetic acid bacteria, which convert the sugar in the juice into acetic acid, the main component of vinegar.

Studies have investigated the potential health benefits of saba banana vinegar. One study (Ariviani et al., 2020) found that saba banana vinegar has the potential as a natural remedy for type 2 diabetes, as it was shown to improve insulin sensitivity and reduce blood glucose levels in rats that were fed a high-fat diet. The study suggested that saba banana vinegar could be a promising dietary supplement for individuals with type 2 diabetes.

Abdullah et al., (2018) investigated the anti-inflammatory and antioxidant properties of saba banana vinegar. The results showed that saba banana vinegar had a higher total phenolic content and antioxidant capacity compared to other types of vinegar, and also showed anti-inflammatory activity in vitro. The study suggested that saba banana vinegar could be a potential natural remedy for inflammation-related disorders.

In addition, saba banana vinegar has been shown to have antimicrobial properties that could be useful in food preservation.

Jung et al. (2019) found that saba banana vinegar had antimicrobial activity against various food-borne pathogens, including *Escherichia coli*, *Salmonella enterica*, and *Listeria monocytogenes*, indicating its potential as a natural preservative agent.

Kulkarni et al. (2021) investigated the effect of saba banana vinegar on the quality and shelf life of chicken meat during refrigerated storage. The results showed that saba banana vinegar was effective in inhibiting the growth of bacteria and reducing the spoilage of chicken meat, as well as improving its sensory properties such as color, texture, and odor.

Rana et al. (2019) examined the effect of saba banana vinegar on the quality and shelf life of Indian mackerel fish during refrigerated storage. The study found that saba banana vinegar was effective in inhibiting the growth of bacteria and reducing the spoilage of the fish, as well as improving its sensory attributes such as color, odor, and texture.

METHODOLOGY

This discussed the materials and methods that will be used for this study. It also covers the data gathering procedure, research instrument, and statistical data.

Table 1. Materials and ingredients

Tools and Equipment	Ingredients
Salinometer	Saba Banana Vinegar (100 ml)
Refractometer	Powdered Garlic (2 Tbsp)
Bowl	Salt (2 tbsp)
Graduated cylinder	Sugar (1 Tbsp)
Measuring Spoon	Powdered pepper (2 tsp)
Measuring Cup	Calmans Juice (1Tbsp)
Plastic Container	

Materials, Equipment and Ingredients

The tools and equipment used in this study were the following; salinometer, refractometer, bowl, graduated cylinder, measuring spoon, measuring cup, plastic container, Saba banana vinegar, powdered garlic, salt, sugar, powdered pepper, and calamansi juice

Experimental Design of the Study

This study utilized a completely randomized design (CRD) consisting of a control and four (4) treatments and three (3) replication.

Table 2. The Formula of Treatment

Treatment 1	100 ml saba vinegar + 300g of fish
Treatment 2	75 ml saba vinegar + 300g of fish
Treatment 3	50 ml saba vinegar + 300g of fish
Treatment 4	Control commercial marinated sauce

Table 2 shows the process of planning an experiment to test a hypothesis. There are three variables or treatments that make affect the validity of the results. Herein, the first set of variables acts as a constant, used to measure the differences of the second set. Yang et al. (2019), in their study, utilized CRD to investigate the effect of different cooking methods on the nutritional and sensory qualities of broccoli. The completely randomized design is useful in the field of food research for investigating the effects of different treatments.

Preparation

Prepare all the Tools, utensils and materials to be used in the study, washed and sterilized for complete cleaning and disinfection. Measure using the correct measurement of all the ingredients and mix in the mixing bowl. set aside. Using the salinometer check the brine solution and for Refract meter to check

the TSS or Brix of the solution Get also the acidity of the product. Pack the product at room temperature and ready to use for the sensory evaluation.

Research Instrument

A ranking test was used to determine the most preferred formulation of core banana chips. The 9-point hedonic scale was used to determine the sensory qualities of the preferred ratio and proportion of the ingredients of Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative in terms of, aroma, color, flavor, texture, and general acceptability.

Table 3. The 9-point Hedonic Scale

RATING	Texture	Aroma	Taste	Color	Overall acceptability	RATING SCALE
Like Extremely						9
Like Very Much						8
Like Moderately						7
Like Slightly						6
Neither Like nor Dislike						5
Dislike Slightly						4
Dislike Moderately						3
Dislike Very much						2
Dislike Extremely						1

Source: Kalva (2014). Comparison of the Hedonic General Labeled Magnitude Scale with the Hedonic 9-point scale. Journal of Food Science Wiley Online library.

Statistical Analysis

The data were gathered from the rating sheet filled in by the experts, faculty and staff, and students of Isulan National High School and analyzed using analysis of variance (ANOVA) and Friedman’s test with a 95% level of significance ($p < 0.05$).

FINDINGS

The study entitled Physico-Chemical and Sensory Profile Evaluation Of Saba (*Acuminata X Balbisiana*) Musa Vinegar For Curing Fish And Meat: An Organic Preservative “The objective of this study was to evaluate the acceptability level of saba banana vinegar as an organic preservative for meat and fish. Specifically, it answered the following objectives; To determine the physico-chemical properties of (SN) banana Saba vinegar as curing solution for fish and meat in terms of acidity, brix, pH, to determine the sensory evaluation of banana Saba vinegar for curing in terms of texture, aroma, taste, color, overall acceptability.

Table 4 Physico Chemical Analysis of Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative.

Physico-chemical of the product	Result
Degree Brix	40° brix
Acidity	5.88 %
pH	2.86

Table 4 shows the Physico Chemical Analysis of the Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative. Degree Brix for measuring dissolved a soluble solid is at 40°, acidity at 5.88%, and pH at 2.86.

Table 5. Texture

Treatments	Mean	Description
T1	7.16	Like Extremely
T2	8.8	Like Extremely
T3	8.3	Like Extremely
T4	8.1	Like Extremely
Computed Mean	8.09	Like Extremely

Table 5 shows the texture of the product based on the Statistical analysis revealed no significant difference among treatments. Treatment two (2) with a mean rating of 8.8 as like extremely, while treatment Three (3) obtain a mean rating of 8.3, followed by treatment four (4) with a mean rating of 8.1 and the least mean observed in treatment one (1) having a mean rating of 7.16.

This implies that treatment two (2) was favored in terms of texture and evaluated to have “like extremely” in texture. The texture is an important quality characteristic and a major factor affecting sensory perception and consumer acceptance of foods. (Bello, et. al., 2013)

Table 6. Sensory Evaluation of Physico-chemical and Sensory Profile Evaluation

Treatment	R1	R2	R3	Total	Mean
T1	7.2	7.4	6.9	21.5	7.16
T2	8.8	8.9	8.7	26.4	8.8
T3	8.2	8.3	7.8	24.9	8.3
T4	8.2	8.1	8	24.3	8.1
Grand Total				97.1	
Grand Mean					8.09

Not significant

Table 6 shows the sensory evaluation of Physico-chemical and Sensory Profile Evaluation. Statistical analysis revealed that three treatments namely treatment 2 had a mean rating of 8.8, treatment 3 with a mean rating of 8.3, and treatment 4 had a mean rating of 8.1 obtained like extremely while treatment 1 has a mean rating of 7.16 obtained like very much. This implies that treatment 2 is favored in terms in physico-chemical and sensory profile evaluation. In a study by Li et. al. (2020), physicochemical analysis and sensory evaluation were used to investigate the effect of different ripening stages on the quality characteristics of longan fruit.

Table 7. Analysis Of Variance

Source Of Variance	Df	Ss	Ms	Computed F	Tabular F0.05%
Treatments	2	0.23	0.115	0.25	3.98
Error	9	4.12	0.46		
Total	11	4.35			

Not Significant

Table 7 shows the analysis of variance for the sensory evaluation of physico-chemical and sensory profile evaluation. Since computed F with a value of 0.25 is lower than the tabular F of 3.98%, null hypothesis is accepted.

Table 8 Aroma

Treatments	Mean	Description
T1	8.26	Like Extremely
T2	8.76	Like Extremely
T3	8.01	Like Extremely
T4	7.63	Like Extremely
Computed Mean	8.18	Like Extremely

Table 8 shows the aroma of Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative is presented in the I table.

Statistical analysis revealed no significance among treatments, treatment two (2) obtain a mean rating of 8.76 and was described as extreme while treatment one (1) obtain a mean rating of 8.26, followed by treatment three (3) with a mean rating of 8.01 and the least mean observed in treatment four. This implies that treatment one (1) was favored in terms of aroma to have a “like extremely” in terms of aroma. The higher odor intensity of vinegar may have contributed to the result. (Zhou, Z, et. al. (2020)

Table 9. Taste

Treatment	R1	R2	R3	Total	Mean
T1	8.2	8.3	8.3	24.8	8.26
T2	9	8.7	8.6	26.3	8.76
T3	8.1	8.0	8.2	24.3	8.1
T4	7.8	7.2	7.9	22.9	7.63
Grand Total				98.3	
Grand Mean					8.18

Table 9 revealed the taste of the Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative is presented in Table 3.

Statistical analysis revealed no significance among treatments. Treatment two (2) obtain a mean rating of 8.53 and describe it as like very much. While treatment four (4) obtain a mean rating of 8.26, followed by treatment three (3) with a mean rating of 8.03 and the least mean observed in treatment one (1) with a mean rating of 7.56.

This implies that treatment three (3) is favored by the group of tasters. This implies that too much vinegar may alter the taste and perception of the consumer. Most consumers prefer a balance vinegary-taste and based on tolerability. (Darzi, J et. al. (2014)

Table 10 Analysis of Variance

SOURCE of VARIANCE	Df	Ss	Ms	Computed F	Tabular F 0.05%
Treatments	2	0.12	0.06	0.24	3.98
Error	9	2.25	0.25		
Total	11	2.37			

Not significant

Table 10 shows the analysis of variance for taste. Computed F with a value of 0.24 is lower than tabular F of 3.98%. Since computed F is lower than tabular F, the null hypothesis is accepted.

Table 11. Sensory evaluation of Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative. (TASTE)

Treatment	R1	R2	R3	Total	Mean
T1	7.2	7.3	8.2	22.7	7.56
T2	8.4	8.5	8.7	25.6	8.53
T3	8.0	7.9	8.2	24.1	8.03
T4	8.2	8.2	8.4	24.8	8.26
Grand Total				97.2	
Grand Mean					8.095

Table 11 shows that when it comes to sensory evaluation of physico-chemical and sensory profile evaluation of saba vinegar for curing fish and meat in terms of taste, T2 got the highest rating of 8.53, followed by T4 with 8.26, T3 with 8.03 and lastly T1 with 7.56. Grand mean is 8.095.

Table 12. Analysis Of Variance

SOURCE of VARIANCE	Df	Ss	Ms	Computed F	Tabular F 0.05%
Treatments	2	0.45	0.225	1.13	3.98
Error	9	1.79	0.199		
Total	11	2.24			

Not significant

Table 12 Analysis of variance shows that computed F with a value of 1.13 is lower than tabular F of 3.98. Since F value is lower, null hypothesis is accepted at 0.05 level of significance. This is evident in the study of Abbas et. al. (2018).

Table 12. Color

Treatments	Mean	Description
T1	8.06	Like Extremely
T2	8.03	Like Extremely
T3	7.56	Like Extremely
T4	8.20	Like Extremely
Computed Mean	7.96	Like Extremely

The table 12 shows the color of Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative is presented in table.

Statistical analysis revealed significance differences. among treatments. treatment one (1) with mean rating of 8.06, while treatment two (2) obtain a mean rating of 8.03, and the least mean observed in treatment three (3) with a mean rating of 7.56 respectively.

This implies that treatment four (4) was favored by the respondents to have a “like extremely” in terms of color.

Table 13. Sensory evaluation of Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative. (COLOR)

Treatment	R1	R2	R3	Total	Mean
T1	8.2	8.0	8.0	24.2	8.06
T2	8.1	7.9	8.1	24.1	8.03
T3	7.3	8.0	7.4	22.7	7.56
T4	8.2	8.4	8.0	24.6	8.20
Grand Total				95.6	
Grand Mean					7.96

Table 13 shows Sensory evaluation of Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative. Wherein treatment 1 has a mean rating of 8.06, treatment 2 has a mean rating of 8.03, treatment 3 has a mean rating of 7.56, while treatment 4 got the highest mean rating of 8.20 this implies that it obtained like extremely.

Results may be due to combination of different processing and preservation which include curing meat which leads to better results of sensory quality. (Gomez, I, et. al., 2020)

Table 14. Analysis Of Variance

SOURCE of VARIANCE	Df	Ss	Ms	Computed F	Tabular F 0.05%
Treatments	2	6.44	3.22	7	3.98
Error	9	4.18	0.46		
Total	11	10.62			

Significance differences

Analysis of variance shows that computed F with a value of 7 is higher than the tabular F value of 3.98%. This means that the null hypothesis is rejected and the alternative hypothesis is accepted which shows that there is a significant difference, similar to the results of Poehler et. al., (2020) and Assefa et. al., (2019).

Table 15 Overall Acceptability

Treatments	Mean	Description
T1	8.3	Like Extremely
T2	8.43	Like Extremely
T3	7.06	Like Extremely
T4	8.23	Like Extremely
Computed Mean	7.93	Like Extremely

Table 15 shows the overall acceptability. The statistical analysis revealed not significance among treatments. Where treatment two (2) with a mean rating of 8.43 described as like very much, while treat-

ment one (1) obtain a mean rating of 8.3, the least mean observed in treatment three (3) with a mean rating of 7.06.

This implies that treatment two (2) were favored in terms of overall acceptability evaluated as “like extremely”. Combination of different preservation methods like curing leads to better results of sensory quality; such that the nutritional value of meat is not compromised. (Gomez, I., et. al., 2020)

Table 16. Sensory evaluation of Physico-Chemical and Sensory Profile Evaluation of Saba (*Musa acuminata x balbisiana*) Vinegar for Curing Fish and Meat: An organic Preservative

Treatment	R1	R2	R3	Total	Mean
T1	8.2	8.4	8.3	24.9	8.30
T2	8.2	8.7	8.4	25.3	8.43
T3	7.0	7.4	6.8	21.2	7.06
T4	8.1	8.4	8.2	24.7	8.23
Grand Total				96.1	
Grand Mean					8.005

Table 16 shows the sensory evaluation of physico-chemical and sensory profile evaluation of saba vinegar for curing fish and meat in terms of overall acceptability. T2 got the highest rate at 8.43 followed by T1 at 8.30, T4 at 8.23 and T3 at 7.06.

Table 17. Analysis Of Variance

SOURCE of VARIANCE	Df	Ss	Ms	Computed F	Tabular F 0.05%
Treatments	2	0.28	0.14	0.34	3.98
Error	9	3.71	0.41		
Total	11	3.99			

Not significant

Anova shows that computed F with a value of 0.34 is lower than tabular F of 3.98. It shows that the null hypothesis is accepted and there is no significant difference among the treatments. (Abbas et. al., 2018)

SUMMARY CONCLUSION AND RECOMMENDATIONS

Summary

A study on the “**Physico-Chemical and Sensory Profile Evaluation of Saba (Acuminata X Balbisiana) Musa Vinegar for Curing Fish And Meat: An Organic Preservative**” was conducted at Food Processing Laboratory, Isulan National High School, Isulan, Sultan Kudarat.

Using the method of experimental research, the general objective of the study was to determine the Acceptability of Saba Vinegar for curing fish and meat, especially the researchers aimed to know the acceptability of Saba Vinegar for curing fish and meat in terms of color, taste, aroma, and general acceptability, and to determine the shelf life.

The results of the study were summarized as follows:

1. The physicochemical evaluation of saba vinegar shows that Degree Brix for measuring dissolved a soluble solid is at 40°, acidity of 5.88%, and pH at 2.86.
2. In terms of Color Treatment Four (Control commercial marinated sauce) and Treatment, One (100 ml saba vinegar + 300g of fish) have the highest mean rating of 8.2 and 8.06 respectively described as being “appealing” in color compared to Treatment 2 (75 ml saba vinegar + 300g of fish) and Treatment 3(50 ml saba vinegar + 300g of fish) with the lowest mean rating of 8.03 and 7.56 respectively.
3. In terms of taste, treatment 2 (75 ml saba vinegar + 300g of fish) was rated by the panelist as “tasty” having a mean of 8.53. Treatment four (Control commercial marinated sauce) with a mean rating of 8.26 compared to Treatment 3 (50 ml saba vinegar + 300g of fish) and Treatment one (100 ml saba vinegar + 300g of fish) had a mean rating of 8.03 and 7.56 respectively.
4. In terms of Aroma, Treatment 2 (75 ml saba vinegar + 300g of fish) was favored most by the board of tasters with a mean rating of 8.76 followed by Treatment One (100 ml saba vinegar + 300g of

- fish) that have a mean rating of 8.26, and Treatment 3 (50 ml saba vinegar + 300g of fish) and Treatment 4 (Control commercial marinated sauce) have a mean rating of 8.1 and 7.63 respectively.
5. In terms of Texture Treatment 2 (75 ml saba vinegar + 300g of fish) and Treatment 3 (50 ml saba vinegar + 300g of fish) have the highest mean rating of 8.8. and 8.3 respectively compared with other Treatments and described to be appealing in “texture.”
 6. Regarding general Acceptability, the results of the study revealed that Treatment 2 (75 ml saba vinegar + 300g of fish) was the most acceptable with a mean rating of 8.43.
 7. For the shelf-life analysis, processed Saba Vinegar for curing fish and meat is packed in sterilized bottles, samples were stored in a cabinet and were observed regularly. The observation was done daily to evaluate the product in terms of color and presence of molds, and bacteria as well as to check its spoilage.

CONCLUSION

Based on the results of the study the physico-chemical evaluation of saba banana vinegar shows a brix of 40°, acidity of 5.88%, and a pH of 2.86.

Sensory evaluation shows that in terms of color Treatment 4 (control) and Treatment 1 were acceptable and appealing. Treatment 2 was acceptable in terms of taste, aroma, texture, and general acceptability.

Analysis of variance states that there is no significant difference among the treatments except for color which shows a significant difference.

Results show that saba vinegar could be utilized in making premade sauce for curing meat and fish.

RECOMMENDATION

Based on the result of the study, the researcher would like to recommend Saba Vinegar for curing fish and meat to be commercialized in making a premade sauce for curing fish and meat. Treatment Two (2) has evidence of its appealing color, taste, and acceptability.

Further study on the improvement of the developed product is recommended.

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Jenno L. Godinez, Ad A. Javison, Ma. Josephine C. Calderon, Et. Al.
Researchers

REFERENCES

- Estioko-Griffin, A., Lescano, G., & Habito, R. C. (2019).** Nutritional and health benefits of saba banana (*Musa sapientum* L.). *Food Science and Nutrition*, 7(10), 3172-3183. doi: 10.1002/fsn3.1188
- Quimio, T. H., Chang, Y. H., & Chou, C. C. (2015).** Antioxidant properties and total phenolic content of saba banana (*Musa sapientum* L.) vinegar. *Food Science and Technology Research*, 21(3), 367-376. doi: 10.3136/fstr.21.367
- Garcia, C. C., Serato, A. B., Chang, Y. H., & Chou, C. C. (2016).** Use of saba banana (*Musa sapientum* L.) vinegar as a preservative agent in chicken meat. *LWT-Food Science and Technology*, 72, 108-115. doi: 10.1016/j.lwt.2016.04.046
- Kalva (2014).** Comparison of the Hedonic General Labeled Magnitude Scale with the Hedonic 9-point scale. *Journal of Food Science Wiley Online Library*.
- Darzi, Julia, Frost, Gary S., Montaser, Rugaia, Yap, Joyce M., Robertson, Derize.** Influence of tolerability of vinegar as an oral source of short-chain fatty acids on appetite control and food intake; *international journal of obesity* 38(5), 675-681, 294 – Google scholar
- The Encyclopedia Britannica, Vol. 19, 15th Edition 1768.

TRAINING NEEDS ASSESSMENT OF BARANGAY OFFICIALS IN THE MUNICIPALITIES OF TORRIJOS AND BUENAVISTA, MARINDUQUE

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ABSTRACT

This research utilized a quantitative method thru descriptive normative survey to assess the training needs of barangay officials represented by twenty-five (25) Punong Barangays in Torrijos and fifteen (15) Punong Barangays in Buenavista. The primary data collection methods were questionnaires and interviews. The result revealed that most punong barangays are males and high school graduates who have reached more than six years in the service, overseeing their respective barangays and attended training for one to three days as lengthiest training that they had participated. With the educational background, most of them need training with 100% both barangay officials from Torrijos and Buenavista. They affirmed that they met problems such as late submission of reports, communication breakdown, making resolutions, project proposals, ordinances, and minutes. The needs for training among barangay officials in the two municipalities signify they possess knowledge/skills, but development is still required based on the assessment made. This research concludes that the educational qualifications of barangay officials and the problems met need enhancement training based on their needs through a well-planned training program. Thus, the researcher recommended that the presentation of the training program to the Office of the Department of Interior and Local Government (DILG) in the municipalities of Torrijos and Buenavista for proper dissemination and action.

Keywords: training needs, training program, punong barangay, educational qualifications

INTRODUCTION

The general concept of the word barangay comes from the Philippines; other countries use the term electoral district or division, which varies across countries, and some prefer to call it ward.

Barangay is the smallest administrative division in the Philippines headed by Punong Barangay (barangay captain) assisted by the six (6) Barangay Kagawad (councilmen) who serve at the forefront in the community as embedded in the Local Government Code of 1991, which redefined the roles and responsibilities of the Sangguniang Barangay or otherwise known as Barangay Council, the lowest form of government in the Philippines. They maintain public order and enforce local ordinances to promote the general welfare of the community.

Since the barangay system plays a vital part in the Philippine local governance, its significance lies in addressing local governing issues, from laws to implementation. As stated in the Local Government Code of the Philippines Book III Local Government Units Section 384 that the primary role of the barangay is planning and implementing unit of the government policies, plans, programs, and activities in the community. Barangay officials as captains and crew of the ships at the barangay level are mandated with multiple powers and responsibilities, such as provision of basic health thru the support of Barangay Health Workers, peace and order with Barangay Tanods, dispute resolution as chairman of lupon tagapamayapa, act in the legislative, executive, and quasi-judicial functions in the community. As stated by

Flores (2022), officials of the 42,046 barangays in the Philippines need to undergo capacity-building training under the administration of President Ferdinand Marcos, Jr.

In addressing such issues and concerns, Boysillo (2017) recommended that barangay chairpersons may contribute efforts to involve themselves in training and seminars relative to efficient and effective governance. Moreover, enhancement of performance and presence of harmonious domination in various barangays in metropolitan as recommended by Sadera (2019), may include responsiveness, efficiency and effectiveness, and legitimacy and voice on participation and consensus orientation. Likewise, the Training Needs of Barangay Officials (2016) explained that local government officials, specifically at the barangay level, with their limited educational background and training, may hamper their performance in their unit.

Based on the survey, there are local governing issues in the municipalities of Torrijos and Buenavista. During and after the pandemic, there is a limited number of seminars and training for barangay governance. Elected and appointed barangay officials need immediate attention in the public services such as local legislation, development planning, training on records management, basic computer operation, and close collaboration with other non-government organizations for specific programs and projects in the barangays. Additionally, barangay tanod, barangay health workers and nutrition scholars and daycare workers need skill enhancement training. However, the development of skills in the public service lies in the hand of the barangay officials themselves, but few will be able to take it personally. Although there is some financial support from the LGU and the barangay, pieces of training relative to the position of a public servant will always depend on the availability of funds in each barangay.

In this context, this research harmonized the very purpose of conducting training needs assessment among elected and appointed barangay officials and the plans and programs of the national government toward realizing a common goal for local governance.

STATEMENT OF THE PROBLEM

Generally, this research aimed to assess Barangay Officials' training needs in the municipalities of Torrijos and Buenavista, Marinduque, Philippines. Specifically, it aimed to answer the following questions:

1. What is the profile of barangay officials in the municipalities of Torrijos and Buenavista in terms of:
 - 1.1 gender;
 - 1.2 educational attainment;
 - 1.3 age;
 - 1.4 length of service; and
 - 1.5 duration of training attended?
2. Does the profile of barangay officials need training?
3. What are the training needs of barangay officials in the municipalities of Torrijos and Buenavista in the province of Marinduque? Does the profile of
4. What training program could be proposed as a result of this study?

Thus, analysis of the profile and problems of the respondents through training needs assessment will benefit all the community leaders, workers, and folks since the result will provide a good source for training program.

METHODOLOGY

This research was a descriptive normative that analyzed the training needs of barangay officials in the municipalities of Torrijos and Buenavista, consisting of 25 barangays in Torrijos and 15 barangays in Buenavista. The respondents were purposely identified through total enumeration, where all punong barangays served as the respondents to contribute data in assessing the needs of other elected and appointed officials in the barangay.

The primary data collection of this quantitative study was a survey questionnaire to assess the needs of the participants and a semi-structured interview to solicit additional information. The researchers gathered, collected, and analyzed the data based on the research purpose.

The research instrument was a self-made tool by the researchers and utilized in the municipality of Sta. Cruz. It consists of two parts. The first part deals with the personal profile of the respondents, while the second part is a survey questionnaire composed of seven questions. The researchers employed Likert scale using the number one (1) as least indicator, represents no knowledge or skill, while the number 5 (five) signifies fully knowledgeable or skilled. The survey questionnaire used English and Filipino languages for the respondents to understand the content.

The researchers used Cronbach’s Alpha to test the reliability of the self-made tool. The evaluation was composed of four scales to determine whether the barangay officials were satisfied and interested in the content of the self-made tool. A score of 3 or above signifies satisfaction and interest, while below three (3) is considered less satisfied and less interested. The results of the validity and reliability test (with a 0.05 significance level) of the questionnaires were made after exclusions of invalid items. Moreover, all of the items in question except for question no. 2 in part B have been valid since the value of the r -table $<$ r – count for each question. While the value of Cronback’s alpha was 0.819, thus, this self-made tool included is very reliable.

FINDINGS

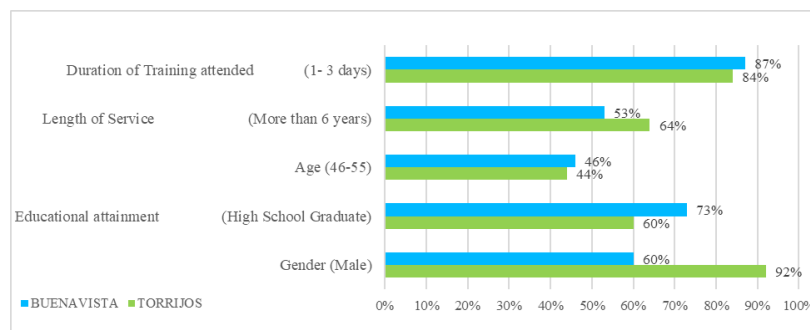


Fig. 1. Profile of Punong Barangays in the municipalities of Torrijos and Buenavista, Marinduque

Based on the profile of punong barangays in the municipalities of Torrijos and Buenavista, the majority of punong barangays are managed and headed by males, with 92% from Torrijos and 60% from Buenavista, which implies that the barangay government in said municipalities are still a male-dominated enterprise, majority are high school graduates (60%) from Torrijos and (73.3%) from Buenavista. The age of punong barangays from the two municipalities belongs to the bracket of 46-55, with 44% and 46%, respectively. However, these punong barangays have reached more than six (6) years in the service, overseeing their respective barangays with 64% for Torrijos and 53% for Buenavista. These findings show that leaders of the barangays in the two towns are all literate, politically mature individuals and well-experienced frontrunners in the community.

The study also revealed the duration of training of punong barangays, wherein they attended training for one to three days as the lengthiest training they had participated with 84% (Torrijos) and 87% (Buenavista). The data further show that minimum hours were already allocated to improve their skills in leading the community.

Thus, the profile of barangays officials in the two municipalities needs upliftment, proven by the Training Needs of Barangay Officials (2016), which explained that local government officials, specifically at the barangay level, with their limited educational background and training, may hamper the performance in their unit. On the other hand, this research assessed the training needs among barangay officials in the municipalities of Torrijos and Buenavista. The researchers assessed the 25 barangays in Torrijos, consisting of 25 barangay captains. They exposed the various training participated by punong barangays. Public servants from Torrijos are already exposed to the top three topics for training, such as the technical aspect of government administration, parliamentary procedure, and government policy, needed

in leading their barangays and serving with competencies in the community. On the other hand, officials of Buenavista were aware in the following training: public safety, leadership training, barangay legislation, good governance, and development planning.

However, some barangay officials from Torrijos prioritized other training like writing project proposals and minutes, good governance, data privacy act, public safety, and development planning. Similarly, Buenavista's barangay officials acquired some background in the barangay justice system, technical aspects of government administration, basic finance, writing of project proposals and minutes, and laws and orders.

Acquisition of knowledge and skills from the training they had attended is already essential in their duties in the public service. Consequently, some performance gaps continue and need solutions with appropriate enhancement and collaboration from within and outside the jurisdiction.

This study also unveiled the usual or conventional problems of barangay officials from the municipalities of Torrijos and Buenavista. Late submission of reports is the most common problem, while communication breakdown seems inescapable. Besides, the presence of insufficient knowledge in making resolutions, project proposals, ordinances, and minutes of the meetings and lack of human support are evident in the responses from the 25 barangay officials in Torrijos. Additionally, they confirmed that problems among other officials include inconsistency of financial reports, unliquidated expenses, and the kanya-kanya system. On the other hand, fifteen (15) barangay officials from Buenavista revealed that their problems include malpractice in planning, low standard of work performance, unsystematic discourse during meetings, unawareness of the laws and policies, and mismanagement of documents.

Data implied that time constraint seems to be a matter in reports, where barangay officials need proficiency in time management. Besides, proficiencies and competencies in writing technical papers like resolutions, proposals, ordinances, and minutes of the meetings require more training, exposure, and practices, which are considered job-essential skills upon assuming any position in the field of barangay administration. On the other hand, barangay officials also experienced failure to exchange information, which led to communication breakdown and an issue because they are composed of people with varied differences, especially academic-related skills.

Other issues and concerns from both barangay officials of Torrijos and Buenavista entail multitasking of barangay officials and additional competencies in parliamentary procedures and basic finance.

Table 1. Mean distribution of training needs of barangay officials in the municipalities of Torrijos and Buenavista

Training Needs of Barangay Officials in Torrijos and Buenavista	Weighted Mean		Interpretation
	Torrijos	Buenavista	
1. Technical aspects of government administration	3.22	3.38	Possess some knowledge/skill but development is required
2. Good governance	3.71	3.29	Good level of knowledge/ skills displayed, with a little development required / Possess some knowledge but development is required
3. Basic Finance	3.22	3.29	Possess some knowledge/skill but development is required
4. Parliamentary procedures	3.25	3.27	Possess some knowledge/skill but development is required
5. Public safety	2.16	3.46	Possess some knowledge/skill but development is required
6. Writing of Project Proposal & Minutes of the meeting	3.35	3.23	Possess some knowledge/skill but development is required
7. Government Policy	3.43	3.50	Possess some knowledge/skill but development is required
8. Leadership Training	3.83	3.07	Good level of knowledge/ skills displayed, with a little development required/ Possess some knowledge but development is required
9. Collaborative and community-based governance practices	3.50	3.54	Possess some knowledge/skill but development is required
10. Barangay Legislation	3.50	3.40	Possess some knowledge/skill but development is required
11. Data Privacy Act / Full Disclosure Policy	3.53	3.20	Possess some knowledge/skill but development is required
12. Writing of Barangay Ordinances and Resolution	3.38	3.36	Possess some knowledge/skill but development is required
13. Laws and Orders	3.53	3.31	Possess some knowledge/skill but development is required
14. Basic documentary analysis, reading, etc	3.40	3.33	Possess some knowledge/skill but development is required
15. Development Planning	3.56	3.33	Possess some knowledge/skill but development is required
16. Barangay Justice System	3.82	3.17	Good level of knowledge/ skills displayed, with a little development required/ Possess some knowledge but development is required
17. Upgrading and Upscaling of Computer Skills	3.22	3.38	Possess some knowledge/skill but development is required
TWM	3.40	3.32	Possess some knowledge/skill but development is required

Table 1 presents the training needs of barangay officials in Torrijos and Buenavista. The majority of punong barangays ascertained that they possess some knowledge/ skills in some aspects, but not all, which require the development of skills in all the presented topics for training except good governance, leadership training, and the barangay justice system because they affirmed that they possess a good level of knowledge/skills with little development required.

The affirmation from the barangay officials of Torrijos signals that all the above-cited topics for training compel budget and time allocation, personal preference, and systematic planning to grow professionally for the progress of the local community.

Furthermore, data present the training needs of barangay officials in the municipality of Buenavista. The table also shows that all punong barangays from Buenavista responded that they possess some knowledge/ skills, but development is still required in all the presented topics for training.

The assertion from the barangay officials of Buenavista indicates that all the stated topics for training convince them that as public servants, they need to prepare themselves to grow professionally to minimize issues and problems confronting their act of serving the public with systematic planning, scheduling, and allocating of funds for the success of barangay governance.

The results were supported by the DILG (2013), as stated by Sec. Sueno, the Department of the Interior and Local Government (DILG) in the Philippines, is also conducting TNA on various competencies of the employees towards organizational competence and effectiveness.

Hence, the proposed training program for Torrijos and Buenavista is hereby presented.

TRAINING PROGRAM FOR BARANGAY OFFICIALS IN THE MUNICIPALITIES OF TORRIJOS AND BUEVAVISTA, MARINDUQUE

Rationale:

Torrijos and Buenavista are the two (2) of the six (6) municipalities in the province of Marinduque. They are the target beneficiataries of the training program, which intends to capacitate the accountability, transparency, and participation of the Local Government Units, specifically the 25 barangays in Torrijos and 15 barangays in Buenavista. This training program is anchored on the programs and projects of the Department of the Interior and Local Government (DILG) named GREAT or Grassroots Renewal and Empowerment for Accountable and Transparent, whose aims are personal and managerial improvement and leadership skills. It manifests the tenets of good local governance, said by the DILG (2018), as emphasized by the OIC Secretary Eduardo M. Ano. Besides, the DILG (2018) also cited an excerpt from the statement of Assistant Secretary and Spokesperson Jonathan Malaya that the GREAT program also seeks for barangay governments to show measurable positive performance towards good governance; and demonstrate and contribute to the desired public administration values, such as transparency, accountability, integrity and citizen participation.

Relative to this, the training program entails support from the Marinduque State College to conduct an extension program to mitigate the existing gaps among barangay officials. The MSC experts can outspread on-hand information and skills and will ensure judicious human resources.

Purpose:

To provide guidelines and policies for barangay officials who will participate in the MSC training program.

Policy:

The Marinduque State College is committed to effective and efficient barangay officials, such as essential skills thru capacity building and workshops. The program will provide all barangay officials with training and development opportunities to perform their official duties as public servants in barangay administration and local governance. The highest priority in the training program: (1) promoting efficiency, effectiveness, and competency for local government administration; and (2) advocating high performance on selected academic-essential skills.

Applicability:

Upon approval of the Department of the Interior and Local Government and Local Government Unit of Torrijos and Buenavista, all barangay officials may attend the training program, including the treasurer and secretary, who may also participate but require the approval of the barangay captains before their needs.

TRAINING CATEGORIES

Training for barangay officials is categorized based on their needs.

Job-Related Essential Skills	Barangay Financial Management and Budget Proposal
	Barangay Records Management and Time Management System
	Writing of Project Proposal
	Writing of Minutes of the Meeting
	Writing of Barangay Ordinances
	Writing of Resolutions
	Upscaling and Rescaling of Computer Skills
Capacity Building in Barangay Local Governance and Administration	Barangay Public Safety
	Barangay System of Public Administration
	Parliamentary Practice and Procedures
	Barangay Local Legislation
	Data Privacy Act and Full Disclosure Policy
	Laws and Orders
	Collaborative and community-based governance practices
	Barangay Development Planning

A. Job-Related Essential Skills

This training is designed to enhance the essential skills of barangay officials and will vary by position. The expected participants will be the appointed Barangay Secretaries and Treasurers.

B. Capacity Building in Barangay Local Governance and Administration

This training will improve the ability of barangay officials in an institution or community to perform more effectively and efficiently. These are pieces of training that induce them to fulfill their mission as public servants. Attendees will be Punong Barangays and Kagawad.

ROLES AND RESPONSIBILITIES

The DILG and Municipal Local Operations Officer will work with the Marinduque State College to create a training development plan. They will identify development areas and formulate a plan to improve their skills. Upon area identification, the President of the Liga ng mga Barangays (Torrijos and Buenavista) and MSC will discuss the next steps, including MOA signing between and among the DILG, MLGOO, Liga ng mga Barangays, and MSC; (2) planning; and (3) implementation of the training. The Department of the Interior and Local Government (DILG), through the MLGOO of Torrijos and Buenavista, will assist the barangay officials and MSC in the review of the development plan to ensure that all the topics for each workshop and activities in the training program. The proponents may consider the availability of funds to cover any training expenses if needed. Because of this, barangay officials may need to prioritize training requests. They are responsible for completing all forms, including registration, implementation, and assessment. All the responsibilities of the program initiator, like MSC, will be stated in the Memorandum of Agreement.

CONCLUSION

Based on the findings, the researchers conclude that:

- Barangay officials from Torrijos and Buenavista need to undertake training based on the result of the Training Needs Assessment to uplift their professional qualification thru a well-planned training program.

RECOMMENDATIONS

To promote the results of this research project, the researcher plans to:

- Present the training program to the Research and Extension Council of the College to serve as an extension program of the Institute of Governance and Public Affairs in particular and MSC in general.
- Present and submit the training program to the Office of the Department of the Interior and Local Government (DILG) through the Local Government Unit (LGU) in the municipality of Torrijos and Buenavista for proper action and dissemination.
- Present the results in the international forum and be published upon approval by the board of interrogators.

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Special thanks to the Municipal Local Government Operations Officers of Torrijos and Buenavista, Mr. Joemar Fidelino and Ms. Bernadette Lasic, respectively, who extend special support to this research project for the future success of the extension project to be rendered to the officials of barangays in the two municipalities in the province of Marinduque.

REFERENCES

- Boysillo, S. (2017). Governance of the Barangay Chairpersons in the Municipality of Ubay, Bohol. *International Journal of Business and Management Studies*. Vol 9, No 1, 2017 ISSN: 1309-8047 (Online). Data retrieved from <https://dergipark.org.tr/en/download/article-file/440187>. Date retrieved: 4/30/2021.
- Department of the Interior and Local Government (2018). Retrieved from: <http://www.dilg.gov.ph/news/DILG-Training-for-newly-elected-barangay-officials-should-be-strictly-onsite/NC-2018-1149>. Date retrieved: August 15, 2018
- Flores, H. (2022). Barangay Officials to undergo training for prudent spending. *The Philippine Star*. Data retrieved from: <https://www.philstar.com/nation/2022/06/26/2190911/barangay-officials-undergo-training-prudent-spending>. Date retrieved: May 22, 2023.
- Sadera, J., et al. (2019). Harmonizing good governance across barangays in a metropolitan setting. Data retrieved from: https://www.researchgate.net/publication/334319640_Harmonizing_good_governance_across_barangays_in_a_metropolitan_setting. Date retrieved: 5/06/2021.
- The Local Government Code of the Philippines Book III^{SEP} Local Government Units. Data retrieved from https://dilg.gov.ph/PDF_File/reports_resources/dilg-reports-resources-2016120_5e0bb28e41.pdf. Date retrieved 05/4/2021
- Training Needs of Barangay Officials (2016). Office of the Personnel Management (United States) New Your Washington, DC. Retrieved from: <https://studymoose.com/training-needs-of-barangay-officials-essay>. Date retrieved: August 15, 2018

STUDENTS' EXPERIENCES ON BLENDED LEARNING AT ISABELA STATE UNIVERSITY-SYSTEM

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ABSTRACT

This descriptive-correlation study aimed to determine the experiences in blended learning of the 394 purposively selected students at Isabela State University-System. The instrument for blended learning experiences was adopted from Chang and Fisher (2003). Frequency counts and percentage distribution were used for the description of the respondent's profile, mean, Kruskal Wallis h-test, Mann Whitney U, and Kendall's tau b were used to analyze the gathered data. Results disclosed that most of the respondents belong to the first and third year level and majority were female. Majority of the respondents considered messenger and google classroom as their learning modality. Furthermore, students said that they "often" experienced access, interaction, response and result in the conduct of blended learning. There is no significant difference in the experiences of the students in the conduct of blended learning and their sex. It is recommended that the students may use uniform learning modality. University officials may also look into the challenges which were always and often experienced to ensure that quality instruction is provided and quality education is delivered. Faculty members and University officials may implement the ISUE Orange as learning modality system used in Isabela State University-System.

Keywords: flexible learning, experiences, challenges, prevailing learning modality

INTRODUCTION

In education, the teaching and learning process is continuously evolving and changing. Particularly, these evolutions and changes are being influenced not only by pedagogical and sociological trends but also by technological developments. Progression of technology affects how academic instruction is being planned, implemented, facilitated, monitored, and evaluated.

Traditionally, the delivery of instruction is more of a teacher-centered where students are just receptacles of knowledge. They are large consumers of information being delivered by the teachers; thus, teachers are the primary porters of information. When the internet and other advanced technology become an integral part of the educational system, the landscape of education has changed. Many of the teachers and students are now becoming digital natives who are comfortable to teach and learn using Information Communication Technologies (ICTs). The development of digital platforms and social media permits both teachers and students to interact, communicate, collaborate, exchange ideas, and learn with one another both synchronous and asynchronously (Kholifah, 2020).

As defined, online modality is a flexible learning mode which is electronic-based and which uses available online classrooms for the delivery of instruction. Learning materials are in digital format such as webcast, podcast, videos, audio, and other open educational resources or OERs. To aid online learning, CHED launched a web-based platform, PHL CHED Connect that provides free learning materials for college students. Meanwhile, offline modality is a flexible learning mode that does not use internet connectivity at all. Learning is done through printed modules or uses digital forms such as video and audio placed in storage devices. On the other hand, blended is a type of flexible learning which is a combination of online and offline modes. Online technology will be used for delivering lessons, while other

classroom activities will be done offline using printed modules, video tapes, storage devices, and learning packets (Magsambol, 2020).

At the Isabela State University, Memorandum Order No. 252. Series 2020 was issued by the University President requiring all Deans, Academic and Related Affairs Directors, Program Chairs and the concerned faculty members to ensure that students who do not have access to online classes and other means shall be given priority on using modules during the Covid-19 Pandemic. Also, to explore all possible means in order to reach out the students. Maximize module-based scheme and lessen virtual based interactions to at least unburden the concern on poor interconnectivity. To ensure that no one shall be left behind, the President encouraged the faculty members of Isabela State University to exercise utmost leniency in the delivery of instruction without sacrificing quality while considering the financial constraints of our students.

While much is now known about online learning, there is limited research conducted on students experience during Covid-19 pandemic. Hence, this study may provide inputs in improving the learning management system (LMS) used at the Isabela State University System, enabling the teaching-learning process during the pandemic more relevant and accessible to all.

Considering the aforementioned facts and scenarios caused by the occurrence of coronavirus in the environment it is indeed, a great challenge for higher education institutions particularly the Isabela State University System to change its learning modality from face-to-face to blended learning. While it is true that blended learning has numerous strengths, benefits, and advantages, the readiness and experiences of students towards blended learning is highly significant to know, yet it is unknown. Thus, this study was conducted.

Statement of the Problem

Generally, the study aimed to determine the experiences of the students in flexible learning at the Isabela State University - System.

Specifically, it sought to answer the following questions:

1. How may the profile of the respondents be described in terms of:
 - 1.1 Sex; and
 - 1.2 Year level?
2. What are the prevailing learning modality based on the perception of the respondents?
3. What are the experiences of the respondents in flexible learning based on the following:
 - 3.1 Access;
 - 3.2 Interaction;
 - 3.3 Response; and
 - 3.4 Results?
4. What is the difference on the experiences of the respondents in blended learning when they are grouped according to sex?

LITERATURE REVIEW

The occurrence of surge of the coronavirus disease or most popularly known as “Covid-19” pandemic in the country and elsewhere in the globe caused a massive impact in all levels of the academic set-up. The Philippine educational system shifted to online learning in the hope of providing continuous learning for their students. This is of course with utmost consideration of everyone’s health condition and survival as we traversed safely amidst this pandemic situation.

As information communication technologies (ICTs) become stronger and easier to utilized, it progressively penetrates academic activities in higher education institutions. The dynamic fast-changing world of ICTs has led the information of education from traditional face-to-face and teacher-centered to e-learning and learner-centered academic instruction. This transformation can be traced from Education 1.0 to Education 4.0

Education 1.0, like the first generation of the web, is largely a one-way process. Students go to universities to get education from professors who supply them with information in the form of a stand-up routine that may include the use of class notes, handouts, textbooks, videos, and in recent times the

World-Wide Web. Students are large consumers of information resources that are delivered to them, and although they may engage in activities around those resources, those activities are for the most part undertaken in isolation or isolated local groups. Rarely do the results of those activities contribute back to the information resources that students consume in carrying them out.

Additionally, Education 2.0, like Web 2.0, permits the interactivity between the content and users, and between users themselves. With Web 2.0, Users move from just accessing information and content to being able to directly interact with the content through commenting, remixing, and sharing it via social networks. Web 2.0 also sees the development of social media which permits users to communicate directly with one another both synchronously and asynchronously. Similar to Web 2.0, Education 2.0 includes more interaction between the teacher and students, student to student, and student to content and expert. In fact, it has progressive, humanistic roots where the human element is important to learning. Education 2.0 also happens when the technologies of Web 2.0 are used to enhance traditional approaches to education. It involves the use of blogs, podcasts, social bookmarking, and related participation technologies but the circumstances under which the technologies used are still largely imbedded within the framework of education 1.0.

On the other hand, Education 3.0 was based on the concept of Education 2.0 that applied hardware and software for educational purposes and tended to support online collaboration and sharing among learners. Learners were growing with technology like the internet and were ready to use technology and learn from the internet. Education in this era focused on allowing learners to search for their own knowledge from the different type of media, including print and digital media, as well as to participate in collaborative work. Also, social media is used as a tool to enhance learning. (Mingsiritham & Chan-yawudhiwan, 2016). Likewise, Puncreobutr (2016) also added that education 3.0 addressed the need for the "technology society". It creates knowledge by supporting self-learning. Education in this era uses learning technology in forms of teaching materials, digital media, and social media. Hence, it focuses on interactive learning.

Furthermore, Hariharasudan and Kot (2018) stressed in the article that technology-based teaching and learning methods are known as Education 4.0 which is inspired by Industry 4.0. Specifically, Education 4.0 aims to improve the digital technological competencies across all levels and to enhance the use of digital technologies for teaching and learning. The approach functions in four ways: basic digital education for all pupils and students, digitally competent educators, learners and employees, and digital educational media. Furthermore, they pointed out the education 4.0 allows the learners to grow as individual who can live in a society and be equipped with the best of their competencies. Therefore, Education 4.0 provides more than just an education.

The evolution of education system as influenced by technological trends - from Education 1.0 to Education 4.0 - is a clear manifestation that educators and learners are now becoming digital natives, thus, the adoption of so-called e-learning is no longer an option but a must. An increasing number of institutions have been adopting e-learning as a strategy of integrating technology into the learning experiences of students. Marcial (2012) claimed that the universities and colleges have embraced e-learning tremendously. Consequently, the entire courses are delivered online, and video conferencing brings remote universities together. These universities are not driven by bottom-line profits and shareholders' returns. Instead, they are trying to create an environment to support learning, teaching, and researching.

Brioso, (2017) defined e-learning as an innovative approach to delivering well-designed, learner-centered, interactive, and facilitated environments to anyone, any place, and anytime by utilizing the attributes and resources of various digital technologies along with other forms of learning materials that are suited for open, flexible, and distributed learning environment. Kundi and Nawas (2014) added that e-learning ranges from supplemental use of computers to entirely depending on ICTs for teaching, learning and education management.

Aside from e-learning another way of applying ICT in education is through flexible learning. In flexible learning, instruction and e-learning is supported by traditional teaching by which students used internet-based technology such as chat rooms, discussion groups, podcast and self-assessment tools Allan, (2017); Sharma and Barret, 2017, as cited in Sriwichai, 2020). Additionally, Ata (2016), as cited in Javier and Dirain (2018), defined blended learning as a mixture of pedagogical approaches to produce optimum learning outcomes or as a combination of face-to-face learning and teaching mediated by technology. With these concepts, it could be understood that conventional face-to-face learning is present. However, due to the pandemic situation where physical presence is limited if not absent, the Commis-

sion on Higher Education (CHED) through a memorandum revised the concept of blended learning as it describes it as a type of flexible learning which is a combination of online and offline modes. Thus, online technology will be used for delivering lessons, while other classroom activities will be done offline using printed modules, video tape, storage devices, and learning packets (Magsambol, 2020).

Beaumont (2018), The Covid-19 pandemic has led to the evolution of education and has underscored the important role of customization, technology, and mobile devices in learning continuity in the country. Since the time is highly characterized by technology an internet, digitalization is possible. This would be of great help to maximize and continue to help each other and find solutions to the challenges being faced by the education sector.

There are different models of blended learning, according to Graham (2019), as cited in Moukali (2012), Blended learning can be implemented in a wide variety of context which actually depends on the purposes for adopting blended learning whether to increase effectiveness or to increase convenience. Blended learning occurs at many different levels including: 1) Institutional level blend involves institutional blending requirements or support for blended learning options; 2) program level blend as a program that allows or requires a mix of both on campus and online courses for program completions; 3) course level blend is a course that involves students in both online and face-to-face activities and; 4) activity level blend is an instructional activity which has an online and face-to-face component.

On the other hand, various advantages and disadvantages have been identified as regards to online learning as one of the modes of blended learning, the advantages are follows: Access to online materials, Learning at own pace, ability to stay at home, classes interactivity, ability to record a meeting, and comfortable surroundings, On the other side, the disadvantage are the reduced interaction with the teacher, technical problems, lack of interactions, poor learning conditions at home, lack of self-discipline and social isolation (Baczek, Baczek, Springer, Jaroszynski & Kaplon, 2021).

Additionally, Hubackova and Semradoba (2016) Stressed that an individual space of study is given as a main advantage. Each student elects his own pace, place and time, mostly suitable for study. An important role is played by immediate feedback. Blended learning provides a checking of a student's efforts as a survey of achieved results. It often makes possible an anonymous comparison with other students. This fact is highly appreciated by them. Some of the disadvantages of blended learning are an inappropriate use of it by some kinds of students and in some areas of education, dependence of it on other technological equipment, and a demanding arrangement of its content concerning teachers.

E- Learning and blended learning are gaining widespread use among academic institution as an alternative to traditional classroom teaching (Hameed, 2008, as cited in Angeles, et al., 2014). As such, several types of research on e-learning and blended learning have been conducted.

As regards the common platforms used in blended learning, Ardana, Ariawan, and Divayana (2016) had explored on the development of decision support system to selection of blended learning platforms for mathematics and ICT learning. They revealed that there were four blended learning platforms that were offered for use in the process of mathematics and ICT learning at SMK TI Udayana, to wit, Edmodo, Quipper, School, Moodle and Kelase. Considering the evaluation of the weighted product method based on the inputted values into the four criteria, the calculations showed the results of the largest value vector $V=0.252$, located at V_1 , therefore Edmodo was chosen as the blended learning platforms in mathematics and ICT learning at SMK TI Udayana. Actually, the development of decision support system to selection of blended learning platforms for mathematics and ICT learning at SMK TI Udayana visualized using the Java programming language and MySQL database.

Meanwhile, in the study of Agus and La Hadi (2020) on the responses of mathematics pre-service teacher about online lectures in the era of the Covid-19 pandemic, it was disclosed that the online platforms that were often used were WhatsApp, Google Classroom, YouTube, email, Facebook, Zoom and a combination of several media/platforms. In fact, WhatsApp became the most liked online platform while Zoom was the most disliked platform.

Additionally, in the study of Callo and Yazon (2020) In which the respondents were asked on their familiarity with and capability of using online teaching/learning materials, they reported that they were much familiar and very much capable of using e-mail ($x=3.22$), social media application ($x=3.14$). and text messaging ($x=3.48$) these platforms were the commonly used and accessed online learning materials nowadays because of their user-friendly feature. With an overall mean of 1.77, the students and faculty had an opposite level of familiarity and capability in using videos from YouTube and TED talk. While the students were much familiar in using videos from YouTube, the faculty declared unfamiliarity and

incapability in using it. Meanwhile, the reverse was true in using videos from TED talk, Moreover, both groups of respondents declared quite familiarity and capability in using the YouTube channel. On the other hand, the majority of the respondent admitted that they were familiar but not capable of using Facebook classroom, google classroom, screencastify, loom, flip-grid, screencast-o-matic, and webinar.

On the other hand, Palaoag, Catanes, Austria and Ingoson (2020) conducted descriptive research on the readiness on higher education institution in cordillera on a flexible learning among 28 participating school in the region. Findings showed that there were challenges that both faculty and students must consider in the adoption of online learning distance learning or flexible learning. It was concluded that the school readiness is a big factor in making decision in shifting from face-to-face to flexible learning system or online distance learning to achieve quality education. It was then recommended that HEIs should develop their own framework, continuity plan or game plan, and create a consortium among HEIs in the region for continuous learning anchored on the existing tools and resources of the institution, capability of staff and faculty members, and capacity of students. Regardless of the modalities of teaching, school must always aim for the best education that they could give to all students. Equal and quality education must be shared among students amidst this pandemic.

Likewise, a study on readiness on flexible learning amidst Covid-19 pandemic was conducted by Barrera, Jaminal, and Arcilla Jr. (2020) at Saint Michael College of Caraga, Philippines. Based on the findings, it can be deduced that the respondents -the JHS, SHS College, and teachers of Saint Michael College of Carraga-were ready for flexible learning, for the majority of the respondent have smartphones, laptops, and can connect to the internet through mobile data and Wi-Fi providers which are actually the technical requirements for home-schooling.

Moreover, Javier (2020) conducted a study to examine the organizational readiness in online learning among a substantial percentage of the faculty members of the Cagayan State University, Appari, Cagayan. It was concluded that CSU as a higher education institution indicated a slight readiness particularly on the 21st century ICT competencies, and even on their attitudes towards e-learning as well as on their organizational readiness on their initiatives of getting underway with some sustainable success probable down the road. Furthermore, some issues along with ICT infrastructure, training of non-IT faculty members, and institutionalized policies regarding LMS were the challenges needed to be addressed.

Toquero (2021). Teacher competencies in both pedagogy and technology should be reinforced. This transition to the new normal, from the four corners of the classroom to the borders of virtual reality, every learning institution needs to study how successful online learning is in providing quality education and outcomes-based education to students. The adoption of distance learning is not without its limitations and challenges which include limited network coverage and lack of gadgets among the students. Distance learning can be hindered by a lack of ICT skills among both students and teachers. For effective distance learning, tertiary institutions need to invest in resources that support e-learning activities. Also, financial support from governments in developing distance learning infrastructure and provision of electronic sources would aid in the implementation and maintenance of distance learning.

METHODOLOGY

Research Design

This study utilized the quantitative descriptive design to determine the experiences of the students' learning experiences on blended learning at Isabela State University-System.

Respondents of the Study

The respondents of the study were the students in the undergraduate level in Isabela State University-System who experienced the conduct of blended learning. The sample size was computed at 95% confidence level and 5% margin of error. They were selected through purposive sampling.

Table 1 shows the frequency and percentage distribution of the respondents by campus and from its total population of 5,355 and a total sample size of 394.

Table 1 Distribution of Respondents

Campus	Population	Sample Size	Percentage
Students			
Angadanan	263	20	5.07
Cabagan	1,223	92	23.35
Cauayan	934	68	17.25
Echague	1,458	106	26.90
Jones	215	18	4.56
Ilagan	361	27	6.85
Roxas	346	25	6.34
San Mariano	229	15	3.80
San Mateo	326	2	5.83
Total	5,355	394	100.00

Research Instrument

The data were obtained from the respondents through a structured questionnaire.

The questionnaire for blended learning experiences of students was utilized the WEBLEI instrument which was adopted from Chang and Fisher (2003).

The researcher utilized the Five-Point Likert Scale in blended learning experiences of students.

As to the experiences encountered by the students in blended learning, the scale range and qualitative description used is shown below:

Scale	Range	Descriptive Equivalent
		Students Experiences
5	4.5 – 5.0	Always
4	3.5 – 4.49	Often
3	2.5 – 3.49	Sometimes
2	1.5 – 2.49	Seldom
1	0 – 1.49	Never

Data Gathering Procedures

In gathering the data from the respondents of this study, the following processes were observed: Secured endorsement from the Isabela State University-President. After the approval of the University President, Google form links of the questionnaire were sent to the respondents. Variables and answers were encoded in Microsoft excel application and were subjected to statistical analysis using the software Statistical Package for Social Sciences. Results of quantitative and qualitative data were interpreted and discussed.

Statistical Treatment of Data

This study utilized statistical tools to answer the research questions. Frequency counts and percentage distribution were used for the description of the profile of the respondents; mean was used to describe the different variables, Kruskal Wallis H-test, Mann Whitney U-test and Kendall's tau b were used to analyze the differences between the profile of the respondents and the different variables. Data were analyzed using the Statistical Package for Social Science (SPSS) version 25.

FINDINGS

Table 2. Profile of the Respondents

Profile	Frequency	Percent
Sex		
Male	82	20.80
Female	312	79.20
Year level		
First Year	121	30.70
Second Year	107	27.20
Third Year	121	30.70
Fourth Year	44	11.10
Fifth Year	1	0.30

Table 2 presents the profile of the student-respondents. As shown in the table, as to the profile of the 394 student-respondents, majority were female with 312 or 79.20 percent and males consisted of 82 or 20.80 percent. The same number of 121 or 30.70 percent comprised the majority of respondents from first year and third year. This is followed by 107 or 27.20 percent who were from second year and 44 or 11.10 were fourth year. Only one or 0.30 percent was a fifth-year student.

Table 3: Prevailing Learning Modality based on the Perception of the Respondents

LEARNING MODALITY	Students n = 394	
	f	%
1. Messenger	366	66.10
2. Google Classroom	382	69.00
3. Edmodo	-	-
4. Facebook	257	46.40
5. Google Meet	357	64.40
6. Zoom	208	37.50
7. ISUE Orange	4	0.70
8. E-Mail	-	-
9. FB Live	-	-

In Table 3, majority with 366 or 66.10 percent out of the 394 respondents identified “Google Classroom” as their prevailing learning modality. Next was “Messenger” named by 366 or 66.10 percent followed by “Google Meet” that was identified by 357 or 64.40 percent of the respondents. “Zoom” was named by 208 or 37.50 while “Facebook” and “ISU Orange” numbering to 257 or 46.40 percent and 0.70 percent, respectively.

Table 4. Experiences of the Students in the Conduct of Blended Learning.

EXPERIENCES	Mean	Description
ACCESS		
In blended learning I can easily access the learning materials	3.99	Often
I can easily access the learning activities.	4.04	Often
In blended learning I am allowed to learn at my own pace to achieve the learning objectives.	3.98	Often
The flexibility allows me to meet the learning objectives.	3.90	Often
The flexibility allows me to explore more areas of interest.	4.02	Often
INTERACTION		
I communicate with other students in this subject electronically (email, bulletin, chat line).	4.11	Often
I have the autonomy to ask my teachers what I do not understand.	3.72	Often
In blended learning my teachers respond promptly to my queries.	3.89	Often
In blended learning I regularly participate in self-evaluations.	3.96	Often
In blended learning I regularly participate in peer-evaluations.	3.93	Often
RESPONSE		
Blended learning enables me to interact with other students and the teachers asynchronously.	4.06	Often
Blended learning provides me a sense of satisfaction and achievement about this learning environment.	3.91	Often
I enjoy learning in a flexible environment.	3.83	Often
Blended learning enables me to easily organize for group tasks.	3.77	Often
Blended learning develops collaborative work attitude with other students.	3.89	Often
RESULTS		
In blended learning I can clearly state the learning objective in each lesson.	3.83	Often
In blended learning, I can easily plan and organize varied learning activities.	3.85	Often
The structure keeps me focused on what to learn.	3.89	Often
In blended learning, I can choose the appropriate web-based materials that would enhance my learning.	3.93	Often
Blended learning enhances the attainment of the intended learning objectives.	3.94	Often

In Table 4, the students’ experiences of the students in the conduct of blended learning were revealed. As indicated all items under the different domain were rated from 3.72 to 4.11 or “often”.

Access. It was noted that in blended learning the students were able to frequently and easily access the learning materials and the learning activities. Also, oftentimes, in blended learning, they were allowed to learn at their own pace to achieve the learning objectives and the flexibility allowed them to meet the learning objectives, and explore more areas of interest.

Interaction. Table 4 showed that “often” the respondents communicated with other students in their subject electronically (email, bulletin, chat line) and were given the autonomy to ask their teachers what they did not understand. Likewise, in blended learning their teachers often responded promptly to their queries and they regularly participated in self-evaluations and in peer-evaluations.

Response. As indicated, blended learning enabled the students to interact more “often” with other students and the teachers asynchronously, it frequently provided them a sense of satisfaction and achievement about this learning environment and often enjoyed learning in a flexible environment. Also, blended learning oftentimes enabled them to easily organize for group tasks as well as it greatly developed collaborative work attitude with other students.

Results. In this aspect, the students were able to clearly state the learning objective in each lesson and very easily plan and organize varied learning activities in blended learning. The structure kept them often focused on what to learn, choose the appropriate web-based materials that would enhance my learning and enhanced the attainment of the intended learning objectives.

Table 5. Difference in the Experiences of the Students in the Conduct of Blended Learning According to Sex.

EXPERIENCES	Male		Female		Z	Sig.
	Mean	Desc.	Mean	Desc.		
ACCESS						
In blended learning I can easily access the learning materials	3.95	O	4.00	O	0.56 ^{ns}	0.58
I can easily access the learning activities.	3.94	O	4.06	O	1.05 ^{ns}	0.30
In blended learning I am allowed to learn at my own pace to achieve the learning objectives.	3.94	O	4.00	O	0.95 ^{ns}	0.34
The flexibility allows me to meet the learning objectives.	3.80	O	3.92	O	1.22 ^{ns}	0.22
The flexibility allows me to explore more areas of interest.	3.94	O	4.04	O	1.30 ^{ns}	0.19
INTERACTION						
I communicate with other students in this subject electronically (email, bulletin, chat line).	4.01	O	4.14	O	1.52 ^{ns}	0.13
I have the autonomy to ask my teachers what I do not understand.	3.80	O	3.70	O	0.71 ^{ns}	0.48
In blended learning my teachers respond promptly to my queries.	3.89	O	3.89	O	0.31 ^{ns}	0.76
In blended learning I regularly participate in self-evaluations.	4.02	O	3.95	O	0.62 ^{ns}	0.54
In blended learning I regularly participate in peer-evaluations.	3.89	O	3.94	O	0.65 ^{ns}	0.52
RESPONSE						
Blended learning enables me to interact with other students and the teachers asynchronously.	4.04	O	4.06	O	0.66 ^{ns}	0.51
Blended learning provides me a sense of satisfaction and achievement about this learning environment.	3.82	O	3.94	O	1.52 ^{ns}	0.13
I enjoy learning in a flexible environment.	3.87	O	3.82	O	0.48 ^{ns}	0.63
Blended learning enables me to easily organize for group tasks.	3.84	O	3.75	O	0.76 ^{ns}	0.45
Blended learning develops collaborative work attitude with other students.	3.84	O	3.90	O	0.60 ^{ns}	0.55
RESULTS						
In blended learning I can clearly state the learning objective in each lesson.	3.74	O	3.85	O	1.18 ^{ns}	0.24
In blended learning, I can easily plan and organize varied learning activities.	3.74	O	3.87	O	1.59 ^{ns}	0.11
The structure keeps me focused on what to learn.	3.82	O	3.90	O	0.95 ^{ns}	0.34
In blended learning, I can choose the appropriate web-based materials that would enhance my learning.	3.82	O	3.96	O	1.70 ^{ns}	0.09
Blended learning enhances the attainment of the intended learning objectives.	3.87	O	3.96	O	1.27 ^{ns}	0.21

^{ns} Not Significant

Table 5 displays the difference in the experiences of the students in the conduct of blended learning when students are grouped according to sex.

Access. Table 5 revealed that both female and male students, with mean ratings 3.80 to 4.06, have experienced “often” that in blended learning they can easily access the learning materials, they can easily access the learning activities, in blended learning, they are allowed to learn at their own pace to achieve the learning objectives, the flexibility allows them to meet the learning objectives, and the flexibility allows them to explore more areas of interest.

Moreover, with the z-values 0.56, 1.05, 0.95, 1.22, and 1.30 and corresponding significance value 0.58, 0.30, 0.22, and 0.19 which are greater than 0.05 alpha level, the null hypothesis was accepted that there is no significant difference in the experiences of the students in the conduct of blended learning and their sex. Therefore, the experiences of the students in the conduct of blended learning particularly that in blended learning they can easily access the learning materials, they can easily access the learning activities, in blended learning, they are allowed to learn at their own pace to achieve the learning objec-

tives, the flexibility allows them to meet the learning objectives, and the flexibility allows them to explore more areas of interest do not significantly differ when students are grouped according to sex. This implies that male and female students have equally experienced that in blended learning they can easily access the learning materials, they can easily access the learning activities, in blended learning, they are allowed to learn at their own pace to achieve the learning objectives, the flexibility allows them to meet the learning objectives, and the flexibility allows them to explore more areas of interest.

Interaction. Table 5 construed that both male and female students “often” communicate with other students in this subject electronically (email, bulletin, chat line), have the autonomy to ask their teachers what they do not understand, experienced that in blended learning their teachers respond promptly to their queries, experienced that they regularly participate in self-evaluations and in peer-evaluations with mean ratings 3.70 to 4.14.

Moreover, with the z-values 1.52, 0.71, 0.31, 0.62, and 0.65 and significance value greater than 0.05, the null hypothesis was accepted that there is no significant difference in the experiences among the students in the conduct of blended learning and their sex. It was then concluded that the experiences of the students in terms of interaction the conduct of blended learning do not significantly differ when students are grouped according to sex. This implies that both male and female students have the same experiences in terms of interaction, wherein they communicate with other students in this subject electronically (email, bulletin, chat line), they have the autonomy to ask their teachers what they do not understand, in blended learning their teachers respond promptly to their queries, they regularly participate in self-evaluations and in peer-evaluations.

Response. The table revealed that both male and female students “often” experience that blended learning enables them to interact with other students and the teachers asynchronously, easily organize for group tasks, provides them a sense of satisfaction and achievement about this learning environment, develops collaborative work attitude with other students, and they enjoy learning in a flexible environment, with the mean ratings 3.75 to 4.06.

Moreover, with the z-values 0.66, 1.52, 0.48, 0.76, and 0.60 and corresponding significance level 0.51, 0.13, 0.63, 0.45, and 0.55 which are greater than 0.05, the null hypothesis was accepted that there is no significant difference in the experiences of the students in the conduct of blended learning and their sex. It was concluded that the experiences of the students in the conduct of blended learning in terms of response do not significantly differ when students are grouped according to sex. This implies that regardless of sex, students have equal level of experience such as blended learning enables them to interact with other students and the teachers asynchronously, easily organize for group tasks, provides them a sense of satisfaction and achievement about this learning environment, develops collaborative work attitude with other students, and they enjoy learning in a flexible environment.

Results. Table 5 revealed that both male and female students “often” experienced that in blended learning they can clearly state the learning objective in each lesson, easily plan and organize varied learning activities, the structure keeps them focused on what to learn, they can choose the appropriate web-based materials that would enhance their learning, and enhances the attainment of the intended learning objectives, with the mean ratings 3.75 to 3.90.

Moreover, with the z-values 1.18, 1.59, 0.95, 1.70 and 1.27 and corresponding significance level 0.24, 0.11, 0.34, 0.09 and 0.21 which are greater than 0.05, the null hypothesis was accepted that there is no significant difference in the experiences of the students in the conduct of blended learning and their sex. This implies that male and female students have equal level of experiences in blended learning wherein they can clearly state the learning objective in each lesson, easily plan and organize varied learning activities, the structure keeps them focused on what to learn, they can choose the appropriate web-based materials that would enhance their learning and the attainment of the intended learning objectives.

CONCLUSIONS

Based on the findings, the following conclusions are drawn.

1. Most of the student-respondents were female who were in the first year and third year level.
2. In terms of the prevailing learning modalities, student-respondents considered Google classroom as their learning modality.

3. In terms of experiences in the conduct of flexible learning, student-respondents held that they most often experience accessibility, interaction, response and result.
4. There is no significant difference in the experiences of the students in the conduct of blended learning and their sex.

RECOMMENDATIONS

Given are the recommended actions to the research beneficiaries:

1. The University Administrators faculty and students may use uniform learning modality.
2. University officials may look into the challenges which were always and often experienced to ensure that quality instruction is provided and quality education is delivered.
3. University officials may implement the use of ISUE Orange as learning modality system in the University.
4. The future researchers may replicate the study and may add more profile variables of the students to test their differences in experiencing challenges which will serve as a basis for some interventions.

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REFERENCES

- Adams, D., Sumintono, B., Mohamed, A., & Mohamad Noor, N. S. (2018). E-Learning readiness among students of diverse backgrounds in leading Malaysia higher education institution. *Malaysia Journal of learning and Instruction* (MJLI), 15(2), 227-256.
- Adams, D., Tan, M.H. J., & Sumintono, B. (2020). Students' readiness for blended learning in leading Malaysian private higher education institution. *Interactive Technology and Smart Education*, 17 (1), 133-158.
- Adams, D., Tan, M.H. J., Sumintono, B., & Oh, S. P. (2020). Blended learning engagement in higher education institutions: A differential item functioning analysis of students' backgrounds. *Malaysian Journal of Learning and Instructions*, 17(1), 133-158.
- Agus, I., & La Hadi, A. (2020). The responses of Mathematics pre-service teachers toward online lectures in the Covid-19 era. *Edumatika: Jurnal Riset Pendidikan Matematika*, 3(2), 113- 119.
- Amir, L. R., Tanti, I., Maharani, D., Wimardhani, Y., Julia, V., Sulijaya, B., *et al.* (2020). Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia. *BMC Med Educ*.
- Ardana, I. M., Ariawan, I. P. W., & Divayana, D. G. H. (2016). Development of decision support system to selection of the blended learning platforms for mathematics and ICT learning at SMK TI Udayana. *Development*, 5(12), 15-18.
- Arinto, P. B. (2016). Issues and challenges in open and distance e-learning: Perspectives from the Philippines. *International Review of Research in Open and Distributed Learning*, 17(2), 162-180.
- Baczek, M., Zaganczyk-Baczek, M., Szpringer, M., Jaroszynski, A., & Wozakowska-Kaplon, B. (2021). Student's perception of online learning during the Covid-19 pandemic: A survey study of Polish medical students. *Medicine*, 100(7).
- Bahasoan, Ayuandiani, Mukhram and Rahmat. (2020). Effectiveness of Online Learning In Pandemic Covid-19. *International Journal of Science, Technology & Management*, pages 100-105.
- Balta-Salvador, R., Olmedo-Torre, N., Peña, & Renta-Davids, A. I. (2021). Academic and emotional effects of online learning during the COVID-19 pandemic on engineering students. *Education and Information Technologies*, 1-28. Retrieved. from <https://pubmed.ncbi.nlm.nih.gov/34108843/>
- Barrera, K. I. B., Jaminal, B. D., & Arcilla Jr., F. E. (2020). Readiness for flexible learning amidst Covid

- 19 pandemic of Saint Michael College of Caraga, Philippines. *SMCC Teacher Educational Journal*, 2, 1-15.
- Beaumont, K. (2018). Google Classroom: An online learning environment to support blended learning. *Compass: Journal of Learning and Teaching*, 11 (2).
- Belgica, C., Calugan, J., Dumo, J., and Simber, L. (2020). Online Distance Learning: Thematic Study on the Challenges Faced by Educare College Inc. Primary Pupils. *Advance Reasearch in Education, Teaching, and Learning*, pages 94-108.
- Beltekin, E. and Kuyulu, I. (2020). The Effect of Coronavirus (Covid19) Outbreak on Education Systems: Evaluation of Distance Learning System in Turkey [Published by Canadian Center of Science and Education]. *Journal of Education and Learning*, Volume 9, Issue 4, pages 1-2.
- Brioso, J. O. P. (2017). An e-classroom management system implementation: Contextualization, perception, and usability. *Review of Integrative Business and Economics Research*, 6, 229.
- El Refae, G. A., Kaba, A. and Eletter, S. (2021), "Distance learning during COVID-19 pandemic: satisfaction, opportunities and challenges as perceived by faculty members and students". *Interactive Technology and Smart Education*, Vol. ahead-of-print No. ahead-of-print. Retrieved from <http://www.emerald.com/insight/content/doi/10.1108/ITSE-08-2020-0128/full/html>
- El Said, G. R. (2021). How did the COVID-19 Pandemic Affect Higher Education Learning Experience? An Empirical Investigation of Learners Academic Performance at a University in a Developing County. *Advances in Human-Computer Interaction, 2021*. Retrieved from <https://www.hindawi.com/journals/ahci/2021/6649524/>
- Esteves, K. K. (2012). Exploring Facebook to enhance learning and student engagement: A case study. *Journal of Management Information Systems*, 29(2), 1-15.
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The internet and higher education*, 7(2), 95-105.
- Ghazal, S., Al-Samarraie, H., & Aldowah, H. (2018). "I am still learning": Modeling LMS critical success factors for promoting students' experience and satisfaction in a blended learning environment. *IEEE Access*, 6, 77179-77201.
- Hariharasudan, A., & Kot, S. (2018). A scoping review on digital English and Education 4.0 for Industry 4.0 Social sciences, 7 (11), 227.
- Hubackova, S., & Semradova, I. (2016). Evaluation of blended learning. *Procedia-Social and Behavioral Sciences*, 217, 551-557.
- Marcial, D. E. (2012). Teaching and learning with technology in higher education institutions in the Philippines. *PeLS Online J*, 3(3), 50-66.
- Mingsiritham, K., & Chanyawundiwan, G. (2016). Education 3.0 for distance learning. *Veridian E-Journal, Silpakorn Univesity (Humanities, Social Sciences and Arts)*, 9 (5), 15-23.
- Puncreobutr, V. (2016). Education 4:0: New challenge of learning. *St. Theresa Journal of Humanities and Social Sciences* 2(2)
- Rabiman, R., Nurtanto, M., & Kholifah, N. (2020). Design and development e-learning system by learning management system (LMS) in Vocational Education. *Online Submission*, 9(1), 1059-1063.
- Red, E. R., Borlongan, H. G. S., Briagas, T. T., & Mendoza, M. J. M. (2013). An assessment of the e-learning readiness state of faculty members and students at Malayan Colleges Laguna. *Facilities*, 1, 5-8.
- Saltan, F. (2017). Blended learning experience of students participating pedagogical formation program: Advantages and limitation of blended education. *International Journal of Higher Education*, 6(1), 63-73.
- Sriwichai, C. (2020). Students' readiness and problems in learning English through blended learning environment. *Asian Journal of Education and Training*, 6(10), 23-34.
- Unger, S. and Meira, W. (2020). Student attitudes towards online education during the COVID-19 viral outbreak of 2020: Distance learning in a time of social distance. *International Journal of Technology in Education and Science (IJTES)*, Volume 4, Issue 4, pages 256-257.
- Valiathan, P. (2002). Blended learning models. *Learning circuits*, 3(8), 50-59.
- Weller, M., Pegler, C., & Mason, R. (2005). Students' experience of component versus integrated virtual learning environments. *Journal of Computer Assisted Learning*, 21(4), 253-259.
- Wenceslao, Jr., F. (2015). A comparative study on the effectiveness of e-learning technologies used in the blended learning approach. *International Journal of Innovative Science, Engineering & Technology*, 2 (11) 770-775.

NETWORK SECURITY ASSESSMENT USING OPEN-SOURCE VULNERABILITY ASSESSMENT AND PENETRATION TESTING (VAPT) WITH SECURITY INFORMATION AND EVENT MANAGEMENT (SIEM): A CASE STUDY FOR SOROSORO IBABA DEVELOPMENT COOPERATIVE (SIDC)

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ABSTRACT

The rise of digitalization in businesses is a major concern due to the risk factors caused by cyber-attacks in the Information Technology infrastructure. To protect organizations and customers, data privacy regulations which required businesses to establish their information and cybersecurity policies, standards, risk management, and controls were enacted. The cybersecurity budget is the number one concern of Small and Medium Businesses like Cooperatives. Leveraging Open-Source technology is perceived to help SMBs initially comply with the regulatory requirements and address technical control needs to complete the administrative, physical, and environmental controls. The researchers developed implementation guidelines for Network Security Assessment using Open-Source Vulnerability Assessment and Penetration Testing with Security Information and Event Management for the Sorosoro Ibaba Development Cooperative (SIDC) case study. They used strategic tools like PEST and other frameworks to lead the development of the overall documentation for the plan of implementation. They analyzed the collected data using thematic or content analysis to present the results of the study. The results of a survey, interview, and document review have contributed to the creation of different frameworks like SIDC Technology Selection Framework, SIDC MINI SOC Implementation Framework, and the Open-Source Stage Model of Implementation. The test results from the different tools signify the capability of the organization to use open-source cyber-security tools, allowing visibility and capability to measure the status of the infrastructure against known threats.

Keywords: Open-Source, Cybersecurity, Network security, Vulnerability and Penetration Testing, Security Information and Event Management

INTRODUCTION

The birth of the fourth industrial 4.0 or digital revolution has provided significant opportunities for doing business. It provides more capabilities, competitiveness, and superiority to make customers happy and give them a delightful service delivery. During the Covid-19 pandemic, the use of online food services, electronic wallets for money transfers, and online meetings has increased. Digital transformation for business is the emerging trend in the future to improve business processes using different technologies. Gartner (2022) defined digitalization as the transition to a digital business and the use of digital technologies to transform business models and create new prospects for revenue and value creation.

The two global digital superpowers within the Group of Twenty (G20) were China and the US. China was the top three Digital Risers in the G20, followed by Saudi Arabia and Brazil, with India, Japan, and Germany finishing last. The Philippines underwent a fresh wave of digitization due to the strict lockdowns implemented during the pandemic, with the number of Filipinos using digital services rising from 3.9 prior to the pandemic to 8.2 in 2021. The World Bank reported that 71% of Philippine enterprises have either begun or increased their usage of digital platforms by March 2022. Compliance with regulations is also important to protect the organization and customers against cyber threats and attacks.

Data privacy law is one of the firm's main focus and most concern for compliance. According to (PURPLESEC, 2022), a data breach may cost a small organization on average between \$120,000 and \$1.24 million. Costs associated with data breaches increased from \$3.86 million to \$4.24 million in 2021, representing the highest average total cost over the previous 17 years. The Data Privacy Act of 2012, also known as Republic Act 10173, was passed in the Philippines in order to safeguard individuals' rights to privacy and safeguard sensitive and personal data. To prevent unauthorized disclosure of its people's personal information, the Philippines Data Privacy Act (DPA) of 2012 was passed.

The Bangko Sentral ng Pilipinas (BSP) Supervised Financial Institutions (BSFIs) are required to have strong and efficient technology risk management procedures, governance frameworks, and cybersecurity measures to ensure that the advantages brought about by technology advancements may be fully realized without endangering monetary stability, operational resilience, or consumer safety. A surge in online fraud, scam intrusions, and security breaches comes with the increased use of digital technology. Additionally, digital/electronic financial goods and services offered to BSFIs and retail clients can have a direct influence on IT risks, including information security/cybersecurity risks. Lack of investment and budget restrictions can be two main reasons for cybersecurity problems.

From Information Security Risk Management (ISRM) framework underlying principles and concepts of BSP preventive controls are divided into three (3) categories:

- Administrative controls – refers to the laws, regulations, and practices that define management's goals, objectives, and directions for information security. Additionally, it entails human security measures, security training, and awareness campaigns aimed at preventing inappropriate employee conduct.
- Physical and environmental controls – refer to steps that are taken and procedures that have been established to safeguard physical infrastructure such as computer servers, information centers, and technology from damage, unlawful access, or environmental threats.
- Technical controls – relate to the logical security procedures, security mechanisms, and technologies used to guarantee that the privacy, accuracy, and reliability objectives for information assets are met.

The above mentioned requirements also potentially impact cooperatives under the supervision of the Cooperative Development Authority (CDA). Sorosoro Ibaba Development Cooperative (SIDC) is a multi-purpose cooperative and number one agricultural cooperative in the Philippines. It was founded in 1969 and has 61 thousand members and 1,681 employees. It has 70 branches of Consumer Retailing and 68 branches of Koopinoy (Bank Like) in Cavite, Laguna, Batangas, Rizal and Quezon (Calabarzon), Mindoro Marinduque, Romblon and Palawan (MIMAROPA), Central Luzon, Bicol Region, Panay, and Negros Island. SIDC provides Feed Milling, Rice Milling, and Contract Growing services to members. CDA supervises SIDC with issued Certificate of Registration (COR) and Letter of Authority (LOA). To accommodate the increasing number of members and branches, SIDC enhances its automation and digitalization to improve processes and services. This increases the cooperatives' information and cyber security risk.

This study utilized a qualitative research approach using a descriptive and case study design for Sorosoro Ibaba Development Cooperative (SIDC) implementing Open-Source technology for Vulnerability Assessment and Penetration Testing (VAPT) with Security Information and Event Management (SIEM). Leveraging Open-Source technology is a great help to other industries when it comes to the lack of cybersecurity budget, capacity, and awareness. This research will initially help organizations like Cooperative, Rural Banks, and SMEs set up cybersecurity infrastructure on how to comply with regulatory requirements, improve security posture, and upgrade as they grow.

STATEMENT OF THE PROBLEM

The main problem of the study: How will Network Security Assessment using Open Source technology be implemented at Sorosoro Ibaba Development Cooperative (SIDC) for compliance with regulatory requirements like the Data Privacy Act of 2021, specifically sought answers to the following:

1. What technology selection framework will be used and what factors shall be considered to find the right Open-Source Technology for Network Security Assessment and logs management tools?
2. What are the Open-Source Network Security Assessment Tools that will help improve the security posture of SIDC and address the laws and regulatory requirements?
3. What kind of skill sets, training, and standard documentation will be developed to implement Network Security Assessment using Open-Source Vulnerability Assessment and Penetration Testing with Security Information and Event Management (SIEM)?
4. How does PEST influence the implementation of Open-Source Network Security Assessment Tools?
5. What are the strategies to get the management buy-in and stakeholders' involvement to implement Open-Source technology to improve SIDC security posture?

METHOD

The researchers used primary and secondary sources to conduct the study. This research used the qualitative research method. The researchers applied the method and gained insights from the participants from Sorosoro Ibaba Development Cooperative (SIDC) from the data collected and analyzed for research reference. Research Design PEST was used as part of the strategy to identify variables that might influence the implementation of Open-Source Network Security Assessment Tools. Descriptive and Single Embedded Case Studies were utilized in the research for inductive exploration of the phenomenon through data collection.

The researchers applied the descriptive and case study designs which were participated by selected employees of SIDC, from the top management of HR, Billing, ICT, Finance, and Koopinoy. Aligned with the flow of qualitative research, the researcher conducted interviews, and surveys with the participants and gathered their responses as to their experiences and knowledge of the study. These were all aligned with the researcher's objective to conduct an explorative account of the cooperatives when it comes to compliance, the challenges and problems they face, and the concerns they have in order to pursue the implementation of the Open-Source Network Security Assessment Tools that the researcher is aiming for SIDC. Tests and evaluation with the technology were conducted to check its potential use based on the basic requirements of the cooperative to initially implement and improve the cyber security infrastructures.

The recorded information through audio, results from surveys and interviews were eventually analyzed through triangulation and pattern matching including the downloaded documents. Through this, the researcher was able to draw out a narrative account of their responses and documented them accordingly.

Moreover, to analyze the data gathered and the results from interviews, seven steps were employed:

1. A basic understanding of the entire subject was gained by reading and rereading each transcript;
2. Transcripts were used to extract key phrases about the phenomena under research;
3. Constructed interpretations drawn from noteworthy utterances;
4. Grouping of articulated ideas into themes and groups;
5. Incorporating the findings into a thorough explanation;
6. A description of the phenomenon's basic structure; and
7. Verification of the results from the research subjects (Praveena & Sasikumar, 2021).

Thus, the researcher implemented these steps starting with reading the transcription several times until the researcher grasps the sense of connectivity in what the participants were trying to convey from the significant statements, sentences or phrases that directly described the phenomenon, or their experiences. Since the researcher worked with an interview guide, each response was positioned in alignment with each query, and from the statements, interpretive notes were written on each response, formulating meanings and connections from previously extracted statements. With all statements retrieved and interpreted, the researcher attempted to establish formulated meanings of statements or phrases into categories. This allowed the researcher to develop an overall description of the response and summarize every-

thing in aggregated results. The researcher organized the theme cluster and emergent themes, then presented them to show completeness.

After all of these have been done, the researchers presented the instruments to the research adviser then to the survey respondents represented by members of the top management of Sorosoro Ibaba Development Cooperative (SIDC) and experts from information and cyber security were interviewed to validate the correctness and completeness of the findings from the primary and secondary data.

The survey was conducted using google forms, and the results were extracted and presented to visualize the level of awareness of the 96 respondents regarding information and cybersecurity concerns. Meanwhile, the ICT Assistant Manager, System Administrator, Network Engineer, Security Researcher, and Finance Senior Manager of SIDC were invited for the 30 to 45 minutes' online interview, as was the IT consultant of Rural Banks. The researcher also discussed the purpose of the research and encouraged them to participate by sharing their experiences and insights. For documentation purposes, the researcher recorded the interviews and later transcribed for data presentation and analysis.

The researchers considered two technology selection frameworks as references to be integrated with the overall implementation plan for Network Security Assessment using Vulnerability Assessment and Penetration Testing with System Information and Event Management, according to the text's most important details. The Phases of Technology Selection Model of (Ruder et al., 2008) were determined by a team of 5-10 persons from several departments that have a thorough awareness of how the organization operates. Tests and evaluation with the technology were conducted to check its potential use based on the basic requirements of the cooperative to initially implement and improve the cyber security infrastructures.

FINDINGS

Compliance with the regulatory requirement is most triggered nowadays for Small and Midsize industries. Setting up cyber- security infrastructure is a challenge to SMEs because of the practicability to acquire expensive security tools just to comply. (SMB SECURE, 2021) argues that small businesses should use open-source cybersecurity technologies rather than paying for them. Additionally, open-source solutions offer 87% higher cost reductions than comparable or less expensive proprietary products (Pearce, 2020). The output of this research would give a significant contribution to small businesses like cooperatives, Rural Banks, and SMEs to have visibility to their infrastructures for known vulnerabilities and threats.

The study's findings were reviewed in relation to the research statement of the problem addressed by the results generated in the preceding section.

1. Technology selection framework and factors to consider to find the right Open-Source Technology for Network Security Assessment and Logs Management tools.

The primary data were collected during the interview and presented in Table 1 Final Categories Identified by Ranking. The final themes were ranked according to the total frequency mentioned by the participant during the interview. Among the themes are vendor reputation, security, awareness and training, compliance, research and development, and cost savings. Those mentioned are the suggestions of the respondent to be factors to consider in selecting open-source technology to improve cyber-security posture of the organizations.

Table 1. Final Categories Identified by Ranking

#	Categories	Frequency	Ranking
1	Vendor reputation	19	1
2	Security	14	2
3	Awareness & Training	9	3
4	Compliance	9	3
5	Research and Development	7	4
6	Cost Savings	6	5
7	Standards	6	5
8	Quality	5	6

Given the data, the researcher developed a simple framework. Figure 1, SIDC Technology Selection Framework shows how to select open-source technology and implementation for Mini Security Operation Center (SOC) in SIDC. Incorporating strategic initiatives before introducing the technology, especially for Open-Source is a vital process used as guidelines to select the correct technology and how it helps to the overall goals and objectives of the organization.

Technology Selection Framework

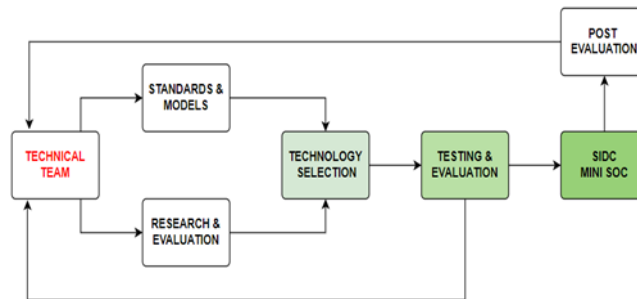


Figure 1. SIDC Technology Selection Framework

2. Open-Source Network Security Assessment Tools to improve the security posture of SIDC and address the laws and regulatory requirements.

From the interview results of key informants, the researcher presented all the inputs in PEST format to quickly figure out the elements that could affect how open-source security products are used.

Table 2. Potential Influencing Factors for the Use of Open-Source Security Technologies

POLITICO-LEGAL	ECONOMIC	SOCIO-ENVIRONMENTAL	TECHNOLOGY
Laws & Compliance to regulations and policies	Penalties for Non-compliance	Data Sharing Agreements	Eligibility & Reputation
Standards (ISO)	Cost Savings	Non-Disclosure Agreements	Compliance
BSP Circulars	Cost associated by data breach	Training and Awareness	Free from possible breach
	Financial loss due to cyber attacks	Risk	Safeguards for possible risk in place
		Personal Data Exposure	Quality

To identify what kind of open-source helps improve security posture of the organization, the researcher used google search to identify the most popular tools for cyber-security. The researcher selected 6 entities from the list which were considered to improve security infrastructures. Given the results, the researcher selected OpenVas and Nessus for vulnerability assessment tools. For SIEM, the researcher chose Alient Vault OSSIM, Wazuh, and ELK Stack. After the selection, the researcher conducted a test and evaluation of the technology and generated the results which are presented in Table 3 and initially submitted to the management for their awareness.

Table 3. Vulnerability Scanner

SOLUTIONS	REQUIREMENTS	STRENGTH	WEAKNESS
Nessus Essential	VMWare Player Version 16 (Free version) 4GB RAM, Storage 40GB, 2 Core CPUs Kali Linux version 5.10.0	Vulnerability Assessment with well-known vulnerabilities Runs on Kali Linux Comprehensive report output	Free trial version Allow only 16 unique IPs addresses Limited storage Stand alone Need to disable Windows firewall and Antivirus before scanning Required email for activation

OPENVAS	VMWare Player Version 16 (Free Version) 4GB RAM, Storage 40GB, and 2 Core CPUs Kali Linux Version 5.10.0 OpenVAS Version 22.1.0	Open-source Updated Common Vulnerabilities and Exposures (CVEs) With large community support Updated release version as of July 2022 (22.1.0)	Stand alone Need to disable Windows firewall and Antivirus before scanning
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Table 4. SIEM with Vulnerability Scanner

SOLUTIONS	REQUIREMENTS	STRENGTH	WEAKNESS
WAZUH	VMWare Player Version 16 (Free version) 8GB RAM, Storage 100GB, 4 Core CPUs Ubuntu 22.04	Asset inventory of processes, network, application installed, and running services Vulnerability detection Logs security events per endpoints User friendly interface	User trigger (Refresh) Not real-time Conflict with ELKStack agent deployment when running services Required to uninstall ALIENVAULT agent when deployed
ALIENVAULT	VMWare Player Version 16 (Free version) 8GB RAM, Storage 100GB, 4 Core CPUs With owned OS (Debian 5.11)	Asset Detection Real-time events monitoring SIEM event correlation (Categories according to attack vectors) Vulnerability assessment Appliance/Device Monitoring	Log collection limited to 5 million event logs or 6 days' retention Event logs not downloadable for backup
ELK STACK	Linux Mint 20.3 8GB RAM, 100GB, and 4 Core CPUs	Real-Time monitoring (auto refresh) System Metrics Monitoring Endpoint Security	Limited features Consume high endpoint resources (memory, almost 1GB)

Table 4, Vulnerability Assessment Report shows the different test results in which Wazuh got a higher number of vulnerabilities detected, followed by Nessus, OpenVas, and AlienVault. Given those findings, it was perceived by the researcher that leveraging the various open-source security tools is a great advantage to having an in-depth vulnerability assessment of the IT infrastructures for known threats.

Table 4. Vulnerability Assessment Report from one Production Server

VA Scanner	Critical	High	Medium	Low	# of CVEs	Last update	Known Vulnerabilities
Nessus	3	3	5	57	147,504	-	OS Patch update
OpenVAS	0	4	18	33	200,224	CVE 2022-45474	Database update
Wazuh	121	1755	1234	60	200,224	CVE 2022-45474	Mozilla Firefox, Database, VLC Player, OS patch update
AlienVault	0	0	11	0	106,326	CVE-2022-26233	Database update

In addition, the researcher conducted basic pen testing of known vulnerabilities based on the vulnerability assessment results. MySQL database is used for the test, and the test results Metasploit got an error message that the connection has been blocked. ERROR 1129 (HY00) is MySQL's crude anti-cybercriminal feature that has been activated. The application is not exploitable because of the safeguard already in place, and the VA results are false positive.

ERROR 1129 (HY00) - MySQL's crude anti-cybercriminal feature has been activated: programs running on the same machine being used have tried and failed to connect many times (100 by default). This version of MYSQL is difficult to attack because it has the feature that can deflect the exploit.

NMAP

```
(kali@kali)-[~]
└─$ nmap -sV -p 192.168.1.1
Host discovery disabled (-Pn). All addresses will be marked 'up' and scan times will be slower.
Starting Nmap 7.91 ( https://nmap.org ) at 2022-10-23 21:02 EDT
Nmap scan report for 192.168.1.1
Host is up (0.00059s latency).
Not shown: 996 closed ports
PORT      STATE SERVICE        VERSION
135/tcp   open  msrpc          Microsoft Windows RPC
139/tcp   open  netbios-ssn    Microsoft Windows netbios-ssn
445/tcp   open  microsoft-ds?
3306/tcp   open  mysql          MySQL 5.5.40
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Service detection performed. Please report any incorrect results at https://nmap.org/submit/.
Nmap done: 1 IP address (1 host up) scanned in 17.95 seconds
```

Figure 3. Scanning: nmap -sV <targetip> (version scanning)

```
PORT      STATE SERVICE REASON
3306/tcp   open  mysql  syn-ack
_ http-vuln-cve2014-2126:
_ ERROR: Failed to connect to SSL VPN server
_ http-vuln-cve2014-2127:
_ ERROR: Failed to connect to SSL VPN server
_ http-vuln-cve2014-2128:
_ ERROR: Failed to connect to SSL VPN server
_ http-vuln-cve2014-2129:
_ ERROR: Failed to connect to SSL VPN server
_ _sslv2-drown:
Final times for host: srtt: 570 rttvar: 3779 to: 100000
```

Figure 4. Checking for Vulnerability and Possible Exploit

```
nmap -p <port number> --script vuln <targetip>
nmap -sV --script vulners <targetip> -d
```

METASPLOIT

```
(kali@kali)-[~]
└─$ nano usernames.txt
(kali@kali)-[~]
└─$ mysql -u [redacted] -h 192.168.1.1
ERROR 1129 (HY000): Host '192.168.1.1' is blocked because of many connecti
on errors; unblock with 'mysqladmin flush-hosts'
```

Figure 15. Exploitation Using Metasploit

3. Skill sets, training, and standard documentation to implement Network Security Assessment using Open-Source Vulnerability Assessment and Penetration Testing with Security and Event Management (SIEM)

With the results presented, vulnerability Assessment, Pentesting, and SIEM Tools are the things to consider by the organization to develop their technical team through trainings like Ethical Hacking (EH) and Cyber Defense and Threat Hunting (CDTH) or encourage to take master's degree like Professional Science Master in Cyber Security (PSM-Cybersecurity) in Holy Angel University (HAU). Awareness, look for standards, and Research Development which are Final Themes identified during the interview are also the variables to use as references in developing standards and policies to serve as guidelines. The stage model of implementation, Open-Source Stage Model of Implementation and SIDC MINI SOC Implementation Framework were the overall guidelines to successfully deploy SIDC cyber-security infrastructure. The survey results were also the triggers to improve the conduct of awareness among the employees to enhance the level of competency when it comes to cybersecurity.

Open-Source Implementation Framework

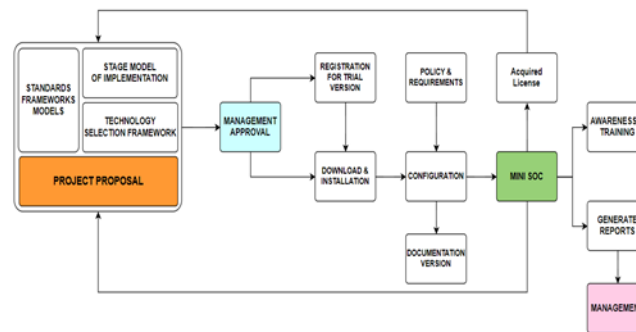


Figure 5. SIDC MINI SOC Implementation Framework

4. PEST influence on the implementation of Open-Source Network Security Assessment Tools

Compliance with the law, Cost Savings, Security to maintain customer trust and organizational reputation, and quality of technology, are among the factors to consider that may influence implementation of the technology. For the politico-legal aspects, the Data Privacy Act and General Data Protection Regulation (GDPR) are among the laws to consider why organizations need to improve their security postures. Practicability, on the other hand, is being considered by small organizations of not acquiring technology that may impact their economic stability by investing in non-income generating investment. With small capitalization, most organizations consider having a cost-saving approach in their operations to become sustainable.

For socio-environment, the security of member's investment, privacy, and personal information are considered to maintain the trust and good reputation of the organization. The Confidentiality, Integrity, and Availability of customer's information should always be the priority of every organization by providing good governance, standards, policies, and controls. As to the technology, thorough research and development and quality checking should be done before recommending it to the management for approval. In addition, PEST may Influence the Implementation of Open-Source Security Tools.

5. Strategies to get the management buy-in and stakeholders' involvement to implement Open-Source technology to improve SIDC security posture

The top 3 key factors to consider as part of the strategy for stakeholders' buy-in are: (1) Vendor Reputation, (2) Security, and (3) Awareness & Training tied to Compliance. According to (Dash & Ansari, 2022), Organizations may support resources, consideration, and accessibility via Security Education, Training, and Awareness.

The survey results on SIDC Technology Selection Framework, Open Source Stage Model of Implementation, and SIDC MINI SOC Implementation Framework of this study show how important it is to have a cybersecurity infrastructure in place. It is to improve organizations' security posture, especially SMEs with budgetary concerns for cybersecurity.

CONCLUSION

With the advent of the digitalization era or Industry 4.0, threats of cyber-attacks are also increasing. Government regulations and laws are also demanding higher fines to those who do not comply with the requirements. Compliance with the law becomes very challenging for small businesses to improve security infrastructure and avoid being a victim of data breaches or ransomware attacks. To address those challenges, Cooperatives and SMEs can set up at least basic cybersecurity infrastructures, and the availability of open-source technology is of great help. However, it is not advisable to be in a hurry on adopting said technology.

Strategic approach is required to see the big picture of the requirements and know how to deal with those technologies. People, process, technology, and finance are the variables that need to be considered and must be planned well from general to specific strategies.

Strategic tools like PEST are of great help to first identify the external factors and triggers that may influence the implementation of open-source technology. Standards and models are substantial references as well in crafting the criteria for technology selections. Stage model implementation of (Harris, 2002) is a great framework to come up with considerations and purposes as to why and how the open-source technology shall be implemented. Leveraging open-source technology is good for Cooperatives and SMEs but they need to invest in training their personnel on how to manage those open-source tools to be sustainable.

RECOMMENDATIONS

With the increasing number of threats and strict implementation of laws and regulatory requirements, SMEs like cooperatives have no exception to comply. For SMEs, especially those offering financial services, compliance with the law, like Data Privacy, is the first concern for compliance. Establishing information security and cybersecurity with a low budget is an enormous challenge for a small business. Why invest in expensive enterprise security tools if the organization can leverage them for a start using free and open-source technology?

With a handful of standards and models to select excellent open-source tools, training IT personnel and management support are the keys to consider for implementing cybersecurity infrastructure to improve security posture and address compliance issues. With open-source vulnerability assessment tools and SIEM, the organization already has visibility for any threats lurking in the infrastructures. Having visibility is a tremendous advantage to the organization in how to deal with the problem using the NIST Framework Core Structure. It is recommended using the framework and guidelines of this research to identify the right open-source security tools and take advantage of the strength of every tool that could deliver what is required by the organization.

Nessus, OpenVAS, WAZUH, ELKStack, and ALIENVAULT are the top 10 free and open-source security tools which give different results that the organization could leverage to analyze and test for known vulnerabilities and threats that may harm the organization. The researcher also recommends exploring other open-source tools and maximizing their potential to help improve the organization's security posture. Training and awareness play a vital role in successful implementation and always get stakeholder involvement for Data Privacy, Information, and Cyber Security projects.

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Laus Deo Semper!

REFERENCES

- [1]Adewumi, A., Misra, S., Omoregbe, N., Crawford, B., & Soto, R. (2016). A systematic literature review of open source software quality assessment models. SpringerPlus, 5(1), 1–13. <https://doi.org/10.1186/s40064-016-3612-4>
- [2]Admin. (2022). Top 10 Vulnerability Testing Tools 2022 | Vulnerability Scanner. <https://cwatch.comodo.com/blog/website-security/top-10-vulnerability-assessment-scanning-tools/>
- [3]Almeida, F., Duarte Santos, J., & Augusto Monteiro, J. (2020). The Challenges and Opportunities in the Digitalization of Companies in a Post-COVID-19 World. IEEE Engineering Management Review, 48(3), 97–103.<https://doi.org/10.1109/EMR.2020.3013206>
- [4]Barrett, Matt, N. (2018). Framework for improving critical infrastructure cybersecurity. Proceedings

- of the Annual ISA Analysis Division Symposium, 535, 9–25.
- [5] BasuMallick, C. (2022). Best Open Source Security Tools in 2022. <https://www.spiceworks.com/it-security/vulnerability-management/articles/top-open-source-cyb-security-tools/>
- [6] Bhandari, P. (2022). What is Qualitative Research? | Methods & Examples. Scribbr. <https://www.scribbr.com/methodology/qualitative-research/>
- [7] Breachlock. (2021). Top 5 open-source tools for network vulnerability scanning -BreachLock. <https://www.breachlock.com/top-5-open-source-tools-for-network-vulnerability-scanning/>
- [8] Brock, A. (2022). What is open source, and why does it matter today? <https://www.openaccessgovernment.org/open-source-technology/129261/>
- [9] Cadeira, H. (2021). Security Information and Event Management (SIEM) Implementation Recommendations to Enhance Network Security. May, 9–25.
- [10] Canner, B. (2021). The 10 Best Open Source SIEM Tools for Businesses. <https://solutionsreview.com/security-information-event-management/the-10-best-open-source-siem-tools-for-businesses/>
- [11] Chao, G., Peng, A., & Nunes, M. B. (2007). Using PEST Analysis as a Tool for Refining and Focusing Contexts for Information Systems Research. 6th European Conference on Research Methodology for Business and Management Studies, 229–237. <http://papers.ssrn.com/abstract=1417274>
- [12] Ching, M. R. D., Fabito, B. S., & Celis, N. J. (2018). Data Privacy Act of 2012: A Case Study Approach to Philippine Government Agencies Compliance. *Advanced Science Letters*, 24(10), 7042–7046. <https://doi.org/10.1166/asl.2018.12404CIPD>. (2021). PESTLE analysis. 1079797, 1–7.
- [13] Cornils, B. (2020). National Institute of Standards and Technology. Catalysis from A to Z. <https://doi.org/10.1002/9783527809080.cataz11352>
- [14] Crahmaliuc, R. (2022). Proprietary or Open-Source Software — Which is Best? | SimScale. <https://www.simscale.com/blog/2017/06/open-source-vs-proprietary-software/>
- [15] Creswell, W. J. (2018). Research Design: Qualitative, Quantitative and Mixed Methods Approaches. In *Journal of Chemical Information and Modeling* (Vol. 53, Issue 9).
- [16] Dash, B., & Ansari, M. F. (2022). An Effective Cybersecurity Awareness Training Model: First Defense of an Organizational Security Strategy. *International Research Journal of Engineering and Technology*, April. www.irjet.net
- [17] De, R., Pandey, N., & Pal, A. (2020). Impact of digital surge during Covid-19 pandemic: A viewpoint on research and practice. *International Journal of Information and Learning Technology*, 55, 1–6.
- [18] Dodt, C. (2020). Are open-source security tools secure? Weighing the pros and cons -Infosec Resources. <https://resources.infosecinstitute.com/topic/are-open-source-security-tools-secure-weighing-the-pros-and-cons/>
- [19] Enisa. (2022). SME Cyber Security — ENISA. https://www.enisa.europa.eu/topics/cybersecurity-education/sme_cybersecurity
- [20] Frue, K. (2016). The Advantages of PESTLE Analysis. <https://pestleanalysis.com/advantages-of-pestle-analysis/>
- [21] Gartner. (2022). Definition of Digitalization - IT Glossary | Gartner. <https://www.gartner.com/en/information-technology/glossary/digitalization>
- [22] Harris, R. (2002). A framework for poverty alleviation with ICTs. Roger Harris Associates, Hong Kong, December, 1–65. http://www.tanzaniagateway.org/docs/framework_for_poverty_alleviation_with_ICTs.pdf
- [23] Kabanda, S., Tanner, M., & Kent, C. (2018). Exploring SME cybersecurity practices in developing countries. *Journal of Organizational Computing and Electronic Commerce*, 28(3), 269–282. <https://doi.org/10.1080/10919392.2018.1484598>
- [24] Katz. (2022). 10 Best Open Source SIEM Tools for Cyber Experts | YU Online. <https://online.yu.edu/katz/blog/the-10-best-open-source-siem-tools>
- [25] Koumparoulis, D. N. (2013). PEST Analysis: The case of E-shop. *International Journal of Economy, Management and Social Sciences*, 2(February), 31–36.
- [26] Lamba, S. (2017). Key Considerations for Selecting Open Source Software | TO THE NEW Blog. <https://www.tothenew.com/blog/key-considerations-for-selecting-open-source-software/>
- [27] Li, X., Moreschini, S., Zhang, Z., & Taibi, D. (2022). Exploring factors and metrics to select open source software components for integration: An empirical study. *Journal of Systems and Software*,

- 188, 111255. <https://doi.org/10.1016/j.jss.2022.111255>
- [28] Mário Antunes, Marisa Maximiano, Ricardo Gomes, Daniel Pinto. (2021). Information Security and Cybersecurity Management: A Case Study with SMEs in Portugal. *Journal of CyberSecurity and Privacy*, 219–238.
- [29] Maury, J. (2022). Top 10 Open Source Vulnerability Assessment Tools | ESP. <https://www.esecurityplanet.com/applications/open-source-vulnerability-scanners/>
- [30] McCombes, S. (2022a). Descriptive Research Design | Definition, Methods & Examples. Scribbr. <https://www.scribbr.com/methodology/descriptive-research/>
- [31] McCombes, S. (2022b). Sampling Methods | Types and Techniques Explained. Scribbr. <https://www.scribbr.com/methodology/sampling-methods/>
- [32] Meissner, P. (2021). These countries rank highest for digital competitiveness | World Economic Forum. <https://www.weforum.org/agenda/2021/09/countries-rank-highest-digital-competitiveness/>
- [33] Morb BSP. (2017). 148 information technology risk management 1. 1–23.
- [34] Nassaji, H. (2015). Qualitative and descriptive research: Data type versus data analysis. *Language Teaching Research*, 19(2), 129–132. <https://doi.org/10.1177/1362168815572747>
- [35] Nastasie, B., & Patton, M. Q. (2006). Study Notes: Qualitative Research: Sampling & Sample Size Considerations. *Qualitative Evaluation and Research Methods*, 1–6. https://my.laureate.net/Faculty/docs/Faculty Documents/qualit_res__smp_l_size_cons_id.doc
- [36] Nathans, B. (2021). The Top 14 Free and Open Source SIEM Tools For 2022 | Logit.io. <https://logit.io/blog/post/the-top-14-free-and-open-source-siem-tools-for-2021/>
- [37] Niazi, R. (2022). The Top 10 Vulnerability Scanning Tools. <https://www.makeuseof.com/top-vulnerability-scanning-tools/>
- [38] NIST. (2018). Guide to Selecting Information Technology Security Products. National Institute of Standards and Technology, Special Publication 800 -36, 67.
- [39] Nivedita, J. (2022). 10 Best Vulnerability Assessment Scanning Tools in 2022 [Reviewed] -Astra Security Blog. <https://www.getastra.com/blog/security-audit/vulnerability-assessment-scanning-tools/>
- [40] Olin, E. (2018). Corporate Open Source Programs are on the Rise as Shared Software Development Becomes Mainstream for Businesses - Linux Foundation. <https://www.linuxfoundation.org/press-release/corporate-open-source-programs-are-on-the-rise-as-shared-software-development-becomes-mainstream-for-businesses/>
- [41] Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: How to benefit from digitalization in practice. *International Journal of Information Systems and Project Management*, 5(1), 63–77. <https://doi.org/10.12821/ijispm050104>
- [42] Pearce, J. M. (2020). Economic savings for scientific free and open source technology: A review. *HardwareX*, 8, e00139. <https://doi.org/10.1016/j.ohx.2020.e00139> *Medico Legal Update*, 21(2), 914–918. <https://doi.org/10.37506/mlu.v21i2.2800>
- [43] Praveena, K. R., & Sasikumar, S. (2021). Application of Colaizzi’s Method of Data Analysis In Phenomenological Research.
- [44] PURPLESEC. (2022). 2022 Cyber Security Statistics: The Ultimate List Of Stats, Data & Trends | PurpleSec. <https://purplesec.us/resources/cyber-security-statistics/>
- [45] QAwerk. (2019). Top 10 Open Source Security Testing Tools | QAwerk. <https://qawerk.com/blog/top-10-open-source-software-security-testing-tools/>
- [46] Ruder, K. A., Pretorius, M. W., & Maharaj, B. T. (2008). A technology selection framework for the telecommunications industry in developing countries. *IEEE International Conference on Communications*, February 2015, 5490–5493. <https://doi.org/10.1109/ICC.2008.1029>
- [47] Shehabuddeen, N., Probert, D., & Phaal, R. (2006). From theory to practice: Challenges in operationalizing a technology selection framework. *Technovation*, 26(3), 324–335. <https://doi.org/10.1016/j.technovation.2004.10.017>
- [48] Silinevicha, V., & Kalinina, K. (2017). The development of the evaluation system of factors, influencing the organization for the prevention of risks of its activity in the market in any field of activity, using pest-analysis. *Professional Studies: Theory and Practice* 2017, 3(18), 38–44.
- [49] Sirshar, M., Ali, A., & Ibrahim, S. (2019). A Comparative Analysis Between Open Source And Closed Source Software in Terms of Complexity and Quality Factors. December. <https://doi.org/10.20944/preprints201912.0063.v1>

- [50]SMB SECURE. (2021). (305) Why You Shouldn't Pay For Cybersecurity Tools - 9 OpenSource Options for Small Companies - YouTube.<https://www.youtube.com/watch?v=aRc9cJiuZEo>
- [51]Staff Contributor. (2019). 10 Best Free and Open-Source SIEM Tools - DNSstuff.<https://www.dnsstuff.com/free-siem-tools#ossim>
- [52]Taylor, K. (n.d.). Know About Top 10 Open Source SIEM Tools - HiTechNectar. Retrieved October 23, 2022, from <https://www.hitechnectar.com/blogs/top-10-open-source-siem-tools/>
- [53]Team FME. (2022). PESTLE Analysis.The World Bank. (2022). Strengthening the Digital transformation Digital Economy to Boost Infrastructure Domestic Recovery. June.
- [54]Unterfingher, V. (2022). 10 Paid and Open Source Vulnerability Management Tools to Help Your Company Seek and Fix Security Gaps. <https://heimdalsecurity.com/blog/open-source-vulnerability-management-tools>
- [55]Welekwe, A. (2022). 7 Best Free Open-source SIEM Tools for 2022 with Download Links. <https://www.comparitech.com/net-admin/open-source-siem-tools/>
- [56]Wolford, B. (2020). What is GDPR , the EU ' s new data protection law ? History of theGDPR What the GDPR says about Gdpr Eu, 1–6.
- [57]Yin, R. K. (2018). Case study research and applications: Design and methods. In *Journal of Hospitality & Tourism Research* (Vol. 53, Issue 5). SAGE Publications Asia-Pacific Pte. Ltd. <https://doi.org/10.1177/109634809702100108>
- [58]Zaman, R., & Hassani, M. (2019). Process mining meets GDPR compliance: The right to be forgotten as a use case. *CEUR Workshop Proceedings*, 2432.
- [59]Zhang, H., Ericsson, M., & Wang, L. (2020). Comparison of Open Source License Scanning Tools. Thesis.<https://www.diva-portal.org/smash/record.jsf?pid=diva2:1463853%0Ahttp://urn.kb.se/resolve?urn=urn:nbn:se:lnu:diva-97921>

READING COMPREHENSION IN RELATION TO PROBLEM-SOLVING SKILLS

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ABSTRACT

This study aimed to determine the relationship between the student's reading comprehension and problem-solving skills, and it was gathered using a descriptive-co relational method. The study was conducted in eleven public elementary schools in the two districts of the Schools Division of Kabankalan City, in which a standardized questionnaire was used to gather information about problem-solving skills, while PHIL-IRI for oral reading was adopted to measure the student's reading comprehension. One-hundred seventy selected Grade Six students served as respondents of the study, which was selected purposively. The result of the study reveals that students' reading comprehension level is instructional, while the level of problem-solving skills is poor. Interestingly, it was found that there was a significant relationship between the students' reading comprehension and problem-solving skills based on the p-value of 0.023. It is important to note that reading comprehension affects the capacity of the students to perform logical thinking and abstract reasoning. When students can comprehend what they are reading, there is a greater potential for them to perform well in solving problems. Considering the result of the study, schools may establish a reading program to enrich students' ability in reading and provide sufficient, thought-provoking, encouraging, and stimulating reading materials that help learners develop their reading comprehension and problem-solving skills.

Keywords: reading comprehension; problem-solving skills; descriptive-correlational; abstract thinking; logical thinking

INTRODUCTION

In today's information-driven world, comprehending written texts and effectively solving problems has become increasingly crucial. In an Iranian study, it was found that reading comprehension has a strong relationship with the problem-solving skills of the students, as students can who creatively face problem-solving situations are those who can comprehend texts better (Danesh & Nourdad, 2017). Strong reading comprehension skills enable individuals to access, evaluate, and synthesize information from various sources, empowering them to make informed decisions and solve complex problems.

Strong reading comprehension skills enable individuals to navigate complex texts, critically evaluate information, and draw informed conclusions. However, Ulo (2017) concluded that the reading comprehension of the students had no effect on their problem-solving skills, but in a study conducted in the Philippines by Timario (2020), it was found that reading comprehension is a predictor of problem-solving, implying that students' problem-solving skills are highly dependent on their reading comprehension.

In an examination conducted in District IV of the Schools Division Office of Kabankalan City in 2018, results show that students' reading comprehension falls under instructional, implying that their reading comprehension is 59% to 79%. Drawing from PHIL-IRI results, it is apparent that students are facing challenges in adequately comprehending written texts and effectively applying their knowledge to solve problems. Consequently, an assessment by Parales (2019) on the reading comprehension and problem-solving skills of the pupils in one of the public elementary schools in Negros Occidental shows that pupils' reading comprehension is at an instructional level that affects their low performance in problem-solving.

The study aims to determine the relationship between reading comprehension and problem-solving skills or the ability to do logical thinking and abstract reasoning. The result would help the school administrators, teachers, and researchers formulate appropriate strategies and interventions for improving students' reading comprehension and problem-solving situations that would later empower students to navigate an increasingly complex world successfully.

Statement of the Problem

The researcher aims to determine the relationship between reading comprehension to problem-solving skills.

Specifically, this study aims to answer the following questions:

1. What is the socio-demographic profile of the respondents when grouped according to sex, family income, and nutritional status?
2. What is the level of reading comprehension of the respondents?
3. What is the level of problem-solving skills of the respondents?
4. Is there a significant difference between the reading comprehension of the respondents when grouped according to their demographic profile?
5. Is there a significant difference between the problem-solving skills of the respondents when grouped according to their demographic profile?
6. Is there a significant relationship between reading comprehension and problem-solving skills?

Hypotheses

1. There is no significant difference between the reading comprehension of the respondents when grouped according to their demographic profile.
2. There is no significant difference between the problem-solving skills of the respondents when grouped according to their demographic profile.
3. There is no significant relationship between reading comprehension and problem-solving skills.

METHODS

Research Design

This study utilized the descriptive–correlational method to assess the socio-demographic characteristics of the students; mainly, it determines the relationship between two variables – the independent variables and the dependent variables. The primary purpose of this study is to determine the level of reading comprehension and its relation to students' problem-solving skills.

Locale of the Study

This study was conducted in various public schools of the Division of Kabankalan City, such as Tabugon Elementary School, Tagoc Elementary School, Pinaguinpinan Elementary School, Inapoy Elementary School, Bantayan Elementary School, Locotan Elementary School and Pacao Elementary School, Dacongogon Elementary School, Magballo Elementary School, and Baras-Duitay Elementary School. These schools were elementary public schools located in the Districts of Kabankalan III and IV.

Samples and Sampling Procedures or Techniques

One hundred seventy (170) Grade six students were selected using quota sampling.

Data Gathering Method

The first part of the questionnaire determines the socio-demographic profile of the students. In the second part of the questionnaire, the researcher utilized the Phil-IRI Oral Reading Assessment Tool to determine the oral reading level of the students.

Also, to obtain the level of problem-solving skills of the respondents, a standardized 50-item logical thinking and abstract reasoning skill test was utilized.

Validity and Reliability of the Instrument

The researcher utilized standardized questionnaires to determine the level of problem-solving skills of the students. This research instrument did not undergo a series of validity and reliability testing.

The researcher used a Phil-IRI Oral Reading Assessment Tool to determine the oral reading level of the students. According to the DepEd, it is the first validated instrument to measure comprehension ability and reading speed. It attempts to measure the pupil's comprehension level with fluency within the context of oral assessment. The student's word recognition and reading comprehension are combined and interpreted to obtain the participants' oral reading level.

Data Gathering Procedure

After the approval from the committees to conduct this research study, the researcher wrote a letter addressed to the principal and students school covered in the investigation asking them to allow researchers to conduct the study and administer the questionnaire. After the permission was granted, sufficient copies of the questionnaires were reproduced for administration to the respondents, and a schedule for administering the instrument was arranged.

The researcher personally administers the instrument to the respondents. This was done to facilitate answering questions that respondents may have and to ensure the 100% retrieval of the accomplished questionnaires.

Data from gathered responses to the questionnaire will then be processed and prepared for statistical analysis and interpretation.

Data Analyses

The statistical analyses and the subsequent interpretations of the results were guided by the sequence in which the research problems are stated in the statement of the problem.

For problem number 1, "What is the socio-demographic profile of the respondents when grouped according to sex, family income, and nutritional status?" frequency distribution was used.

For problem number 2, "What is the level of reading comprehension of the respondents?" mean was used.

For problem number 3, the "What is the level of problem-solving skills of the respondents?" mean was used.

For problem number 4, "Is there a significant difference between the reading comprehension of the respondents when grouped according to their demographic profile?" Man Whitney U was used in the sex of the students while Kruskal Wallis Analysis was utilized in the nutritional status and family income, both at 0.05 level of significance.

For problem number 5, "Is there a significant difference between the problem-solving skills of the respondents when grouped according to their demographic profile?" Man Whitney U was used in the sex of the students while Kruskal Wallis Analysis was utilized in the nutritional status and family income, both at 0.05 level of significance.

For problem number 6, Is there a significant relationship between reading comprehension and problem-solving skills? Spearman Rank Correlation at 0.05 level of significance was utilized.

RESULTS AND DISCUSSION

Table 1 Socio-demographic profile of the respondents when grouped according to Sex, Family Income, and Nutritional Status

Profile		Frequency
Sex	Male	80
	Female	90
Family Income	Poor (5,000 below)	17
	Low (5,001 to 15,000)	77
	Moderate (15,001 to 25,000)	59
	Well-off (25,001 up)	17
Nutritional Status	Severely Wasted	8
	Wasted	45
	Normal	117

Table 1 shows that most respondents are female, with a moderate family income (15,001 to 25,000) and have normal nutritional status.

Table 2 Level of Reading Comprehension of the Respondents

Variable	Mean	Interpretation
Reading Comprehension	76.74%	Instructional

It reveals that when grouped according to reading comprehension, students' reading comprehension is "Instructional" level with a mean value of 76.74%. Based on the result of Phil-IRI, they had answered the literal questions correctly, and they answered the interpretative and applied level of questions. This implies that students can still benefit from reading instructions when guided since they are not pupils who refuse themselves to read.

Table 3 Level of Problem-Solving Skills of the Respondents

Variable	Mean	Interpretation
Problem-Solving Skills	23.60	Poor

The result of the logical thinking and abstract reasoning test reveals that students have a poor understanding of the questions. This implies that they perform poorly in thinking logically and abstractly. They perform poorly calculating simple operations, answering logical questions, and understanding abstract situations.

Table 4 Difference between the Reading Comprehension of the Respondents when grouped according to their Sex

Variable	Mann –Whitney U	Wilconxon W	Z	Asymp. Sig. (2-Tailed)
Sex	2940.000	6180.000	-2.198	0.028

By using the Mann-Whitney U statistical analysis, it shows that Asymp. Sig. (2-tailed) The value of reading comprehension is equal to 0.028, which is less than 0.05 alpha level, which reveals a significant difference in reading comprehension and sex. The result implies great differences in the scores of male and female students in reading comprehension. For instance, girls perform better than boys regarding reading comprehension. Girls were more oriented in reading, fond of reading literature, and focused more on their education compared to male in the elementary level who is fond of playing and seems to have underachievement in reading.

Consistently, Arellano (2013) has concluded that sex is significantly related to children's reading comprehension. He stated in his study that female students have a higher reading comprehension level in English than male students. Female students get better scores in reading comprehension than males, and even females achieve more heightened reading activity. In contrast, Vlanchos et al. (2016) indicated the results of their study that sex doesn't play an essential role in reading comprehension, which is generally in line with the result of the study of Volkel, Seabi & Goldschagg (2016).

Table 5 Difference between the Reading Comprehension of the Respondents when grouped according to their Family Income

Variable	Chi-Square	df	Asymp. Sig. (2-Tailed)
Family Income	1.834	3	0.608

By using the Kruskal Wallis Analysis, it shows that the Assymp. Sig. (2-tailed) value of reading comprehension in terms of family income is 0.608, which indicates that its value is greater than the 0.05 alpha level. It reveals that there was no significant difference in the students' reading comprehension when grouped according to their family income. Students' reading comprehension scores were not different, even when grouped according to their family income. This implies that socioeconomic status is

not a factor in determining the progress of students reading comprehension. Even if the students came from low-income families, they were still able to enhance their reading comprehension even if there was a lack of materials in reading, and even if the student came from a high-income family with sufficient reading materials, reading is still compromised. There were no great differences in their scores on a reading comprehension test.

Correspondingly, Volkel, Seabi, & Goldschagg (2016) stated that reading comprehension that family income doesn't play a significant role in reading comprehension. Student from low-income family tends to perform in school though their physiological needs are not provided.

However, Korat (2011) found that learners from a lower socioeconomic status achieved reading lower reading scores than those of higher socioeconomic status.

Table 6 Difference between the Reading Comprehension of the Respondents when grouped according to their Nutritional Status

Variable	Chi-Square	df	Asymp. Sig. (2-Tailed)
Nutritional Status	0.944	2	0.624

By using the Kruskal Wallis Analysis, it reveals that the Asymp. Sig. (2-tailed) value of reading comprehension in terms of nutritional status is 0.624, which indicates that its value is greater than 0.05 alpha level. It reveals that there is no significant difference in the students' reading comprehension when classified according to their nutritional status. This implies that the scores of students who were severely wasted, wasted, and normal in their nutritional status don't have significant differences and don't differ from each other. The differences in students' nutritional status do not affect their reading ability because reading is neurological and cognitive development and somewhat develops separately physically.

On the other hand, Schmunk (2010) concluded in her study that there is a significant connection between the nutritional status of children to their reading comprehension. Malnourishment affects physical growth, the immune system, neurological development, and cognitive functioning. Children who are malnourished have a profound influence on their educational progress. It may cause lower levels of aspirations, accomplishment, and even intelligence. (Tara & Potts-Daterma, 2005)

Table 7 Difference between the Reading Comprehension of the Respondents when grouped according to their Demographic Profile

Variable	p-value
Sex	0.234
Family Income	0.487
Nutritional Attainment	0.421

It was revealed that there was no significant difference in the problem skills of the students when classified according to their profiles. This suggests that students' scores in problem-solving skills do not significantly differ in their profile. Their profiles don't affect their scores in problem-solving skills tests.

Conversely, Piaget (1968) stated that various factors could affect students' logical and abstract thinking ability, such as their age, sex, socioeconomic status, educational attainment of their parents, and even their nutritional status; thus, it has a significant relationship. According to Piaget, age tends to affect problem-solving skills because abstract and logical thinking develops during the formal operational stage or the 12th year of their lives. Younger children have less logical and abstract reasoning abilities than older ones because they are just beginning to make sense of the world. Older children can make logical decisions and even hypotheses formulation. Also, female students were better problem solvers in logical and abstract thinking than males. Male students decide much more directly, while women are gatherers that seek various options and conventions before solving problems (Whendall, K., & Limbrick, L., 2010; Shuman, 2015).

On the other hand, socioeconomic status also affects the children's problem-solving skills. Higher-income families can afford higher education, tutors, and trainers that will help them develop their problem-solving skills compared to lower-income families that sometimes suffer and even their education is neglected and sacrificed.

Moreover, nutritional status can affect problem-solving skills because if a child is provided with complete nourishment, their mental health will boost and improve. They will develop good focus and better understanding to enhance their skills in problem-solving.

Table 8 Relationship between Reading Comprehension and Problem-Solving Skills

Variables	r-value	p-value
Reading Comprehension and Problem-Solving Skills	0.64	0.023

By using the Spearman Rank Correlation, it reveals that the p-value of reading comprehension and problem-solving skills is 0.023, which indicates that its value is less than 0.05 alpha level. It shows a significant relationship between reading comprehension and problem-solving skills. This implies that reading comprehension affects students' ability to understand logical and abstract questions. Therefore, problem-solving and reading comprehension rely on the reader's recognition and perception of symbols in written language, grammar, cognitive skills, and real-life experiences. Just as problem-solving requires more than performing operations with numbers and using four main operations and symbols, reading comprehension requires more than word recognition and accurate vocalization. Problem-solving and reading comprehension essentially work together to reach a goal and do so by utilizing different resources for this purpose.

Consequently, problem-solving and reading comprehension essentially work together and are closely related. The one who cannot read and understand what they are reading cannot answer logical and abstract questions correctly (Barton, Heidema, & Jordan, 2002). Matel (2014) concluded in his study that there is a significant relationship between students' reading comprehension a problem-solving skills. If students cannot process symbols, they cannot read or solve problems. In short, the student must be able to read before succeeding in any other academic endeavor. (Fite, 2002).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the result of the study, the following conclusions were made:

1. Most of the respondents were female, from a family with low monthly income, and normal in their nutritional status.
2. It reveals that the reading comprehension of the respondents was instructional, which means they can recognize words of about 90% to 96% and can comprehend text from 59% to 79%
3. The results indicate that the respondents' problem-solving skills were poor. It reveals that students have a low understanding of logical and abstract questions.
4. There was no significant difference in the student's reading comprehension level when grouped according to family income and nutritional status. Scores of the students were closely related to each other. Furthermore, it was found that there was a significant difference between the students' reading comprehension levels when classified according to sex. There was a female superiority when it came to reading comprehension.
5. There was no significant difference between the level of problem-solving skills of the students when categorized according to sex, family income, and nutritional status. Their profiles have no influence on their scores in problem-solving skills.
6. There was a significant relationship between the students' reading comprehension and problem-solving skills. This implies that reading comprehension affects the capacity of the students to answer questions in logical thinking and abstract reasoning. If students can understand the text they are reading, there is a greater tendency for them to perform well in problem-solving.

Recommendations

In view of the above-mentioned findings and conclusions, the following recommendations were offered: In view of the findings mentioned above and conclusions, the following recommendations were offered:

Students may learn how to improve and develop their reading comprehension. They should engage themselves in reading English literature, such as poems, stories, anecdotes, legends, and novels. There must be an intrinsic motivation towards reading to improve their reading capacity, vocabulary, and grammar and discover new words and meaning in the contemporary context. Also, with the teacher's guidance, they will be able to understand the text and use it to be a competent reader and individual.

In order to develop students' problem-solving skills, they may be attentive, well-organized, flexible, and motivated to find the solution. Problem-solving skills don't just deal with several complex issues, but it requires complex critical thinking in such inquiry. Students should open themselves to other experiences by working with their peers, sharing their opinions and ideas, and engaging in necessary thinking activities. Also, students need to evaluate their potential and structure themselves in approaching problem-solving skills. Teachers should also give encouraging, stimulating, and varied activities to develop students' logical and abstract thinking. Teachers must provide an activity that measures students' logical and abstract thinking to train the children's minds. They can integrate these activities or games into their lesson to make them interactive. They can have simple logic and abstract tests appropriate to their students' level to increase their problem-solving abilities.

Schools may have a reading center or library where learners could find time to read new books and discover new ideas and knowledge. These reading and library and reading centers are essential tools for the students' assignments and research. These places must be complete, adequate, and packed with new resources and updated educational tools.

The school administrators, principal, and teachers may institute a policy where teachers must contact parents periodically throughout the year to monitor students' performance in school. Teachers should encourage them to increase parental involvement as it has been agreed that parents genuinely make a difference in learners' achievement and behavior. Parents can do some remedies and actions to improve the performance of students in reading and problem-solving skills, like tutoring, scaffolding, and evaluating their children.

Classrooms may have sufficient reading materials that will enable learners to develop their reading comprehension. These reading materials must be encouraging, thought-provoking, and stimulating, which will help them understand and effectively capture the ideas in the text being read. Also, through the reading materials provided in the classroom, they have a chance to learn a new word, develop their vocabulary power, and, most especially, their reading comprehension.

Future researchers may take this further by utilizing different techniques to gain better results. They can include different variables for teachers and students and use profound literature to support this study. Their results could serve as a key to the development and improvement of this study.

REFERENCES

- Arellano, M.D. (2013). *Gender Differences in reading comprehension achievement in English as a foreign language in Compulsory Secondary Education*. Unibersidad de Granada. Spain. Retrieved from http://www.scielo.br/scielo.php?Pd=S1516-18462014000501541&script=scie_arttext&tlng=en
- Barton ML, Heidema, C., Jordan, D., (2002). *Teaching Reading in Mathematics and Science*. Educational Leadership (Online). 60 (3): 24-28. Available from: <https://www.hol.edu/syllabusuploads/teachingreadinginmathandscience.pdf>
- Danesh, M., & Nourdad, N. (2017). On the relationship between creative problem-solving skill and EFL reading comprehension ability. *Theory and practice in Language Studies*, 7(3), 234-240.
- Fite, G. (2002). *Reading and Math: What is the Connection. A Short Review of the Literature*. Kansas Science Teacher Vol. 14, Spring 2002. Kansas City, KS Public School
- Korat O. (2011). *Mothers' and Teachers' estimation of first graders' literacy level and their relation to the children's actual performance in different socio-economic status groups*. Educ. Treat. Child. 2013;8:1-8.doi:10.1371/journal.pone.0078608. Retrieved from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PM4808985/#!po95.8333>

- Matel, P. (2014). *Reading Comprehension and Problem Solving Skills of Fourth Year High School Students of Tagaytay City Science National High School 2013 – 2014*. Unpublished Master Thesis. Cavite State University, 2. Retrieved from <http://google.com/readingcomprehensionandproblemsolvingskills>
- Palares, M.M. (2019). Assessment Of Reading Comprehension And Problem Solving Skills Of Grade VI Pupils. Unpublished Master's Degree Thesis. University of St. Lasalle
- Schmunk, H. (2010). *Understanding the Relationship between Nutritional Status, Obesity and Academic Achievement*. Trinity University. Sociology and Anthropology Department. 4-21-2010. Retrieved from [https://link.springer.com/article/10.1007.BF03324482](https://link.springer.com/article/10.1007/BF03324482)
- Shuman, V. & Scherer, K. R. (2014). Concepts and structures of emotions. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp. 13-35). Taylor & Francis.
- Timaro (2020). Reading Comprehension and Problem-Solving Skills of Grade Seven Students: A Mixed Sequential Explanatory Approach. *American Journal of Humanities And Social Science*. e-ISSN :2378-703X, Volume-4, Issue-6, pp-83-91
- Whendall, K., & Limbrick, L. (2010). *Do more boys than girls have reading problems?* *Journal of Learning Disabilities*, 43, 418-429.10.1177/0022219409355477 (CrossRef), (PubMed), (Web of Science) (Google Scholar) Retrieved from: www.tandfonline.com/doi/full/10.1080/23311908.2015.1045224
- Ulu, M. (2017). The Effect of Reading Comprehension and Problem Solving Strategies on Classifying Elementary 4th Grade Students with High and Low Problem-Solving Success. *Journal of Education and Training Studies*, 5(6), 44-63.
- Vlachos, F. & Papadimitriou, A. (2015). *Effect of age and gender on children's reading performance: The possible Neural underpinnings*. Research Article. Retrieved from: <http://dx.doi.org/10.1080/23311908.2015.1045224>
- Volkel, G., Seabi, J., and Goldschagg, P. (2016). *The Impact of Gender, Socio-economic Status and Home Language on School Children's Reading Comprehension in KwaZulu-Natal*. *Int J Environ Res Public Health*. Doi: 10.3390/ijerph13030322. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PM4808985/#!po95.833>

SENSORY PROFILE EVALUATION OF BANANA CAKE USING DIFFERENT KINDS OF COMMERCIAL MILK

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ABSTRACT

The purpose of the study was to evaluate the sensory profile evaluation of banana cake using different kinds of commercial milk. In terms of general appearance, aroma, texture, taste, and general acceptability. The study was conducted at the Senior High School Home Economics Laboratory, New Society National High School, General Santos City, in February 2023. Five treatments were used in this study: Treatment 1 evaporated milk, Treatment 2 condensed milk, Treatment 3 powdered milk, and Treatment 5 coconut milk. Fresh milk, Treatment 4. The samples were evaluated by five (5) groups of panelists composed of experts, male faculty, female faculty, administrative staff, and students. Two-way analysis of variance with interaction and Tukey HDS Test were used as statistical tools in this study. The Banana cakes were rated equivalent to appealing to very appealing appearance, pleasant to the very pleasant aroma, good to excellent texture, and taste moderate to like very much as general acceptability. The banana cakes made from the five treatments differed significantly in terms of general appearance, aroma, texture, taste, and general acceptability. The results revealed that the use of condensed milk produced the best quality banana cake as rated by the panelists as very pleasant in aroma, excellent in taste, and like very much general acceptability. The study's result further showed no significant differences in ratings between groups of panelists in terms of appearance, aroma, texture, taste, and general acceptability. Moreover, the group of administrative staff had greater preferences for banana cake in terms of taste. The results will serve as additional information to homemakers, bakers, nutritionists, and individuals who love to eat banana cakes.

Keywords: Sensory Profile, Appearance, Aroma, Texture, Taste, General Acceptability

INTRODUCTION

Banana (*Musa spp.*) plants are well known for their edible fruit and serve as a staple food crop in Africa, Central, and South America (Arias et al., 2003). With more than 112 million tons produced in 2016, bananas are among the most popular fruits in the world and provide many employment opportunities (FAO, 2019). Furthermore, banana fruits are rich in health-promoting minerals and phytochemicals, including flavonoids, a class of plant-specialized metabolites, which contribute to the beneficial effects through their antioxidant characteristics (Forster et al., 2003; Wall, 2006; Singh et al., 2016).

Banana is one of the most widely grown tropical fruits, cultivated in over 130 countries, along the tropics and sub-tropic of Capricorn. Edible bananas are derived from *Australimusa* and *Eumusa* series, which have different origins from the same genus. Most of the edible bananas are either derived solely from *Musa acuminata* or a hybrid between two wild diploid species, *M. acuminata* Colla and *M. balbisiana* Colla; which contributed to A and B genomes, respectively. The plant has an origin from India and the eastern Asian region (Malaysia and Japan) and some varieties are found to be genetically linked with some species from Africa.

Banana is an edible fruit produced mainly in any tropical country where the climate contributes to the flavor and quality enhancement of this fruit. It usually comes in many sizes and colors depending on the planted variety. Accordingly, this fruit has been said to contribute a sum amount of money to the

economic development of one's country because of its ability to produce a variety of products. Clark, J. (2015).

Furthermore, banana fruits are rich in health-promoting minerals and phytochemicals, including flavonoids, a class of plant-specialized metabolites, which contribute to the beneficial effects through their antioxidant characteristics (Forster et al., 2003; Wall, 2006; Singh et al., 2016).

Milk and milk products are vital foods for humans because they give essential nutrients to people of all ages. Research on developing new milk products has been widely done using new technologies, and the products can be categorized as functional foods.

Milk is a highly nutritious food that meets the complete nutritional needs of humans of all ages. The consumption of milk either as milk per se or milk products varies considerably among regions, depending on tradition, availability, price, and other reasons. World milk production across many countries has increased from decade to decade. Most likely this is due to the increasing demand for milk because of population growth, urbanization, increased income per capita, and changing food consumption preferences. It is interesting that the production of milk in India is in the top-ranked position. The contribution of goat and sheep milk production in India is high and plays a significant role in the national economy.

Humans have a long tradition of consuming milk produced by animals. Milk is used as raw materials for several milk products such as liquid milk as a beverage, skim milk, cream, butter, and ice cream. Fermentation of milk using lactic acid bacteria produces yogurt and cheese, two of the most popular products. Fermented milk is reported as a milk product having healthy properties.

Banana is farmed in various parts of the country and is regarded as one of the most important sources of income for Filipinos, particularly those in rural areas, with 80 to 85% of global banana crops grown locally for domestic consumption. A plain table banana is the most frequent way to serve bananas. It can also be made into a variety of other desserts such as cakes, pies, and pastries. It can also be made into a variety of other desserts such as cakes, pies, and pastries. For the health-conscious, it can also be served as a basic salad with milk.

Statement of the Problem

This study determined the quality of the banana cake using different kinds of milk as to general appearance, aroma, texture, taste, and general acceptability

Specific Objective

1. To determine the quality of the banana cake using different kinds of milk as to general appearance, aroma, texture, taste, and general acceptability.
2. To determine the best banana cake using different kinds of milk.

REVIEW OF RELATED LITERATURE

Erfanian (2019) Sensory results indicated that cake with 50% soy milk had the most favorable acceptance scores with the highest score in the aroma, color, and taste attributes. The addition of soy milk of up to 50% produced a cake with higher protein content and lower carbohydrate content, along with lower density and higher specific volume compared to the control. Cake with 50% soy milk addition had lower microbial counts as compared to the control. Therefore, soy milk has the potential to act as a milk replacer in cake production.

Cabajar and Dampil (2016) data shows that in the sensory quality evaluation of the papaya ketchup in terms of Color, Texture, and Odor Treatment 3 was described as slightly acceptable while in terms of Flavor and Taste Treatment, 4 was favored most by the participants.

Beegum (2016) study indicated that the incorporation of VCO cake in muffin formulations resulted in a significant effect on the physical, textural, and sensory attributes of the muffins. There was a decrease in the baked height, hardness, springiness, chewiness, and resilience due to the reduction in gluten. The presence of VCO cake gave additional softness and crumbly structure in the prepared muffin formulations. The sensory panel liked all the VCO cake formulations (from 10 to 50 g/100 g flour blend). The only problem found with the muffins containing 50 g VCO cake was its oily taste.

METHODOLOGY

This study would determine the effect of the quality of Banana Cakes using different kinds of milk, and evaluate the products according to their general appearance, aroma, texture, taste, and general acceptability. Given as follows were the materials, ingredients, and methods used in the product of the study.

Preparation

Preparation of Utensils, all utensils needed are washed and drained. The oven was pre-heated at 250* before mixing the ingredients, all reparation of the ingredients. The bananas used were fresh. The ingredients were bought in the market and grocery store before pursuing the procedure. Preparation of the banana. Good quality banana was chosen. The banana was washed, peeled, and mashed. Procedure for baking cake. All ingredients were thoroughly mixed except oil and baking soda. All the ingredients were poured into the prepared baking pans and dusted with wheat flour. Then baked at 250* C for 45 minutes.

Table 1. The Experimental Design

Ingredients	T1	T2	T3	T4	T5
Banana	500g	500g	500g	500g	500g
Baking Soda	4g	4g	4g	4g	4g
Shortening	125g	125g	125g	125g	125g
Egg	200g	200g	200g	-	-
Flour	768g	768g	768g	768g	768g
Sugar	170g	170g	768g	768g	768g
Salt	4.2 g	4.2 g	4.2 g	4.2 g	4.2 g
Milk	192 g	192 g	192 g	192 g	192 g

There were five treatments in the study. Banana cake samples of each treatment were placed in individual saucers for evaluation according to their general appearance, aroma, texture, taste, and general acceptability. The sample was evaluated by 20 boards of tasters composed of experts, male faculty, female faculty, administrative staff, and students. Each evaluator was provided with a score sheet and a glass of water for rinsing their mouth after sampling.

Statistical Analysis

The data in ordinal scale will be analyzed using – Two Way Analysis of Variance with interaction and Tukey HSD Test. If the test yielded a significant result, multiple comparisons of mean ranks were used.

Locale of the Study

The study entitled “Sensory profile evaluation of banana cake using different kinds of commercial milk”, was conducted at the Senior High School Laboratory, New Society National High School, General Santos City, February 2023.

Participants of the Study

The products were evaluated by twenty (20) panelists categorized into 5 groups namely: expert, male faculty, female faculty, administrative staff, and students of New Society National High School.

Research Instrument

The data were analyzed using Two Way Analysis of Variance with interaction and Tukey Test.

There were five treatments used in this study namely: Treatment 1- Evaporated Milk, Treatment 2- Condensed Milk, Treatment 3- Fresh Milk, Treatment 4- Powdered Milk, and Treatment 5- Coconut Milk.

RESULTS and DISCUSSIONS

General Appearance

Table 1 shows the result of the product quality of banana cake using Different Kinds of Milk in terms of appearance. As reflected in Table 1, treatments 1 (evaporated milk), 2 (condensed milk), 3 (fresh milk), 4 (powdered milk), and 5 (coconut milk) were rated 3, 8, 4,4, 3.6, 3.5, and 4.1 respectively. All treatments had qualitative descriptions of appeal.

Statistical analysis indicated significant differences in rating between treatments on general appearance.

Tukey test further showed that treatments 1,2 and 5 were comparable in terms of appearance and treatments 1,3,4, and 5 were also comparable.

Analysis of variance also showed that ratings given by the group of panelists did not differ significantly. The group of experts, male faculty, female faculty, administrative staff, and students gave mean ratings of 3.9, 3.7, 3.9, 4.0, and 3.9 respectively.

The results suggest that bananas could be added with different forms of milk in making the cake with quality considered “appealing”. The results further imply that the different panelists had comparable preferences for the banana cake.

Table 1. Mean ratings on the appearance of banana cake using different kinds of milk.

Treatment	Experts	Male Faculty	Female Faculty	Admin Staff	Students	Mean Rating
T1 - Evaporated milk	3.5	3.5	4.3	3.8	4.0	3.8 ^{ab}
T2 - Condensed milk	4.8	4.5	4.3	4.5	4.0	4.4 ^a
T3 – Fresh milk	3.3	2.8	3.3	4.5	4.0	3.6 ^b
T4 –Powdered milk	3.5	3.8	3.3	3.0	3.8	3.5 ^b
T5 – Coconut Milk	4.5	3.8	4.3	4.3	3.8	4.1 ^{ab}
Mean Rating	3.9	3.7	3.9	4.0	3.9	3.9

Legend: Mean rating with common letter superscripts do not differ significantly at the 5% level (Turkey HSD Test)

Legend: Rating Equivalents 4.5 - 5.00-Very Appealing 3.5 - 4.99-Appealing 2.5 – 3.49-Moderately Appealing 1.5 – 2.49-

Slightly Appealing 1.0 – 1.49-Unappealing

AROMA

In terms of aroma, Treatment 2 got the highest mean rating of 4.5, and Treatment 1,3,4, and 5 obtained the mean ratings of 4.0, 3.7, 3.6, and 4.0 respectively. Treatment 2 means rating had the qualitative equivalent of very pleasant. While the four treatments had qualitative equivalent as pleasant.

Among the group of panelists experts and administrative staff had numerically higher mean rating of 4.2 with the qualitative of pleasant aroma. Male faculty, female faculty, and students gave lower mean ratings of 3.5, 4.0, and 3.9 respectively, and had the qualitative equivalent of pleasant aroma. However, analysis of variance indicated no significant differences in ratings between panelists.

Significant differences were noted in aroma between treatments, the Tukey test showed that treatments 2,1, and 5 were comparable. Treatments 1,3,4 and 5 were also comparable.

The results imply that condensed milk produced significantly better banana cake in terms of aroma.

Table 2 – Mean rating on the aroma of banana cake using different kinds of milk.

Treatment	Experts	Male Faculty	Female Faculty	Admin Staff	Students	Mean Rating
T1 - Evaporated milk	4.3	3.5	4.0	4.0	4.0	4.0 ^{ab}
T2 – Condensed milk	4.8	4.5	4.5	4.8	3.8	4.5 ^a
T3 – Fresh milk	3.8	3.0	3.8	4.0	3.8	3.7 ^b
T4 – Powdered milk	4.0	3.3	3.5	3.8	3.5	3.6 ^b
T5 – Coconut Milk	4.3	3.0	4.3	4.3	4.3	4.0 ^{ab}
Mean Rating	4.2	3.5	4.0	4.2	3.9	3.9

Legend: Mean rating with common letter superscripts do not differ significantly at the 5% level (Turkey HSD Test)

Legend: Rating Equivalents 4.5 - 5.00-Very Appealing 3.5 - 4.99-Appealing 2.5 – 3.49-Moderately Appealing 1.5 – 2.49-

Slightly Appealing 1.0 – 1.49-Unappealing

Texture

As shown in Table 3, treatments 1,2,3,4, and 5 had mean ratings of 3.8, 4.4, 3.1, 3.5, and 3.8 respectively. The qualitative description of treatments 1,2,4, and 5 was good while treatment 3, was qualitatively satisfactory.

The group of experts, female faculty, administrative staff, and students had rated the texture of banana cake from five treatments with corresponding mean ratings of 3.6, 4.0, and 4.0 with qualitative of good texture.

Statistical analysis indicated significant differences in texture between treatments. Tukey test further showed that treatments 1,2, and 5 were comparable and treatments 1,3, and 5 were also comparable.

Table 3. Mean rating on the texture of banana cake using different kinds of milk.

Treatments	Experts	Male Faculty	Female Faculty	Admin Staff	Students	Mean Rating
T1 Evaporated milk	3.3	4.0	3.8	3.5	4.3	3.8
T2 Condensed milk	4.5	4.3	4.3	4.5	4.3	4.4
T3 Fresh milk	3.0	2.8	2.5	3.3	3.8	3.1
T4 Powdered milk	3.5	3.0	3.0	4.0	4.0	3.5
T5 Coconut milk	3.8	2.8	4.3	4.5	3.8	3.8
Mean Rating	3.6	3.4	3.6	4.0	4.0	3.7

Legend: Rating Equivalents 4.5 - 5.00-Very Appealing 3.5 - 4.99-Appealing 2.5 - 3.49-Moderately Appealing 1.5 - 2.49 Slightly Appealing 1.0 - 1.49-Unappealing

Moreover, statistical analysis indicated no significant differences between panelists and the interaction effect between panelists and treatment. The above results imply that banana cakes could be made by adding evaporated milk, condensed milk, and coconut milk with comparable quality in terms of texture.

Taste

In terms of taste, treatment 2 had the highest mean rating of 4.5 with the qualitative equivalent of excellent. Treatments 1, 4, and 5 had respective mean ratings of 4.0, 3.7, and 4.1, qualitatively good. Treatment 3 had a qualitative description satisfactory with a mean rating of 3.4.

The administrative staff gave a higher mean rating of 4.5 and qualitatively excellent another group of panelists gave a mean rating of 4.1, 3.5, 3.9, and 3.8 respectively, and had qualitative descriptions as good.

Tukey test further showed that treatments 1, 2, 4, and 5 were comparable. Treatments 1, 3, 4, and 5 were also comparable.

Statistical analysis indicated that the panelists' ratings on the prepared banana cake were significantly different. Moreover, no interaction effect between groups of panelists and treatments was noted.

Table 4 - Mean rating on the taste of banana cake using different kinds of milk.

Treatments	Experts	Male Faculty	Female Faculty	Admin Staff	Students	Mean Rating
T1 Evaporated milk	4.0	3.8	3.8	4.8	3.8	4.0 ^{ab}
T2 Condensed milk	4.5	4.8	4.3	4.8	4.0	4.5 ^a
T3 Fresh milk	3.8	2.8	3.3	4.3	3.0	3.4 ^b
T4 Powdered milk	4.0	3.0	3.5	4.0	4.0	3.7 ^{ab}
T5 Coconut milk	4.0	2.8	4.5	4.5	4.3	4.1 ^{ab}
Mean Rating	4.1 ab	3.5 b	3.9 a	4.5a	3.8 ab	3.9

Legend: Mean rating with common letter superscripts do not differ significantly at 5% level (Turkey HSD Test)

Legend: Rating Equivalents 4.5 - 5.00-Very Appealing 3.5 - 4.99-Appealing 2.5 - 3.49-Moderately Appealing 1.5 - 2.49 Slightly Appealing 1.0 - 1.49-Unappealing

*Mean ratings with common letter superscripts do not differ significantly at 1% level (Tukey Test). The result suggests that the addition of condensed milk produces a banana cake with better quality in terms of taste, rated as excellent.

General Acceptability

As shown in Table 5, treatment 2 got a higher mean rating of 4.5. Treatments 1, 3, 4, and 5 have respective mean ratings of 4.0, 3.5, 3.5, and 4.2. Treatment 2 had a qualitative description of "like very much. Treatments 1, 3, 4, and 5 were qualitatively rated "like moderately"

The group of experts, male faculty, female faculty, administrative staff, and students had a mean rating of 4.0, 3.9, 3.8, 4.3, and 3.9. All these mean ratings had a qualitative description of "like moderately". Statistical analysis indicated significant differences in the general acceptability of the banana cake between treatments. Tukey test further showed that treatments 1, 2, and 5 were comparable in terms of general acceptability. Treatments 1, 3, and 4 were also comparable.

Analysis of variance also showed no significant result on ratings between the groups of panelists and the interaction effect between treatment and panelists.

The results imply that banana cake could be added with different kinds of milk and qualitatively equivalent to "like very much"

Table 5. Mean ratings on the general acceptability of banana cake using different kinds of milk

Treatments	Experts	Male Faculty	Female Faculty	Admin Staff	Students	Mean Rating
T1 Evaporated milk	3.8	3.8	4.0	4.3	4.0	4.0 ^{ab}
T2 Condensed milk	4.5	4.8	4.0	4.8	4.5	4.5 ^a
T3 Fresh milk	3.5	3.0	3.0	4.3	3.8	3.5 ^b
T4 Powdered milk	3.8	3.3	3.5	3.8	3.3	3.5 ^b
T5 Coconut milk	4.3	3.5	4.8	4.3	4.3	4.2 ^{ab}
Mean Rating	4.1	3.7	3.8	4.3	4.0	3.9

Legend: Mean rating with common letter superscripts do not differ significantly at the 5% level (Turkey HSD Test)

Legend: Rating Equivalents 4.5 - 5.00-Very Appealing 3.5 - 4.99-Appealing 2.5 - 3.49-Moderately Appealing 1.5 - 2.49 Slightly Appealing 1.0 - 1.49-Unappealing

CONCLUSIONS

- The banana cake using different kinds of milk was rated qualitatively as appealing to very appealing, pleasant to very pleasant, good to excellent taste and texture, and like moderately to like very much.
- Significant differences in quality were noted between treatments in terms of appearance; aroma, taste, texture, and general acceptability.
- Treatment 2 had better quality in terms of aroma, taste, and general acceptability being deemed as very pleasant, excellent in taste, and liked very much in all treatments.
- The group of panelists gave comparable mean ratings on general appearance, aroma, texture, and general acceptability. However, significant variations were noted in ratings between panelists in terms of taste.
- The administrative staff had greater preferences for the taste of the banana cake than the other groups.
- The different forms of milk could be utilized as ingredients in making banana cake with acceptable quality.
- But as rated by the selected panelist banana cake with condensed milk is deemed as the best.

RECOMMENDATIONS

- Further studies are being recommended to improve the quality of the banana cake.
- One cup of cake flour might be substituted with one cup of sweet potato flour to add some more ingredients to the banana cake.
- Banana cake can be enhanced by adding a different flavoring ingredient.
- You may add baking powder in making a banana cake to improve its texture.
- In terms of shortening, you may use butter for a richer flavor.

REFERENCES

- Mohiuddin, A., Saha, M. K., Hossian, M. S., & Ferdoushi, A. (2014). Usefulness of Banana *Musa paradisiaca*) Wastes in Manufacturing of Bio-products: A Review. *The Agriculturists*, 12(1), 148-158. <https://doi.org/10.3329/agric.v12i1.19870>
- Sassi, A., Charfi, F., Kamoun, L., Elhillali, Y., & Rivenq, A. (2015). Experimental measurement for vehicular communication evaluation using OBU ARADA System. 2015 International Wireless Communications and Mobile Computing Conference (IWCMC). <https://doi.org/10.1109/iwcmc.2015.7289280>
- Visakh. P. M, Laura B. Iturriaga and Pablo Daniel Ribotta (eds.) *Advances in Food Science and Nutrition*, (49–68) 2014 © Scrivener Publishing LLC
- H.N. Ramya* and S. Anitha Nutritional and Sensory Evaluation of Mango Pulp and Milk Powder Incorporated Sponge Cake 2020.
- Arezoo Erfanian Effects of soy milk on Physical, rheological, microbiological and sensory properties of cake • February 2019 • *International Food Research Journal* 26(1):237-245 • Universiti Malaysia Sabah (UMS).
- Shameena Beegum. Effect of virgin coconut oil cake on physical, textural, microbial, and sensory attributes of muffins • December 2016 • *International Journal of Food Science & Technology* 52(2) DOI:10.1111/ijfs.13310.
- Yolan M. Cabajar and Eufemia S. Dampil,MS.FS Product Development and Acceptability of Solo Papaya (*Carica papaya*) Ketchuo 2016

CAREER GUIDANCE SERVICES AND FACTORS THAT INFLUENCE STUDENTS' CHOICE OF COURSE IN COLLEGE

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ABSTRACT

The major objective of this study was to assess the factors that influence students' choice in studying college and career guidance services offered in the public secondary schools. This study was a descriptive research design using a modified survey questionnaire and cluster random sampling technique. It was conducted to fifteen (15) public secondary schools in Candijay, Alicia, Mabini, Anda and Guindulman, Bohol, Philippines. The results revealed that there is a significant difference between the perception of the teachers and the students on the career guidance services offered in the school as to career guidance participation, career information, career exploration, and career guidance assessment. On the other hand, there is significant relationship between the perception of the teachers and the students on the career guidance services offered in the school as to career development. Further, the factors of students' choice influence their decision making and interest, consideration about the institution. This study concluded that the career guidance services offered by the school affect the students' choice in studying college. Career development, career exploration, career information and career guidance assessment clearly denote the valuable career guidance services that students avail in schools in order for them to prepare for right and appropriate choice of course to enrol in college.

Keywords: Career Guidance Services, Choice of Course, College, Factors, Influence, Students

INTRODUCTION

Education has the objective which is to help people discover and develop their talents so that they may make educated professional options later in life. To explore and plan for future career ventures that are suited to their specific interests, talents, and beliefs, students require career counseling and guidance. Participating in career guidance counseling promotes career preparation and management by strengthening the link between academic and professional experiences.

After determining the career in which one might perform best based on one's personality attributes, choice of career is a representation of self- fulfillment in career. It includes a person's professional pattern, making of decisions style, integrating roles of one's life, expressing personal values, and developing strong life concept, among other things (Herr & Cramer, 2016). Guidance is assistance given to pupils in school with the aim to improve utmost potential. Adolescents in school require "transition enhancing support," as defined by Baker (2015), to prepare them for future career and employment.

As a result, a guidance program of school should offer a variety of activities to fulfill the progressive and professional development needs of these adolescents. "Learning about oneself, pursuing a specific professional and educational goal, and adapting to changing circumstances," developing the ability to make decisions and solve problems, taking responsibility for their actions and improving social, emotional, and intellectual skills, according to Rosemary (2017).

Participating in school-based career advising programs provides children with the knowledge, skills, and awareness they need to succeed in the job. For students, it is a way of getting them oriented to ca-

reers that fit their interests and skills. Within the professional development process, teenagers must identify their interests and capabilities, weigh them against the labor market options, and eventually establish a career choice, (Jarvis & Keeley, 2018). The need of providing "transition augmentation" help in students' future education, training, or career has been emphasized (Baker 2015).

Literature assessments show that higher education's career counseling services have a restricted range of services and poor quality and are ill-equipped to deal with the problems brought on by increasing access to higher education. This may be seen in Australia, Korea, the Philippines, and many other countries of the Organization for Economic Cooperation and Development, (OECD, 2016).

Given the circumstances, the researcher is interested in determining the career guidance services offered in school and the factors that influence the students' choice of course in college.

In today's competitive world, school-based career counseling remains the only means of connecting kids with appropriate opportunities based on personal characteristics, allowing them to discover and utilize their potential. As a result, students will be able to gain the information, skills, and awareness they need to progress their careers, (Herr, Cramer, & Niles, 2016).

One of the first things many students do when they enter college is choosing what they want to do with their degree and career. It is critical that children, their families, and schools aid pupils in making decisions and clarifying their objectives. Completing a vocational course, according to experts, is key interventions that can help youngsters make better decisions and transition to college (Brown, 2015). The current research adds to the growing body of evidence that an undergraduate career course can help students make better professional decisions, stay on track with their goals, and overcome negative career thinking.

Student's capacity to move through school, decision-making abilities and mental health are all improved by making academic career selections, (Hinkelman & Luzzo, 2017). Every student should learn how to make sound professional decisions and create appropriate objectives. Students must be prepared for the inevitable transitions they will confront throughout their life through career classes and other career interventions.

As a result of this, it is important that students have access to the information they need, comprehend it, and link it back to their own needs and situations. They may do this with the aid of professional counselors and by participating in school-based career advice programs.

It is the primary objective of career counseling and coaching to assist a person discovers and explores the apparently limitless possibilities available to him or her. A career counselor can help a student decide on a career path. Career counselors can help a person select an occupation that is compatible with his interests and aptitudes and help him prepare for that occupation. They can also help a person choose and prepare for a career that is compatible with his interests and aptitudes, are the three major service areas of guidance and counseling (Odeck, 2016).

These and other difficulties provide a tough scenario for school career counselors today (Zunker, 2017). School guidance and counseling is often entrusted to inexperienced individuals, even though most school counsellors are qualified professionals. Several researchers, including Ormord (2018) and Heward (2018), feel that guidance counsellors should be psychologically trained professionals who can provide a variety of practical services to parents, pupils, and teachers of all children. As a result, the school counsellor is an important element of the educational leadership team who aids students (Sari, 2015). A school counselor's role has typically been to give academic, vocational, and/or career counseling to students in a school counseling program, (American School Counsellors Association-ASCA, 2018).

The guidance counselors play a vital role in pushing for wide career goals that focus on the student's interests and abilities, allowing them to expand their employment possibilities in the near future. For the most part, kids aren't provided much information about careers and vocations on which to base their interests. On the other side, work experiences are crucial in the development of occupational interests, talents, and traits, (Isaacson & Brown, 2016). Counselors are tasked with providing information on a student's preferred hobbies as well as his or her job environment as well as the emotional and monetary benefits that come with it. When it comes to transition planning, such precise performance data may help students by specifying the sort of training, job experiences, effort and timing necessary to accomplish their career goals.

Counselors play a critical role in supporting children in coping with stress as they learn new skills. Individuals must also be given the capacity to act. It's also important to note that work choices are often

neglected in counseling (for example, a family's attitude towards a certain career). Krumboltz describes this as zeteophobia, or the fear of making decisions. Because of this, it is essential that counselors work together on solving these issues and providing appropriate support throughout the exploration process. Hence, career counselors need to expand their responsibilities.

In order to guide the conduct of career guidance at the school level and to ensure the development of skills and competencies required in the world of work, the Department of Education conducts career assessment to Grade 9 students through the National Career Assessment Examination (NCAE). The NCAE aims to provide guidance to individual learners for their future educational and career choices. It also provides the basis for profiling learners' aptitude in the four Senior High School tracks. There are three domains measured in the NCAE. These are the General Scholastic Aptitude (GSA), Occupational Interest Inventory (OII), and Aptitude for Senior High School Tracks. The GSA measures the learner's reading comprehension and scientific, verbal, mathematical, and logical reasoning ability. The OII is a checklist of occupational interests that provides an assessment of inclinations or preferences for comprehensive career guidance. The Aptitude for SHS Tracks determines the learner's inherent capacity to succeed in the SHS tracks, (Career Guidance Manual for Teachers).

Helping people make career decisions has been fundamental to counseling psychology since its emergence as a profession, and it continues to be central to its identity today (Gelso & Fretz, 2017, as cited in *Journal of Counseling Psychology*, 2018). After acquiring all the knowledge, skills, and attitude and being aware of their interests and possible career path, Grade 12 learners will now choose the curriculum exit they will pursue after senior high school. Grade 12 learners may choose to work immediately since they are of legal age and have the competencies to perform a specific job, or to pursue a business they can start to earn money. They may also proceed to higher education and pursue a degree course or take up any Technical Education and Skills Development Authority (TESDA) courses for middle-level skills development.

Career development theory suggests that differentiating learning in career guidance (career training, education, and counseling) so that it addresses professional issue solving in each domain might have an impact on how each domain functions. When developing successful career guidance services, it is important to include possible mediating factors such as family socioeconomic background. It also supports appropriate experiential learning throughout the exploration period, according to Super's career development theory (Krumboltz, 2019).

Based on the idea of work choice, professional decisions are split into five stages: growth, exploration, setting up a job, maintaining it, and disengaging from it. Super believes that an individual's ability to identify and implement their career self-concept, as well as their ability to display career maturity, determines a large part of their career development success.

One's career self-concept is said to be influenced by one's personality, talents, interests, experiences, and values (Zunker, 2017). Environmental variables such as career guidance interventions such as career training, career information, and career counseling can have an impact on professional maturity and self-concept. The term "occupational maturity" refers to a person's capacity to make age-appropriate job decisions and handle the responsibilities that come with each stage of their career (Skorikov, 2017).

A full, adequate, and integrated educational system in line with national development goals is the state's policy. To attain this purpose, the government must ensure that the educational system, within the context of a free and democratic system, contributes as much as possible to the achievement of the following national developmental goals. As a result, Batas Pambansa Blg. 232, often known as Section 9 of the Education Act of 1982 on Students' Rights in Schools, stresses such practices. It claims that students have the right to receive educational counseling and advice to make informed judgments and choose professional routes that are most suited to their skills.

Statement of the Problem

The major objective of this study was to assess the career guidance services offered and the factors that influence towards students' choice of course in college in the public senior high schools of Candijay, Alicia, Mabini, Anda and Guindulman (CAMAG), Bohol.

1. What is the profile of the student- respondents in terms of age; sex; and course?
2. What is the profile of the teacher- respondents in terms of age; sex; civil status; educational attainment; and number of years as Guidance Designate?

3. What is the perception of the students on career guidance services offered in school as to career development; students and career guidance participation; career information; career exploration; and career guidance assessment?
4. What is the perception of the respondents on the factors that influence students' choice of course as to decision making and interest; consideration about the institution; teacher factor; influence from parents and relatives; peer factor; and future job opportunities?
5. Is there a significant difference between perceptions of the respondents on the career guidance services offered in school?
6. Is there a significant difference between the perceptions of the respondents on the factors that influence the students' choice of course?

RESEARCH METHODOLOGY

Design

This study utilized the quantitative - descriptive research using a modified survey questionnaire about the career guidance services offered in school and the factors that influence the students' choice of course in college.

Environment and Participants

The research was conducted to fifteen (15) public high schools in Candijay, Alicia, Mabini, Anda and Guindulman (CAMAG) districts in the province of Bohol. Meanwhile, this research utilized random selection technique to gather more comprehensive and reliable data. There were a total number of two hundred ninety-five (295) respondents who were the subjects of the survey, comprising of forty-five (45) teachers or guidance counselor designate and two hundred fifty (250) grade twelve students in the previous year and now first Year College in BISU Candijay Campus.

Instruments

This study utilized a modified research tool from Grade 12 Career Guidance Manual for Teachers for the career guidance services offered in school and the factors that influence in students' choice of course in college to gather factual data and to obtain the accurate responses of the respondents. The questionnaire has four (4) parts namely: Part I is the questionnaire for demographic profile to determine the respondents' age, civil status, sex, highest educational attainment, and number of years as guidance counselor designate. Part II is the perception of the respondents to the career guidance services offered in school and Part IV is the perception of the respondents on factors that influence the students' choice of course in college.

RESULTS AND DISCUSSIONS

The profile of the student-respondents. As to age, out of the 250 students-respondents, 86 or 34.4% were 19 years old, 84 or 33.6% were in the age of 18 years old and 78 or 31.2% were 20 years old and above. Hence, there were only 2 or 0.8% were 17 years old.

As to sex, majority of the student-respondents were females with the frequency of 212 or 84.8% while minority, 38 or 15.2% of the student-respondents were males. This result indicates that there are more female freshmen students than male students enrolled at Bohol Island State University, Candijay Campus.

Furthermore, as to the course taken by the student-respondents, 61 or 24.4% were taking Bachelor of Science in Office Management being the top-ranked course taken by the respondents, 36 or 14.4% took up Bachelor in Hotel and Restaurant Services Technology, 33 or 13.2% were in Bachelor in Elementary Education course, 22 or 8.8% were enrolled in Bachelor in Secondary Education Major in English while there were only 15 or 6% took up Bachelor in Secondary Education Major in Physical Science and major in Biological Science respectively. The study of Caskey (2016) affirms this result that most of the freshmen students nowadays are taking up courses related to office system management and skilled courses like hotel and restaurant services

The Profile of the Teacher-Guidance Counselor-Respondents. As to their age, most of the respondents were under the age bracket of 31 – 40 years old with nineteen (19) or 42.22%, the lowest rank for this category was the 51 years old and above with four (4) or 8.89%.

With regards to the respondents' sex, majority of them were females with twenty five (25) or 55.56%, while there were twenty (20) male or 44.44%.

For the civil status, majority were Married with thirty one (31) or 68.89%, while fourteen (14) or 31.11% of them were single.

In terms of educational attainment, the highest frequency was With Master's Degree Units with eighteen (18) or 40%, while only one (1) 2.22% had Doctoral Degree Holder as the lowest frequency.

Moreover, as to the number of years as guidance designate, majority of them had 1 – 5 years with thirty one (31) or 68.89%, while the lowest rank was the 11 – 15 years with two (2) or 4.44%.

It is reflected in table 3 the respondents' perception on the career guidance services offered in school as to career development, career information, career exploration and career guidance assessment. As to career development, as reflected in item number 5 "career guidance services allow students to think about themselves and the talents they'd like to improve in college" got the highest weighted mean of 4.0 as perceived by the teachers, weighted mean of 3.0 as perceived by the students and the overall weighted mean of 3.5 interpreted as "Strongly Agree". Further, career development services encourage students to pick a course that matches their talents and interests as perceived agreeably by both the teachers and students having the overall weighted mean of 2.5. Meanwhile, item numbers 2, 3 and 4 got the lowest weighted mean of 3.0 which state that career guidance services provide career pathing programs and activities, mentor the students about proteges victories and give students the technical assistance in selecting the appropriate college course all earned the descriptive interpretation of "Agree".

Table 1 further shows the career guidance services offered in school particularly in students and career guidance participation which is stipulated in item number 3 "organize a meeting with parents during the schools' career guidance day" having the highest weighted mean of 4.0 as perceived by the teachers, weighted mean of 3.40 as perceived by the students and the overall weighted mean of 3.7 which is strongly agreeable to both respondents.

In addition, career guidance participation of students presents clear image of the college course they'll be taking as perceived by both the teachers and students with the overall weighted mean of 3.69 having the descriptive interpretation of "Strongly Agree".

Meanwhile, item number 2 "coordinate with DOLE and municipal PESO offices/agencies in the provision of career guidance activities" got the lowest weighted mean of 3.0 as perceived by the teachers, weighted mean of 3.06 as perceived by the students and the overall weighted mean of 3.03 still agreed to have been offered by the school. This result is in line with the Memorandum of Agreement between the Department of Labor and Employment through the Municipal PESO and secondary school institutions offering senior high school as to providing career guidance services to graduating students in high school.

On the other hand, item number 1 "improve pupils potential through appropriate classroom activities" which gained the highest weighted mean of 4.0 as perceived by the teachers, weighted mean of 3.50 as perceived by the students and the overall weighted mean of 3.37 strongly agreed by the respondents to have been included in the career guidance services. While item number 2 "collaborate with the schools counseling office personnel" got the lowest weighted mean of 3.0 as perceived by the teachers, weighted mean of 3.18 as perceived by the students and the overall weighted mean of 3.09.

The data further revealed the career exploration services wherein item number 4, "improve the attitude of students about career opportunities, motivating them to aspire to their dream careers" gained the highest weighted mean of 3.64 as perceived by the teachers, weighted mean of 3.64 as perceived by the students and the overall weighted mean of 3.64 interpreted as "strongly agree" by the respondents. However, career guidance services as stated in item number 2 "give students broader exposure to the working world" got the lowest weighted mean of 3.47 as perceived by the teachers, weighted mean of 3.20 as perceived by the students and the overall weighted mean of 3.33 still strongly agreed by the respondents to have been experienced by students in their career exploration.

Table 1. Respondents' Perception of the on Career Guidance Services Offered in School
N1 = 45 ; N2 = 250

Statement	Teachers			Students			Overall		
	WM	DI	Rank	WM	DI	Rank	WM	DI	Rank
<i>As a teacher, I...</i>									
3.1. Career Development									
encourage students to pick a course that matches their talents and interests.	3.00	A	4	2.00	D	1	2.50	A	2
provide career-pathing programs and activities	3.00	A	4	3.00	A	2	3.00	A	4
mentor the students about proteges' victories, advise them on their failures, and inspire them to continue marching forward with their dreams	3.00	A	4	3.00	A	5	3.00	A	4
give students with technical assistance in selecting the appropriate college course	4.00	SA	1.5	2.00	D	3	3.00	A	4
allow students to think about themselves and the talents they'd like to improve in college	4.00	SA	1.5	3.00	A	4	3.50	SA	1
Average Weighted Mean	3.40	SA		2.60	A		3.00	A	
3.2. Students and Career Guidance Participation									
present a clear image of the college course they'll be taking	4.00	SA	1.5	3.38	SA	2	3.69	SA	2
coordinate with DOLE and municipal PESO offices/agencies in the provision of career guidance activities	3.00	A	4	3.06	A	5	3.03	A	5
organize a meeting with parents during the school's career guidance day.	4.00	SA	1.5	3.40	SA	1	3.70	SA	1
establish school-based career guidance initiatives	3.00	A	4	3.23	A	5	3.11	A	4
initiate career guidance activities participated by all the parents, senior and junior high school students in school	3.00	A	4	3.30	SA	3	3.15	A	3
Average Weighted Mean	3.40	SA		3.27	SA		3.34	SA	
3.3. Career Information									
improve pupils' potential through appropriate classroom activities	4.00	SA	1	3.50	SA	1	3.37	SA	1
collaborate with the school's counselling office personnel	3.00	A	3.5	3.18	A	5	3.09	A	5
introduce students to career options is to determine what they like in the first place.	3.00	A	3.5	3.36	SA	4	3.18	A	4
invite reliable speakers that will give students valuable insight into a career	3.00	A	3.5	3.40	SA	3	3.20	A	3
provide students with information for them to make educated judgments about their future vocations and training.	3.00	A	3.5	3.47	SA	2	3.23	A	2
Average Weighted Mean	3.20	A		3.38	SA		3.21	A	
3.4. Career Exploration									
engage students in work-related activities through performance tasks in class	3.69	SA	1	3.44	SA	3	3.56	SA	3
give students broader exposure to the working world	3.47	SA	5	3.20	A	4	3.33	SA	5
increase the likelihood they will complete high school and pursue post-secondary education	3.60	SA	4	3.44	SA	3	3.52	SA	4
improve the attitude of students about career opportunities, motivating them to aspire to their dream careers	3.64	SA	2	3.64	SA	1	3.64	SA	1
enable them to set realistic goals for themselves, knowing the preparation they will need for specific careers	3.62	SA	3	3.55	SA	2	3.58	SA	2
Average Weighted Mean	3.60	SA		3.45	SA		3.53	SA	
3.5 Career Guidance Assessment									
evaluate students through written examinations to obtain the appropriate course of study.	3.00	A	1	3.31	SA	4	3.15	A	4
refer to students the courses that are relevant to their interests.	3.00	A	1	3.38	SA	2	3.19	A	2
start conducting mock interviews with pupils by the end of school year	3.00	A	1	2.99	A	5	2.99	A	5
allow students to have the immersion activities	3.00	A	1	3.37	SA	3	3.18	A	3
administer aptitude surveys to let them discover the skills they want to (or should) learn for the future	3.00	A	1	3.42	SA	1	3.21	A	1
Average Weighted Mean	3.00	A		3.29	SA		3.14	A	
Composite Mean	3.32	Strongly Agree		3.20	Agree		3.26	Strongly Agree	

Legend: Rating Scale
3.25 – 4.00
2.50 – 3.24

Descriptive Interpretation
Strongly Agree (SA)
Agree (A)

Descriptive Interpretation
1.75 – 2.49
1.00 – 1.74

Disagree (D)
Strongly Disagree (SD)

Weighted Mean(WM)

In career guidance assessment, item number 5 "administer aptitude surveys to let them discover the skills they want to (or should) learn for the future" had the highest weighted mean of 3.0 as perceived by the teachers, weighted mean of 3.42 as perceived by the students and the overall weighted mean of 3.21. While item number 3 "start conducting mock interviews with pupils by the end of the school year" gained the lowest weighted mean of 3.0 as perceived by the teachers, weighted mean of 2.99 as perceived by the students and the overall weighted mean of 2.99. The result implies that aptitude assessment is very essential for students before coming up with the decision on the course to take in college. This is in connection to Department of Education's National Career Assessment Examination (NCAE) to guide the conduct of career guidance at the school level and to ensure the development of skills and competencies required in the world of work. Thus, Career Guidance and Counseling Instructional Module helps the secondary students in their quest of meaningful and satisfying tertiary education depending on their capacity and abilities, as well as their access to higher education and their ability to access to higher education.

To put the above results in general, career guidance services offered in school have been perceived to be strongly agreed as implemented having the overall weighted mean of 3.26. The theory of career development strongly supports these results that differentiating learning in career guidance (career training, education, and counseling) so that it addresses professional issue solving in each domain might have an impact on how each domain functions. When developing successful career guidance services, it is important to include possible mediating factors such as family socioeconomic background. It also supports appropriate experiential learning throughout the exploration period. An individual's ability to identify and implement his/her career self-concept, as well as their ability to display career maturity, determines a large part of their career development success.

Table 2.1 represents the respondent's perception on the factors that influence students' choice of course as to decision making and interest. As to the teachers' perception, the highest weighted mean were the items 3 "pick a course based on how they feel about it", 6 "expect their potential in the employment market and 7 "center their decisions on their interests" with 4.00 or described as Strongly Agree. The lowest weighted of 3.00 were items 1 "think about what they want to do and their plans in taking college", 2 "look at their abilities, such as their knowledge and skills", 4 "choose based on personal interests, such as family history", 5 "refer to things that they enjoy the most", 8 "consider their love for the course or career they want to pursue", 9 "put faith in their skills", and 10 "rely on the results of self-testing" which described as Agree. The overall weighted mean was 3.30 which is labelled as Strongly Agree. Meanwhile, for the students' perception, item number 9 "put faith in their skills" got the highest weighted mean of 3.68 or Strongly Agree, while the lowest weighted mean was item 4 "choose based on personal interests, such as family history" with 3.10 or Agree. The overall weighted mean was 3.40 or described as Strongly Agree.

For the overall, the statement number 3 "pick a course based on how they feel about it" obtained the highest weighted mean of 3.70 or Strongly Agree, while the lowest weighted mean was item 4 "choose based on personal interests, such as family history" with 3.05 or Agree. This means that the decision making and interest of the students depends how they believed and feel good for them.

Table 2.1 Respondent's Perception on the Factors that Influence Students' Choice of Course as to Decision Making and Interest
N1 = 45 ; N2 = 250

Statement	Teachers			Students			Overall		
	WM	DI	Rank	WM	DI	Rank	WM	DI	Rank
<i>The students/ As a student, I.....</i>									
think about what they want to do and their plans in taking college	3.00	A	7	3.63	SA	2	3.31	SA	5
look at their abilities, such as their knowledge and skills.	3.00	A	7	3.60	SA	3	3.30	SA	6
pick a course based on how they feel about it.	4.00	SA	2	3.40	SA	6	3.70	SA	1
choose based on personal interests, such as family history	3.00	A	7	3.10	A	10	3.05	A	10
refer to things that they enjoy the most	3.00	A	7	3.46	SA	5	3.23	A	8
expect their potential in the employment market.	4.00	SA	2	3.25	SA	8	3.62	SA	2
center their decisions on their interests	4.00	SA	2	3.11	A	9	3.55	SA	3
consider their love for the course or career they want to pursue.	3.00	A	7	3.56	SA	4	3.28	SA	7
put faith in their skills	3.00	A	7	3.68	SA	1	3.34	SA	4
rely on the results of self-testing	3.00	A	7	3.28	SA	7	3.14	A	9
Overall Weighted Mean	3.30	Strongly Agree		3.40	Strongly Agree		3.35	Strongly Agree	

Legend:	
Rating Scale	Descriptive Interpretation
3.25 – 4.00	Strongly Agree (SA)
2.50 – 3.24	Agree (A)
1.75 – 2.49	Disagree (D)
1.00 – 1.74	Strongly Disagree (SD)

Table 2.2 displays the Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Consideration about the Institution. As to the teachers’ assessment, the statement number 6 “think about the university's location” got the highest weighted mean of 4.00 or Strongly Agree. For the lowest weighted mean were item numbers 1 “consider the distance between your house and school and your home”, 2 “believe their acquaintances' stories about the school”, 3 “learn about university tuition that is inexpensive”, 4 “look forward to completing the work requirements following your studies, graduation, or completion”, 5 “look for a college or university with a reasonable tuition fee”, 7 “consider the amenities, facilities and physical set-up of the school”, 8 “follow on the parents' choice of school”, 9 “consider positive feedback about the school from peers and other students”, and 10 “rely on a scholarship grants” with 3.00 or Agree. The average weighted mean for this category was 3.10 described as Agree.

Table 2.2 Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Consideration about the Institution
N1 = 45 ; N2 = 250

Statement	Teachers			Students			Overall		
	WM	DI	Rank	WM	DI	Rank	WM	DI	Rank
<i>The students/ As a student, I.....</i>									
consider the distance between your house and school and your home	3.00	A	6	3.33	SA	8	3.16	A	8
believe their acquaintances' stories about the school	3.00	A	6	3.26	SA	9	3.13	A	9
learn about university tuition that is inexpensive.	3.00	A	6	3.35	SA	4.5	3.17	A	5.5
look forward to completing the work requirements following your studies, graduation, or completion	3.00	A	6	3.60	SA	1	3.30	SA	2
look for a college or university with a reasonable tuition fee.	3.00	A	6	3.34	SA	6.5	3.17	A	5.5
think about the university's location	4.00	SA	1	3.39	SA	2	3.69	SA	1
consider the amenities, facilities and physical set-up of the school	3.00	A	6	3.35	SA	4.5	3.17	A	5.5
follow on the parents' choice of school	3.00	A	6	3.03	A	10	3.01	A	10
consider positive feedback about the school from peers and other students	3.00	A	6	3.38	SA	3	3.19	A	3
rely on a scholarship grants	3.00	A	6	3.34	SA	6.5	3.17	A	5.5
Average Weighted Mean	3.10		Agree	3.33		Strongly Agree	3.21		Agree

Legend:	
Rating Scale	Descriptive Interpretation
3.25 – 4.00	Strongly Agree (SA)
2.50 – 3.24	Agree (A)
1.75 – 2.49	Disagree (D)
1.00 – 1.74	Strongly Disagree (SD)

As for the students, statement 4 “look forward to completing the work requirements following your studies, graduation, or completion” obtained the highest weighted mean of 3.60 or Strongly Agree, while the lowest weighted mean was item 8 “follow on the parents' choice of school” with 3.03 or Agree. The average weighted mean was 3.33 or Strongly Agree.

On the overall, item number 6 “think about the university's location” gained the highest weighted mean of 3.69 or Strongly Agree, while the lowest was item number 8 “follow on the parents' choice of school” with 3.01 or Agree. The average weighted mean of 3.21 and described as Agree. The results connote that the students consider on the location and accessibility of the school where they could build their future career and job opportunity. Further, it has been considered the last thing to consider by the respondents in choosing their preferred course and school, their parents' choice for them would be the least they follow

Table 2.3 illustrates the Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Teacher Factor. For the teachers’ perception, they concurred that the item numbers 3 “initiate one on one/personal talk with the students in the decision-making of course preference”, 4 “provide examples and inputs as to the pros and cons of courses to be taken in college”, 5 “provide use-

ful learning experience to students in class activities related to career guidance” as the highest weighted mean with 4.00 or Strongly Agree, while the lowest weighted mean were item numbers 1 “enhance the observed skills and abilities of students as to course selection in college”, and 2 “provide classroom-based career guidance activities” with 3.00 or Agree.

As for the students, item 1 “enhance the observed skills and abilities of students as to course selection in college” has the highest weighted mean of 3.49 or Strongly Agree, while the lowest was item 2 “provide classroom-based career guidance activities” with 3.03 or Agree.

On the overall, the highest weighted mean was 4 “provide examples and inputs as to the pros and cons of courses to be taken in college” with 3.64 or Strongly Agree, while the lowest in rank was item 2 “provide classroom-based career guidance activities” with a weighted mean of 3.17 or Agree.

Table 2.3 Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Teacher Factor
N1 = 45 ; N2 = 250

Statement	Teachers			Students			Overall		
	WM	DI	Rank	WM	DI	Rank	WM	DI	Rank
<i>The students/ As a student, I.....</i>									
enhance the observed skills and abilities of students as to course selection in college	3.00	A	4.5	3.49	SA	1	3.24	A	4
provide classroom-based career guidance activities	3.00	A	4.5	3.34	SA	3	3.17	A	5
initiate one on one/personal talk with the students in the decision-making of course preference	4.00	SA	2	3.03	A	5	3.51	SA	2
provide examples and inputs as to the pros and cons of courses to be taken in college	4.00	SA	2	3.28	SA	4	3.64	SA	1
provide useful learning experience to students in class activities related to career guidance	4.00	SA	2	3.35	SA	2	3.36	SA	3
Average Weighted Mean	3.60	Strongly Agree		3.29	Strongly Agree		3.44	Strongly Agree	

Legend:
Rating Scale **Descriptive Interpretation**
 3.25 – 4.00 Strongly Agree (SA)
 2.50 – 3.24 Agree (A)
 1.75 – 2.49 Disagree (D)
 1.00 – 1.74 Strongly Disagree (SD)

To sum up the results, teacher factor undeniably influences the students' choice of course in college as attested in the weighted mean of 3.44 as perceived by both the teachers and students with the descriptive interpretation of "Strongly Agree".

Table 4.4 shows the Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Influence from Parents and Relatives. The teachers perceived that items 1 “decide for the students on the courses to take which are less expensive”, 2 “prefer on courses which are dominant or common in the family”, 3 “give advice on course preference based on the parents' experience”, 4 “decide on courses where the students are good at in certain fields like in Math, English or skill-based”, and 5 “base the decision of course preference as to the financial capacity of the family” has the highest rank with a weighted mean of 3.00 or Agree.

Table 2.4 Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Influence from Parents and Relatives
N1 = 45; N2 = 250

Statement	Teachers			Students			Overall		
	WM	DI	Rank	WM	DI	Rank	WM	DI	Rank
<i>The students/ As a student, I.....</i>									
decide for the students on the courses to take which are less expensive	3.00	A	1	2.88	A	4	2.94	A	4
prefer on courses which are dominant or common in the family	3.00	A	1	2.67	A	5	2.83	A	5
give advice on course preference based on the parents' experience	3.00	A	1	3.07	A	2	3.03	A	2
decide on courses where the students are good at in certain fields like in Math, English or skill-based	3.00	A	1	3.02	A	3	3.01	A	3
base the decision of course preference as to the financial capacity of the family	3.00	A	1	3.24	A	1	3.12	A	1
Average Weighted Mean	3.00	Agree		2.85	Agree		2.92	Agree	

Legend:
Rating Scale **Descriptive Interpretation**
 3.25 – 4.00 Strongly Agree (SA)
 2.50 – 3.24 Agree (A)
 1.75 – 2.49 Disagree (D)
 1.00 – 1.74 Strongly Disagree (SD)

As for the students, item 5 “base the decision of course preference as to the financial capacity of the family” got the highest rank with a weighted mean of 3.24 or Agree, while the lowest rank was item 2 “prefer on courses which are dominant or common in the family” with a weighted mean of 2.67 or Agree. The average weighted mean was 2.85 or Agree.

On the overall, item 5 “base the decision of course preference as to the financial capacity of the family” got the highest rank with a weighted mean of 3.12 or Agree, while the lowest rank was item 2 “prefer on courses which are dominant or common in the family” with a weighted mean of 2.83 or Agree.

Table 2.5 portrays the Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Peer Factor. Both teacher and student- respondents concurred that item number 2 “encourage them to do things to achieve their goals” was the highest rank with a weighted mean of 3.00 or Agree and 3.58 or Strongly Agree respectively. As to the lowest rank, the item number 5 “prefer to my peer group in selecting a course” with a weighted mean of 3.01 or Agree.

Table 2.5 Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Peer Factor
N1 = 45 ; N2 = 250

Statement	Teacher			Students			Overall		
	WM	DI	Rank	WM	DI	Rank	WM	DI	Rank
<i>The students/ As a student, I.....</i>									
1. inspire them to choose what they like to take	3.00	A	1	3.12	A	4	3.06	A	4
2. encourage them to do things to achieve their goals	3.00	A	1	3.58	SA	1	3.29	SA	1
3. advice to learn more about what they like to choose to do	3.00	A	1	3.48	SA	2	3.24	A	2
4. informal talk leads them of what they should plan to choose	3.00	A	1	3.17	A	3	3.08	A	3
5. prefer to my peer group in selecting a course	3.00	A	1	3.01	A	5	3.01	A	5
Average Weighted Mean	3.00	Agree		3.27	Strongly Agree		3.13	Agree	

Legend:
Rating Scale **Descriptive Interpretation**
 3.25 – 4.00 Strongly Agree (SA)
 2.50 – 3.24 Agree (A)
 1.75 – 2.49 Disagree (D)
 1.00 – 1.74 Strongly Disagree (SD)

On the overall, item number 2 “encourage them to do things to achieve their goals” was the highest rank with a weighted mean of 3.29 or Strongly Agree, while the lowest weighted mean of 3.01 was item number 5 “prefer to my peer group in selecting a course”. It denotes that their peer motivates the respondents to work hard in order to be successful. Thus, they often choose the course which most of their friends are into.

Table 2.6 displays the Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Future Job Opportunities. The teachers perceived that items 2 “expect for the good salary”, 3 “prefer for the stability status for the job”, 4 “favor the tenure of the job”, and 5 “expect the availability of the job that suits them” got the highest weighted mean of 4.00 or Strongly Agree, while the lowest weighted mean of 3.00 was item 1 “find the course the students choose convenient in looking for a job in the future” which describe as Agree.

As for the students, the highest rank was item 1 “find the course the students choose convenient in looking for a job in the future” with 3.62 weighted mean or Strongly Agree, while the lowest was item 4 “favor the tenure of the job” with a weighted mean of 3.32 or Strongly Agree.

Table 2.6 Respondent’s Perception on the Factors that Influence Students’ Choice of Course as to Future Job Opportunities
N1 = 45 ; N2 = 250

Statement	Teachers			Students			Overall		
	WM	DI	Rank	WM	DI	Rank	WM	DI	Rank
<i>The students/ As a student, I.....</i>									
find the course the students choose convenient in looking for a job in the future	3.00	A	5	3.62	SA	1	3.31	SA	5
expect for the good salary	4.00	SA	2.5	3.53	SA	3	3.76	SA	2
prefer for the stability status for the job	4.00	SA	2.5	3.59	SA	2	3.79	SA	1
favor the tenure of the job	4.00	SA	2.5	3.32	SA	5	3.66	SA	4
expect the availability of the job that suits them	4.00	SA	2.5	3.51	SA	4	3.75	SA	3
Average Weighted Mean	3.80	Strongly Agree		3.51	Strongly Agree		3.65	Strongly Agree	

Legend: Rating Scale	Descriptive Interpretation
3.25 – 4.00	Strongly Agree (SA)
2.50 – 3.24	Agree (A)
1.75 – 2.49	Disagree (D)
1.00 – 1.74	Strongly Disagree (SD)

On the overall, the highest rank was item 3 “prefer for the stability status for the job” with a weighted mean of 3.79 or Strongly Agree, while the lowest was item 1, “find the course the students choose convenient in looking for a job in the future” with a weighted mean of 3.31 or Strongly Agree. This entails that the respondents are considering a course to take that could book for a permanent and stable job in the future.

**Table 3 Test of Difference Between Perception of the Respondents on the Career Guidance Services Offered in School
N1 = 45; N2 = 250**

Career Guidance Services Offered	Z	p-value	Interpretation	Decision
Career Development	-0.218	0.828	Not Significant	Do Not Reject H ₀
Career Guidance Participation	-3.391	0.001	Significant	Reject H ₀
Career Information	-2.083	0.037	Significant	Reject H ₀
Career Exploration	-2.436	0.015	Significant	Reject H ₀
Career Guidance Assessment	-5.341	<.001	Significant	Reject H ₀

**Correlation is significant at 0.05 (2-tailed)*

Table 3 shows the test of difference between the perception of the respondents on the career guidance services offered in school as to career development, career guidance participation, career information, career exploration and career guidance assessment. The result revealed that there is sufficient evidence of a significant difference between the perception of the teachers and the students on the career guidance services offered in the school as to career guidance participation, $Z = -3.391$, $p = 0.001$, career information, $Z = -2.083$, $p = 0.037$, career exploration, $Z = -2.436$, $p = 0.015$, and career guidance assessment, $Z = -5.341$, $p < .001$, thus the null hypothesis is rejected. This implies that the above-mentioned career guidance services differ substantially as to its influence on students in their choice of course in college. Thus, in reality, the school offers several programs to cater the need of the students’ educational advancement.

However, there is no significant difference between the perception of the teachers and the students on the career guidance services offered in the school as to career development, $Z = -0.218$, $p = 0.828$, thus failed to reject the null hypothesis. This denotes that both respondents perceived similarly that career development services were implemented and generally experienced. By that it can be assessed that schools having career guidance services to students follow and employ the given activities as to career development. School guidance counsellors coordinate with local government agencies to promote right career pathing among students. The departments like DOLE, TESDA and PESO are among the national agencies which directly coordinate with educational institutions as to the provision of career development services in secondary and higher education institutions.

School-based career counseling remains the only means of connecting kids with appropriate opportunities based on personal characteristics, allowing them to discover and utilize their potential. As a result, students will be able to gain the information, skills, and awareness they need to progress their careers, (Herr, Cramer, & Niles, 2016).

**Table 4 Test of Difference Between Perception of the Respondents on the Factors that Influence Students Choice of Course
N1 = 45; N2 = 250**

Perceived Factors that Influence Students’ Choice of Course	Z	p-value	Interpretation	Decision
Decision Making and Interest	-2.064	0.039	Significant	Reject H ₀
Consideration About the Institution	-3.578	<.001	Significant	Reject H ₀
Influence from Teachers	- 4.557	<.001	Significant	Reject H ₀
Influence from Parents and Relatives	- 0.219	0.826	Not Significant	Do Not Reject H ₀
Peer Influence	-3.870	<.001	Significant	Reject H ₀
Future Job Opportunities	-1.958	0.051	Not Significant	Do Not Reject H ₀

**Difference is significant at 0.05 (2-tailed)*

Table 4 discloses the test of difference between the perception of the respondents on the factors that influence the students' choice of course as to decision making and interest, consideration about the institution, influence from teachers, influence from parents and relatives, and peer influence. The result deduced that there is a sufficient evidence of a significant difference between the perception of the teachers and the students on the factors that influence the students' choice of course as to decision making and interest, $Z = -2.064$, $p = 0.039$, consideration about the institution, $Z = -3.578$, $p < .001$, influence from teachers, $Z = -4.557$, $p < .001$, and peer influence, $Z = -3.870$, $p < .001$, thus the null hypothesis is rejected. This infers that these factors perceived to be clearly different as to its impact to students. Thus, the factors have no effect on the respondents' choice of course.

However, there is no significant difference between the perception of the teachers and the students on the factors that influence the students' choice of course as to influence from parents and relatives, $Z = -0.219$, $p = 0.826$, and the future job opportunities, $Z = -1.958$, $p = 0.051$, thus failed to reject the null hypothesis. This means that the respondents agreed that parents/ relatives have a significant impact as to decision of vocational choice and how to achieve work chances in the future. Thus, the students find parents and relatives and future job security equally.

CONCLUSIONS

Based on findings of the study, the researcher concluded that the career guidance services offered by the school significantly affect the students' choice of course. Career development, career exploration, career information and career guidance assessment clearly denote the valuable career guidance services that students avail in schools in order for them to prepare for right and appropriate choice of course to enroll in college. Furthermore, the factors such as decision making and interest, consideration about the institution, influence of teachers and peer influence were highly considered by the students as to arriving with the best choice of course to take up in college.

REFERENCES

- American School Counsellors Association (2018). *The ASCA national model: A framework for school counselling programme*, Alexandria VA: Auther.
- Baker, S. (2015). *School counseling for the 21st century (3rd ed.)*. Upper Saddle River, NJ: Prentice Hall.
- Brown, S. D (2018). *Critical ingredients of career choice interventions: More analyses and new hypotheses*. Journal of Vocational Behavior, 62, 411–428. doi:10.1016/S0001-8791(02)00052-0
- Brown, P. (2015). *Career intervention efficacy: Making a difference in people's lives*. I P. J. Hartung, M. L. Savickas, & W. B. Walsh (Eds.), APA handbook of career intervention: Foundations (Volume 1, pp. 61–77). Washington, DC: American Psychological Association
- Brown, S. D.(2018). *A social cognitive framework for career choice counseling*. The Career Development Quarterly, 44, 354-366
- Collins, G. R.(2017). *Christian counselling (3rd ed.)*. USA: Zendevarn Publishing House.
- Creswell, J. W. (2018). *Educational research: planning, conducting and evaluating Quantitative and Qualitative Research (3rd. ed.)*. New Jersey: Pearson Education.
- Dabula, P. & Makura, A. H. (2018). *High school students' perceptions of career guidance and development programmes for university access*. International Journal of Education and Science, 5(2), 89-97.
- Dano (2021). *Parents can't afford school fees as a result of the pandemic*. <https://www.iol.co.za/education/schools/parents-cant-afford-school-fees-as-a-result-of-the-pandemic-d470eda8-ae2b-474c-a5aa-368b3e8230da>
- Gelso, L. & Fretz, M. (2017). *Counseling psychology's focus on positive aspects of human functioning*
- Herr, E. L., & Cramer, S. H. (2016). *Career guidance and counseling through the lifespan: Systematic approaches*. New York, NY: HarperCollins.
- Heward, W. L. (2018). *Exceptional children: An introduction to special education*. Upper Saddle River, N J: Merrill/Prentice-Hall.
- Hinkelman, J. M., & Luzzo, D. A. (2017). *Mental health and career development of college students*. Journal of Counseling and Development, 85, 143–147.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments (3rd ed.)*. Odessa, FL: Psychological Assessment Resources.
- Hutchinson, R. L.; Bottorff, R. L. (2016). *Selected high school counseling services: Student assessment*. School

- Counselor*, 33 ,5 p350-54. Idreamcareer. (2020). *Importance of Career Guidance*. <https://idreamcareer.com/blog/college-and-career-guidance/>
- Isaacson, L. E., & Brown, D. (2016). *Career information, career counselling, and career development*. U.S: Allyn and Bacon.
- Jarvis, P., & Keeley, E. S. (2018). *From vocational decision making to career building: blueprint, real games, and school counselling*. *Professional School Counseling*, 6, 244e251.
- Krumboltz, J.D., Mitchell, A.M. & Jones, G.B. (1976) *A Social learning theory of career selection*. *The Counseling Psychologist*, 6, 1, 71-81.
- Llego, M. (2017). *Conduct of Senior High School Career Guidance Program and Early Registration for School Year 2016-2017*
- Niles, S.G., & Bowsbey, J. H. (2017). *Career development interventions in the 21st century*. New Jersey: Merrill Prentice Hall
- Odeck, A. (2016). *The Guidance and counselling role of the teacher in higher education*. Module 8. Retrieved, June 10, 2018 from <http://www.harare.unesco.org/heresource/WORD/New-8.doc>.
- OECD (2016). *Effects of classroom guidance on student achievement*. *Elementary School Guidance and Counseling*, 27, 163-171.
- Ormord, J. E. (2018). *Educational psychology: developing learners*. 4th ed. Upper Saddle River, N. J: Merrill Prentice Hall. *British Journal of Arts and Social Sciences* ISSN: 2046-9578 61.
- Pascual, N. (2019). *Factors affecting high school students' career preference: a basis for career planning program*. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*. <http://www.urs.edu.ph/wp-content/uploads/2016/06/2261-4881-1-PB.pdf>
- Rashid, A. M., Bakar, A. R., Asimiran, S., Tieng, L. P. (2019). *Career development interventions in secondary schools in the State of Terengganu, Malaysia* *European Journal of Social Sciences – Volume 8, Number 1 (62)*
- Rosenbaum, J. E., & Person, A. E. (2018). *Beyond college for all: policies and practices to improved transitions into college and jobs*. *Professional School Counseling*, 64, 252-260.
- Rosemary, T. (2017). *Best practice for working in the school* (2nd ed.). Routledge.
- Sari, E. (2015). *School counsellors education with observation in schools. procedia social and behavioural science* 2(2010)3899-3903, Elsevier Publications Ltd.
- Skorikov, D. E. (2017). *A life- span, life-space approach to career development*. In D. Brown, L. Brooks & Associates (Eds.), *Career choice and development: Applying contemporary theories to practice* (2nd ed.). San Francisco, CA: Jossey-Bas

PROFESSIONAL DEVELOPMENT, CAREER PROGRESSION, AND PERFORMANCE OF MASTER OF ARTS IN EDUCATION (MAED) GRADUATES OF BOHOL ISLAND STATE UNIVERSITY

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ABSTRACT

Education is a never-ending process. It doesn't stop after earning a degree and starting a career. Through continuing education, career-minded individuals can constantly improve their skills and become more proficient at their jobs (Girvan, 2016). The purpose of this study was to assess the level of professional development, career progression, and performance of the graduates of the Master of Arts in Education of Bohol Island State University, Candijay Campus who are employed in the public schools in the province of Bohol. The study was conducted in Candijay, Alicia, Mabini, Anda, Guindulman, Duero, Jagna, PCPG, and Ubay, Bohol, Philippines particularly to the one hundred eighty (180) respondents who were the Master of Arts in Education graduates of BISU Candijay Campus for the last three years. This study utilized the descriptive-survey design employing the simple random sampling technique with the use of a modified research tool from the OECD Teaching and Learning International Survey (TALIS) (2017) for the Level of Teachers' Professional Development and Debara (2021) for the Teachers' Career Progression and Performance. The results show that there is a significant relationship between the performance of MAED graduates and their highest educational attainment and length of service. However, there is no significant association between the performance of graduates and their profile in terms of age, sex, and civil status. Further, there is sufficient evidence that there is a significant relationship between the performance and professional development of MAED graduates. There is also a significant relationship between the performance and professional development of MAED graduates. This study concludes that MAED Graduates' professional development relatively affects their performance and career progression. Teachers' professional development can be further facilitated through fully apprehending the process by which they grow professionally and the factors that contribute to such growth, teachers' career progression, and commitment to the job and workplace. The impact of professional development on their teaching abilities, knowledge, and career progression is pivotal to gaining a comprehensive understanding of the existent as well as the potential obstacles teachers might face.

Keywords: Education, Professional Development, Career Progression, Performance

INTRODUCTION

Education is a never-ending process. It doesn't stop after earning a degree and starting a career. Through continuing education, career-minded individuals can constantly improve their skills and become more proficient at their jobs. In the field of K-12 education administration, school administrators need to encourage teachers to pursue professional development, not only to ensure the best learning outcomes for their students but also to be more effective and satisfied in various other aspects of their work.

Implementing professional education development has benefits for both teachers and students, but most importantly, it helps teachers become better educators and develop into competent future school administrators. No matter how good pre-service training for teachers is, it cannot be expected to prepare teachers for all the challenges they will face throughout their careers. Education systems, therefore, seek

to provide teachers with opportunities for in-service professional development to maintain a high standard of teaching and to retain a high-quality teacher workforce, (OECD, 2019).

The quality of education and student achievement is closely related to teacher qualifications. In Turkey, teachers want a career system so that their efforts regarding graduate education and their professional development motivation could be supported (Can, 2019). It has been reiterated that professional development, career progression, and performance of teachers are interlinked. Thus, exploring teachers' insights into the impact of professional development on their teaching abilities, knowledge, and career progression are pivotal to gaining a comprehensive understanding of the existent as well as the potential obstacles teachers might face (Tantawy, 2020).

The demands of teaching are constantly changing, and teachers need to continually adapt their knowledge and practice. The educational system in the Philippines keeps transforming from one era to another era and educators must keep abreast to continually providing quality education to students (Oxford Business Group, 2017). Teachers have always been at the core of education and their career development has always been the primary issue of the education system. It is important to note that to make difference in students' achievement, teachers should constantly develop their field knowledge and teaching skills. For that reason, career development is an important part of the teaching profession.

Mizell (2018) defined professional development as any educational experience related to a practitioner's work. Individuals in a wide range of professions take part in professional development to learn and apply new skills and knowledge that would enhance their professional performance. In the educational field, research has shown that school leadership and teaching quality are the main contributing factors in boosting student achievement. School leaders continually strive to bring about and implement the best educational practices and professionals.

The concept of professional development which can be defined as knowledge, skills, ability, and conditions for learning about the profession has been the most important factor in recent years. The role of the teaching profession in the development of a country is known by all societies so there are various regulations regarding this. Research in the field of the development of the teaching profession shows that professional development is a necessity to raise the quality of education in schools. Therefore, opportunities should be provided for teachers to improve the quality of education (Seferoğlu, 2015).

Therefore, the extent to which teaching career paths offer continued progression and opportunities to contribute to the quality of education is essential for recruiting and retaining highly qualified and motivated teachers. Besides, teachers usually seek enhanced career paths to promote new learning and maintain motivation about their teaching; without such opportunities, teachers who pursue professional advancement are forced to move into educational management roles. The relationship between professional development and career progression was further supported by Coldwell's study findings (2017) where the respondents associated professional development with promotion.

School reform attempts and professional development have been dominated by teacher performance evaluation. Because of this, many educational institutions have been encouraging instructors to earn postgraduate degrees for years now. They may also apply for graduate credits for recertification (Hill, 2017). It's time to get back to the basics. Teacher certification may also require a master's degree in some situations. Teaching professions are often launched by those who hold a master's degree; some pursue it later in their careers. With an advanced degree, these teachers can strengthen their teaching talents or explore other career opportunities in education. In addition to that, it's a way for them to earn more money. A teacher's incentive to continue in the profession to reap the financial benefits of a master's degree increases the longer she stays in the academe, (Ladd & Sorensen, 2018).

The research findings of Hilsum and Start (2018) have strongly emphasized that master's degree holders are encouraged to take on leadership roles within the educational community to promote research-based teaching techniques geared towards acquiring necessary teaching skills and strategies. Graduate teaching courses give the utmost motivation to teachers who want to make a difference in the classroom and the opportunity to influence school-wide change. They gain valuable teaching experience that will help to improve the educational landscape.

The study is anchored on the Social Cognitive Career Theory (SCCT) is a relatively new theory that is aimed at explaining three interrelated aspects of career progression: (1) how basic academic and career interests develop, (2) how educational and career choices are made, and (3) how academic and career success is obtained. The theory incorporates a variety of concepts (e.g., interests, abilities, values, environmental factors) that appear in earlier career theories and have been found to affect career devel-

opment. Developed by Robert W. Lent, Steven D. Brown, and Gail Hackett in 1994, SCCT is based on Albert Bandura's general social cognitive theory, an influential theory of cognitive and motivational processes that has been extended to the study of many areas of psychosocial functioning, such as academic performance, health behavior, and organizational development.

On the other hand, the Implicit Theory of the nature of abilities is a particular set of beliefs held by the individual (Dweck, 1999). Without necessarily being aware (therefore, implicit), people differ in how they think personal abilities can be changed through time and training. Therefore, they turn to different approaches when confronted with a challenge (for instance, in the process of learning): Whereas some people enjoy trying new strategies and change routines quite flexibly, others stick to a set of routines with which they are already familiar. The research on implicit theories aims to solve the puzzle of why people follow different patterns in the regulation processes when facing new challenges and whether one or the other way is more beneficial for learning (Burnette, 2018). Therefore, the concept of the implicit theory is highly related to and centrally important in the discourse on self-regulated learning.

On which this research is based are Republic Act Nos. 4670 (Magna Carta for Public School Teachers) and 10533 (Enhanced Basic Education Act of 2013), which emphasize the importance of continuing efforts to support the professional growth and development of all teachers and nonteaching personnel to achieve higher levels of efficacy.

To enhance the well-being and financial situation of public school teachers, the Magna Carta for Public School Teachers, formally known as Republic Act No. 4670, was developed. Public school teachers will benefit from this act by having better living conditions, employment terms, as well as career prospects so that they can compete favorably with other professions that offer similar opportunities, and by attracting more people with the necessary qualifications into the teaching profession. This act will help improve the social and economic status of public-school teachers, teachers social and economic status, which includes improving their living and working conditions as well as their terms of employment and career prospects, so that they can compete favorably with existing opportunities in other fields; to attract and retain more people with appropriate qualifications for teaching, with the recognition that advancement in education is dependent on qualifications.

Knowing the professional development, career progression and performance of post education graduates is the key to determining the outcome that can be further be facilitated through fully apprehending the process by which they grow professionally and the factors that contribute to such growth. In that connection, the researcher conducted this study to assess of the Master of Arts in Education graduates' level of professional development, career advancement and performance and to determine the impact of advanced studies degree towards career progression and performance of public school teachers in the Division of Bohol.

STATEMENT OF THE PROBLEM

The study aimed to assess the level of professional development, career progression, and performance of the graduates in Master of Arts in Education of Bohol Island State University, employed in Candijay, Alicia, Mabini, Anda, Guindulman, Jagna, Duero, Ubay and Pres. Carlos P. Garcia districts in the last three years.

Specifically, it sought to answer the following questions:

1. How may the profile of the graduates in Master of Arts in Education be described in terms of age; sex; civil status; highest educational attainment; year graduated; position upon enrolment; position after graduation; and length of service?
2. How may the perception of the respondents on the level of professional development of the graduates in Master of Arts in Education be described in the aspect of:
 - 2.1 professional development programs; and
 - professional development competencies?
3. How may the perception of the respondents on the career progression of graduates in Master of Arts in Education for the last three years be assessed?
4. How may the perception of the respondents on the performance of the graduates in Master of Arts in Education be assessed?
5. Is there a significant association between the performance of graduates in Master of Arts in Education and their profile?

6. Is there a significant association between the career progression of graduates in Master of Arts in Education and their profile?
7. Is there a significant relationship between the performance and the professional development of the graduates in Master of Arts in Education?
8. Is there a significant relationship between the career progression and the professional development of the graduates in Master of Arts in Education?

RESEARCH METHODOLOGY

Design

This study utilized quantitative-descriptive research using adopted and modified survey questionnaire about the level of professional development, career progression, and performance of Master of Arts in Education graduates of Bohol Island State University-Candijay Campus in the past three years. This descriptive research seeks to find answers to questions through the analysis of variable relationships.

Environment and Participants

Located in the province's eastern part of Bohol province, which is 99.3 kilometers from Tagbilaran City, is where the research will be conducted. Each public school in the province of Bohol is headed by a principal, head teacher, or school-in-charge. A Map of Candijay, Alicia, Mabini, Anda, Guindulman, Duero, Jagna, PCPG, and Ubay, Bohol is shown in figure 3.

Meanwhile, this research utilized random selection as a survey method to gather more comprehensive and reliable data. There were a total number of one hundred eighty (180) respondents who will be the subjects of the survey, comprising ninety (90) MAED graduates in the year 2020, forty-five (45) graduates in the year 2021, and another forty-five (45) graduates in the year 2022. Figure 2 shows the distribution of the respondents.

Instruments

This study utilized a modified research tool adopted from OECD Teaching and Learning International Survey (TALIS) (2017) for the Level of Teachers' Professional Development and Debara (2021) for the Teachers' Career Progression and Performance to gather factual data and to obtain the accurate responses of the respondents.

The questionnaire has four (4) parts namely: Part I is the questionnaire for the demographic profile to determine the respondents' age, civil status, gender, highest educational attainment, position, and length of service. Part II is the perception of the respondents on the Master of Arts in Education graduates' level of professional development. Part III is on the perception of the respondents on the Master of Arts in Education graduates' career progression and Part IV is the perception of the respondents on the performance of Master of Arts in Education graduates.

Statistical Treatment

To determine the association between the profiles of the respondents and the level of professional development and performance, Chi-square test of independence was used.

Further, to determine the relationship the MAED graduates' performance, career progression and professional development, Spearman Rank Correlation Coefficient was used.

RESULTS AND DISCUSSION

Table 1 presents the profile of the MAED graduates in terms of age, gender, civil status, highest educational attainment, year graduated, position upon enrolment, position after graduation, and length of service. The result revealed that the age bracket of 31-40 years old got the highest number of respondents having a frequency of 82 or 45.56%, 54 or 30% were aged 41-50 years old, there were 27 or 15% aged 30 years old and below while only 17 or 9.44% belonged to the age bracket of 51 years old and above. It implies that many of the respondents who pursued graduate education are relatively middle-aged.

Meanwhile, as to sex, the majority of the respondents are females with the highest frequency of 136 or 75.56% while only 44 or 24.44% were males. This denotes that most of the MAED graduates were females.

Table 1. Profile of the Teacher - Respondents

	Frequency	Percentage (%)	Rank
1.1 Age			
30 years old and below	27	15	3
31 – 40 years old	82	45.56	1
41 – 50 years old	54	30	2
51 years and above	17	9.44	4
Total	180	100%	
1.2 Sex			
Male	44	24.44	2
Female	136	75.56	1
Total	180	100%	
1.3 Civil Status			
Single	49	27.22	2
Married	123	68.33	1
Separated/Divorced	2	1.11	4
Widowed	6	3.33	3
Total	180	100%	
1.4 Highest Educational Attainment			
Master's Degree Holder	148	82.22	1
With Units in PhD/EdD	19	10.56	2
CAR in PhD/EdD	8	4.44	3
Doctorate	5	2.78	4
Total	180	100%	
1.5 Year Graduated			
2019	44	24.44	2
2020	53	29.44	1
2021	43	23.89	3
2022	40	22.22	4
Total	180	100%	
1.6 Position Upon Enrollment			
Teacher 1	58	32.22	2
Teacher 2	23	12.78	3
Teacher 3	59	32.78	1
Master Teacher 1	13	7.22	4
Master Teacher 2	4	2.22	8
Head Teacher 1	10	5.56	5
Head Teacher 2	5	2.78	7
Principal 1	6	3.33	6
Principal 2	2	1.11	9
Total	180	100%	
1.7 Position After Graduation			
Teacher 2	31	17.22	2
Teacher 3	97	53.89	1
Master Teacher 1	19	10.56	3
Master Teacher 2	7	3.89	5.5
Head Teacher 1	9	5	4
Head Teacher 2	5	2.78	7
Principal 1	8	4.44	5.5
Principal 2	4	2.22	8
Total	180	100%	
1.8 Length of Service			
5 years and below	50	27.78	2
6-10 years	46	25.56	3
11-15 years	58	32.22	1
16-20 years	17	9.44	4
21 years and above	9	5	5
Total	180	100%	

On the other hand, the above table also shows the civil status of the respondents. It has been reflected that majority of them are married with the frequency of 123 or 68.33%, 49 or 27.22% were single, 6 or 3.33% are widowed and 2 or 1.11% were separated.

Nowadays, many school districts assume that teachers possess a post-baccalaureate degree (Lewis, 2007). It is reflected in the table that the majority, 148 or more than 82% of the teacher respondents were master's degree holders, 10.56% (19) have Ph.D./Ed.D. but only 5 or 2.78% hold a Doctorate. This implies that most teacher-respondents continue to pursue advanced studies.

Earning a master's degree helps a person gain specialized knowledge to advance in his field. As the workforce evolves, a graduate degree shows dedication to enhancing one's industry expertise and credibility. Thus, most of the MAED students graduated in the year 2020 with 53 total graduates or 29.44%, followed by the year 2019 having 44 or 24.44% graduates, 43 or 23.89% graduated in the year 2021 while 22.22% (40) graduated in the year 2022. This denotes that most of the graduates in MAED were during the pandemic wherein education and schooling at that time is much more accessible since it was purely online distance mode; the students studied in the comforts of their homes.

Meanwhile, the MAED graduates' position upon enrolment is also presented in table 1. Many of the respondents were Teacher 3 with the highest frequency of 59 or 32.78%, 58 or 32.22% were still Teacher 1, 23 or 12.78% were already Teacher 2, 13 or 7.22% were Master Teacher 1 while only very few hold the higher positions of Master Teacher 2, Head Teacher 1 and 2 and Principal 1 and 2 respectively. It is clearly emphasized that the respondents hold lower positions upon enrolment. As attested in the study of Avalos (2019) that educators who have trailed post-graduate studies were in low teaching positions, thus, acquiring it helps them achieve promotions and career progression.

As to their position after graduation, it was shown that most of the respondents have been promoted. There are 97 or 53.89% progressed to Teacher 3, 31 or 17.22% hold Teacher 2 position, 19, or 10.56% are promoted to Master Teacher 1 and 9 or 5% are Head Teacher 1. The result is supported by the research findings of Hilsun and Start (2018) which emphasized that master's degree holders have relatively acquired career progression and professional development. Because of this, many educational institutions have been encouraging teachers to earn postgraduate degrees for years now.

As it was shown in the table, more than 30% of the teacher-respondents have spent 11-15 years of teaching and approximately more than 17% of them were considered experienced teachers who spent 16 – 20 years or 21 years and above in teaching.

The implicit theory of Dweck states that human abilities are important for academic learning. They form a belief system that triggers motivations, leads to different learning pathways, and shapes how individuals interpret and understand their learning experiences. Some research indicated that teaching experience positively affects teachers' performance until years 5-8 (Seferoğlu, 2015).

Table 2. Teachers' Level of Professional Development

Statement	WM	DI	Rank
2.1 Professional Development Programs			
<i>As a teacher, I...</i>			
attend courses/workshops (e.g. on subject matter or methods and/or other education-related topics)	3.31	SA	5.5
enroll education conferences or seminars (where teachers and/or researchers present their research results and discuss educational problems)	3.23	A	9.5
apply for qualification programme (e.g. a degree programme)	3.35	SA	3.5
join observation visits to other schools	3.27	SA	8
participate in a network of teachers formed specifically for the professional development of teachers	3.41	SA	2
join individual or collaborative research on a topic of interest professionally	3.57	SA	1
participate in mentoring and/or peer observation and coaching, as part of a formal school arrangement	3.31	SA	5.5
receive scheduled time for undertaking the professional development that took place during regular work hours	3.23	A	9.5
engage in informal dialogue with your colleagues on how to improve your teaching	3.35	SA	3.5
attend online NEAP-recognized professional development programs/courses.	3.30	SA	7
Average Weighted Mean		3.33	SA (Above Standards)
Professional Development Competencies			
apply content and performance standards in my main subject field(s)	3.40	SA	2
strengthen student assessment practices	3.31	SA	6
make classroom management efficient	3.23	A	9
improve knowledge and understanding of my main subject field(s)	3.23	A	9
boost knowledge and understanding of instructional practices (knowledge mediation) in my main subject field(s)	3.25	SA	7
intensify ICT skills for teaching	3.57	SA	1
am able to teach students with special learning needs	3.35	SA	3
reinforce student discipline and behaviour problems	3.33	SA	4.5
strengthen school management and administration	3.23	A	9
make student counseling effective.	3.33	SA	4.5
Average Weighted Mean		3.33	SA (Above Standards)
Composite Mean		3.33	SA (Above Standards)

Legend:	Weighted Mean (WM)
3.25 – 4.00	Strongly Agree (SA) - Above Standards
2.50 – 3.24	Agree (A) - Meets Standards
1.75 – 2.49	Disagree (D) - Below Standards
1.00 – 1.74	Strongly Disagree (SD)- Far Below Standards

Table 2 portrays teachers' level of professional development. The table depicts that as to professional development programs; "teachers join individual or collaborative research on a topic of interest professionally" gained the highest weighted mean of 3.57 verbally interpreted as Strongly Agree. Thus, it has been strongly agreed by the respondents that participating in a network of teachers formed specifically for the professional development of teachers garnered a weighted mean of 3.41. This is true in the DepEd Bohol Division where most of the teachers have been doing research particularly action research and that professional development courses are also offered by DepEd and NEAP.

On the other hand, enrolling education conferences or seminars (where teachers and/or researchers present their research results and discuss educational problems) and receiving scheduled time for undertaking the professional development that took place during regular work hours have the lowest weighted mean of 3.23 interpreted as Agree. This implies that most of the seminars and training were done during weekends and less likely during weekdays.

Further, as to the level of professional development of teachers, professional development programs were considered as Above Standards with the highest weighted mean of 3.33. Item 6 "join individual or collaborative research on a topic of interest professionally" gained the highest weighted mean of 3.57 interpreted as Above Standards while items 2 and 8 which were about enrolling in education conferences or seminars and participating in mentoring and/or peer observation and coaching got the lowest weighted mean of 3.23 still interpreted as Above Standards. The result of the study by Mizell (2018) supports the idea that professional development is an educational experience related to a practitioner's work.

Meanwhile, as to professional development competencies, teachers perceived it as Highly Efficient with the highest weighted mean of 3.33. These competencies primarily intensify the ICT skills for teaching with the weighted mean of 3.57 verbally interpreted as Strongly Agree. However, making classroom management efficient, strengthening student assessment practices, and strengthening school management and administration gained the lowest weighted mean of 3.23 still interpreted as Agree.

Overall, the teachers' level of professional development was assessed as Above Standards. This indicates that teachers who have pursued post-graduate studies have gained a higher level of professional advancement. As attested by Girvan (2016) that professional development allows them to step out of their routine — they get to be the student instead of the teacher. This keeps educators engaged because they feel like they are receiving the professional help they need to be better teachers. After all, professional development nurtures the talents of teachers who aspire to take on educational leadership positions, and teachers must learn from other experienced leaders to become effective future leaders themselves.

Table 3. Career Progression of the Graduates in Master of Arts in Education

Statement	WM	DI	Rank
<i>As a MAEd graduate in BISU, I...</i>			
feel satisfied with my opportunity for professional development.	3.51	SA	6.5
participate in available career advancement opportunities	3.48	SA	9
observe that the organization is dedicated to my professional development	3.56	SA	2
experience job-related training the organization has to offer.	3.59	SA	1
am given the opportunities to apply my expertise and talents.	3.52	SA	4.5
observe the investment the organization makes education and training.	3.44	SA	10
have a clear path to growth, and transparency on career progression opportunities, in order to stay engaged and thrive at work	3.51	SA	6.5
receive helpful feedback to your employees about how they're doing and how they can progress more efficiently toward their career goals.	3.49	SA	8
feel acknowledged in my progress and know that I did a great job.	3.54	SA	3
gain increase in salary and other benefits	3.52	SA	4.5
Average Weighted Mean	3.52	SA (Exceeds Expectations)	

Legend:	Descriptive Interpretation
3.25 – 4.00- Strongly Agree (SA)- Exceeds Expectations	
2.50 – 3.24- Agree (A)- Meet Expectations	
1.75 – 2.49- Disagree (D)- Did Not Meet Expectations	
1.00 – 1.74- Strongly Disagree (SD)- Needs Development	

Table 3 illustrates the career progression of the graduates of Master of Arts in Education. It has been shown that the MAED graduates in BISU have exceeded their expectations in their career progression opportunities because of attaining a master's degree. Hence, acquiring experience in job-related trainings that the organization had offered obtained the highest weighted mean of 3.59 also interpreted as Strongly Agree or Exceeds Expectations. It has also been observed and strongly agreed that BISU has provided opportunities for students to acquire professional development gaining a weighted mean of 3.56. Further, through acquiring MAED, the teachers have gained salary increase and other benefits which is the result of their career progression or promotion.

Table 4 below reflects the performance of the graduates of the Master of Arts in Education. It has been unveiled that the graduates of BISU have had outstanding performances in the past three years. It can be attested to the average weighted mean of 3.47. Thus, being able to apply the assessment criteria of the activities as established in the subject's curriculum ranked first with a weighted mean of 3.62 interpreted as outstanding. This signifies that the MAED graduates of BISU have performed very well in the field. Thus, they were perceived to have been showing exemplary performance and outstanding skills in their respective stations.

Table 4. Performance of the Graduates in Master of Arts in Education

Statement	WM	DI	Rank
<i>As a MAEd graduate in BISU, I...</i>			
presents the minimum content on subject matter, tailored to the students' knowledge	3.50	O	7
am easily accessible (tutorials, e-mails, etc.)	3.33	O	19
allows the student to organize and distribute part of the assignments to be performed in the course	3.48	O	10
provide clear information about objectives, bibliography, tutorials, contents, and assessment methods in the subject's curriculum	3.43	O	14
inform the students of the competencies they will be expected to acquire	3.57	O	3
provide with scientific information that allows me to gain a better and deeper understanding of the subject matter	3.58	O	2
present the contents following a clear and logical framework, highlighting the important aspects	3.43	O	14
allow and encourage student participation	3.41	O	16.5
promote individual work	3.49	O	9
promote teamwork	3.53	O	5
relate the teachings to the professional environment	3.45	O	11.5
provide initial and final overviews of the session and/or subject in class	3.31	O	20
encourage student interest and the motivation to learn	3.41	O	16.5
foster research and a critical spirit in students	3.40	O	18
facilitate student-student and student-teacher interaction	3.43	O	14
attend and respond clearly to questions asked in class	3.50	O	7
efficiently incorporate and employ ICTs (Information and Communication Technologies)	3.45	O	11.5
have a good command of the language and contents of the subject	3.56	O	4
use material resources that facilitate learning	3.50	O	7
apply the assessment criteria of the activities as established in the subject's curriculum	3.62	O	1
Average Weighted Mean	3.47	Outstanding	

Legend: Weighted Mean (WM)

Rating Scale	Descriptive Interpretation
3.25 – 4.00	Outstanding (O)
2.50 – 3.24	Very Satisfactory (VS)
1.75 – 2.49	Satisfactory (S)
1.00 – 1.74	Poor (P)

On the other hand, item 12 "provide initial and final overviews of the session and/or subject in class" is in the lowest rank having the weighted mean of 3.31 still interpreted as outstanding performance. According to Vilches (2017), teachers' impact and performance are considered a huge influence on the success and failure of educational reforms; hence, implementing reforms and programs should be done alongside teachers. Education is a chain of organized activities to the way of democratic rules in contemporary society.

Table 5 shows the test of association between the performance of the MAED graduates and their profile in terms of age, sex, civil status, highest educational attainment, and length of service. It clearly shows the significant relationship between the performance of MAED graduates and their highest educational attainment, $X^2(4, N=180)=10.70, p=0.031$, and length of service, $X^2(6, N=180)=21.60, p=0.001$, thus reject the null hypothesis. This means that the level of performance of a teacher significantly associates with his or her educational attainment. In the study by Hill (2017) it reiterated the impact of the edu-

cational background of teachers on their performance. Teachers with master's degrees teach more effectively than those without. With an advanced degree, these teachers can strengthen their teaching talents or explore other career opportunities in education. Further, effective teachers have been produced from continuing education. The educational attainment of teachers affects evidently how they performed in the field.

Table 5. Test of Association Between the Performance of the MAED Graduates and Their Profile

Profile	X ²	df	p-value	Interpretation	Decision
Age	6.60	6	0.360	Not Significant	Do Not Reject H ₀
Gender	1.41	2	0.494	Not Significant	Do Not Reject H ₀
Civil Status	0.503	4	0.973	Not Significant	Do Not Reject H ₀
Highest Educational Attainment	10.70	4	0.031	Significant	Reject H₀
Length of Service	21.60	6	0.001	Significant	Reject H₀

*Correlation is significant at 0.05 level (2-tailed)

Multiple regression was conducted to determine if the profile of MA graduates predicted their performance. The analysis showed that the profile of respondents in terms of age, $X^2(6, N=180) = 6.60, p=0.360$, gender, $X^2(2, N=180) = 1.41, p=0.494$, and civil status, $X^2(4, N=180) = 0.503, p=0.973$, do not significantly predict the performance of M.A graduates, thus failed to reject the null hypothesis. This implies that the performance of teachers is not directly influenced by their age, gender and civil status. Whether they are young, middle-aged, or more mature, it does not affect how they performed their duties and responsibilities in school more so if they are male or female. Regardless of the teacher's status whether he or she is married, single, separated, or widowed, it does not openly affect their performance.

However, the profile of respondents in terms of highest educational attainment and length of service, $X^2(4, N=180) = 10.70, p=0.031$, and length of service, $X^2(6, N=180) = 21.60, p=0.001$, significantly predict their performance, thus reject the null hypothesis. This means that the level of performance of a teacher significantly associates with his or her educational attainment.

Table 6. Test of Association Between the Career Progression of the MAED Graduates and Their Profile

Profile	X ²	df	p-value	Interpretation	Decision
Age	5.09	6	0.532	Not Significant	Do Not Reject H ₀
Sex	1.72	2	0.424	Not Significant	Do Not Reject H ₀
Civil Status	4.03	4	0.402	Not Significant	Do Not Reject H ₀
Highest Educational Attainment	2.88	4	0.578	Not Significant	Do Not Reject H ₀
Length of Service	5.51	8	0.702	Not Significant	Do Not Reject H ₀

*Correlation is significant at 0.05 level (2-tailed)

Table 6 unveils the test of association between the career progression of MAED graduates and their profile in terms of age, sex, civil status, educational attainment, employment status, and length of service. Multiple regression was conducted to determine if the profile of MA graduates predicted their career progression. The result disclosed that the profile of MaEd graduates in terms of age, $X^2(6, N=180) = 5.09, p=0.532$, sex, $X^2(2, N=180) = 1.72, p=0.424$, civil status, $X^2(4, N=180) = 4.03, p=0.402$, highest educational attainment, $X^2(4, N=180) = 2.88, p=0.578$, and length of service, $X^2(8, N=180) = 5.51, p=0.702$, do not significantly predict their career progression, thus failed to reject the null hypothesis. This suggests that the personal profile of the MAED graduates of BISU does not directly influence their career progression.

Table 7. Test of Relationship Between the Performance and Professional Development of the Graduates in Master of Arts in Education

Variables	r	df	p-value	Interpretation	Decision
Performance and Professional Development	0.274	178	<.001	Significant	Reject H ₀

*Correlation is significant at 0.05 level (2-tailed)

Table 7 discloses the test of the relationship between the performance and professional development of MAED graduates. The result shows that there is sufficient evidence to conclude that there is a signifi-

cant relationship between the performance and professional development of the MAED graduates, $r(178)=0.274$, $p<.001$, thus rejecting the null hypothesis. This denotes that the professional development of teachers considerably impacts their performance.

Social Cognitive Career Theory patterned from Bandura's General Cognitive Theory assumes that people are likely to become interested in, choose to pursue, and perform better at activities at which they have strong self-efficacy beliefs if they also have the necessary skills and environmental supports to pursue these activities.

Table 8. Test of Relationship Between the Career Progression and Professional Development of Graduates in Master of Arts in Education

Variables	r	df	p-value	Interpretation	Decision
Career Progression and Professional Development	0.271	178	<.001	Significant	Reject H_0

*Correlation is significant at 0.05 level (2-tailed)

Table 8 reveals the test of the relationship between the performance and professional development of MAED graduates. The result deduced that there is sufficient evidence to conclude that there is a significant relationship between the performance and professional development of the MAED graduates, $r(178)=0.271$, $p<.001$, thus rejecting the null hypothesis. This signifies that a teacher's career progression is the product of professional development.

Adherence to Republic Act Nos. 4670 (Magna Carta for Public School Teachers) and 10533 (Enhanced Basic Education Act of 2013), which emphasize the importance of continuing efforts to support the professional growth and development of all teachers and nonteaching personnel to achieve higher levels of efficacy and career growth. The Professional Development Priorities shall support the realization of the Department's goal of continuous upskilling and reskilling of teachers and school leaders that will result in better learning outcomes.

CONCLUSIONS

Through the findings, these conclusions are formulated:

The performance and career progression of the graduates in Master of Arts do not depend on the teachers' profile as to age, sex and civil status. The teachers who claimed of being highly competent as to performance significantly associate with their educational attainment and length of service which means that the increase of knowledge and skills gained by the teacher from advanced studies and the longer years that he or she is in the teaching profession positively contribute to teacher's performance. Moreover, the MAED Graduates' professional development relatively affects their performance and career progression. Teachers' professional development can be further facilitated through fully apprehending the process by which they grow professionally and the factors that contribute to such growth, teachers' career progression, and commitment to the job and workplace. The impact of professional development on their teaching abilities, knowledge, and career progression is pivotal to gaining a comprehensive understanding of the existent as well as the potential obstacles teachers might face.

REFERENCES

- Ancho, I.V.; Arrieta, G.S (2021). *Perspectives on the barriers to and needs of teachers' professional development in the Philippines during COVID-19*. Available from: <https://www.researchgate.net/publication/>
- Avalos, B. (2019). *Teacher professional development in teaching and teacher education over ten years*. Teaching and Teacher Education, 27(1), 10-20. <https://doi.org/10.1016/j.tate.2010.08.007>
- Ball, S., & Goodson, I. (2015). *Teachers' lives and careers*. Lewes: Falmer Press.
- Can, R. (2019). *The role of graduate education in professional development of teachers: Is graduation enough?*. <https://www.researchgate.net/>

- Chang, J. C. (2019). *Taiwanese technical education teachers' professional development: An examination of some critical factors*. *Teaching and Teacher Education*, 27(1), 165-173. <https://doi.org/10.1016/j.tate.2010.07.013>
- Coldwell, M. (2017). *Exploring the influence of professional development on teacher careers: A path model approach*. *Teaching and Teacher Education*, 61, 189-198 <https://doi.org/10.1016/j.tate.2016.10.015>
- Darling-Hammond, L.; Hyler, M.E. (2020). *Preparing educators for the time of COVID and beyond*. *Eur. J. Teach. Educ*43,457–465.
- Debara, D. (2021). *Top findings from lattice's career progression survey*. <https://lattice.com/library/top-findings-from-lattices-career-progression-survey>
- Dweck, C. S. (1999). *Self-theories: their role in motivation, personality, and development*. New York, NY: Psychology Press.
- Girvan, C. (2016). *Extending experiential learning in teacher professional development*. *Teaching and Teacher Education*, 58, 129-139. <http://dx.doi.org/10.1016/j.tate.2016.04.009>.
- Groschner, H. & Seidel, M. (2015). *The professional life cycle of teachers*. *Teachers College Record*, 91 (1), 31-57.
- Hill, P. (2017). *Development in the professional lives of headteachers*. Goodson & A. Hargreaves (Eds.), *Teachers' professional lives*. London: Falmer Press.
- Hilsum, S., & Start, K. B. (2018). *Promotion and careers in teaching*. Slough: National Foundation for Educational Research
- Kunter, M. (2018). *Professional competence of teachers: effects on instructional quality and student development*. *J. Educ. Psychol.* 105, 3. doi:10.1037/a0032583
- Ladd, W. & Sorensen, M. (2018). *Returns to teacher experience: student achievement and motivation in middle school*. https://caldercenter.org/sites/default/files/WP%20112%20Update_0.pdf
- Lent, R. W. (2015). "A social cognitive view of career development and counseling." Pp. 101-127 in *Career Development and Counseling: Putting Theory and Research to Work*, edited by S. D. Brown and R. W. Lent. New York: Wiley.
- Li, K. S., Tong, C., & Wong, A. (2018). *The impact of career development on employee commitment of part-time faculty (PTF) in Hong Kong's continuing professional development (CPD) sector*. *British Journal of Education, Society & Behavioural Science*, 4(1), 52-73.
- Mizell, H. (2018). *Why professional development matters*. *Learning Forward*. 504 South Locust Street, Oxford, OH 45056
- Nag, A. (2017). *Teachers as learners: Impacts of graduate teachers' education programs on in-service teachers' practices*.
- OECD, U.S. Department of Education (2019). *PISA 2018: Insights and Interpretations*. Available at: <https://www.oecd.org/pisa/>.
- Pehmer, A. K., Gröschner, A., & Seidel, T. (2015). *How teacher professional development regarding classroom dialogue affects students' higher-order learning*. *Teaching and Teacher Education*, 47, 108-119.
- Redondo, S. C., and Bueno, D. C. (2019). *The cognizance of the basic education teachers on the K to 12 Program*. *Institutional Multidisciplinary Res. Dev.*
- Seferoğlu, Y. (2015). *What makes professional development effective? Results from national sample of teachers*. *American Educational Research Journal*, 38(4), 915-945
- Stajkovic, A. D. and Luthans, F. (2018). "Self-efficacy and work-related performance: A meta-analysis." *Psychological Bulletin* 124:240-261.
- Tamar, L. R., and Atinc, M. (2017). *Investigations into using data to improve learning: Philippines Case Study*. Washington, DC: The Brookings Institution. Retrieved from Available at: <https://www.brookings.edu/>
- Tantawy, N. (2020). *Investigating teachers' perceptions of the influence of professional development on teachers' performance and career progression*. <https://files.eric.ed.gov/fulltext/EJ1312512.pdf>
- Taylor, M. (2016). *Teacher professional leadership in support of teacher professional development*. *Teaching and Teacher Education*, 27(1), 85- 94. <https://doi.org/10.1016/j.tate.2010.07.005>
- U.S. Department of Education (2018). *Preparing and credentialing the nation's teachers: The Secretary's ninth report on teacher quality*. Retrieved from <http://www2.ed.gov/about/reports/annual/teachprep/index.html>

- Vilches, M. L. C. (2017). "Involving teachers in the change process: One english language teacher's account of implementing curricular change in Philippine basic education," in *International perspectives on teachers living with curriculum change*. 15–37. doi:10.1057/978-1-137-54309
- Vygotsky, L. S. (1978). "Interaction between learning and development," in *Mind in Society*. Editors M. Cole, V. John-Steiner, S. Scribner, and E. Souberman (Cambridge, MA: Harvard University Press), 79–91.
- Winne, J. and Hadwin, F. (2018). "Effective schools or effective students: dealing with diversity" in *Policies for America's public schools: Teachers, equity and indicators*. eds. R. Haskins and D. MacRae (Norwood, NJ: Ablex), 89–126.

EARLY CHILDHOOD DEVELOPMENT IN RELATION TO THE LEARNERS' LEARNING BEHAVIOR AND ATTITUDE

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ABSTRACT

The aim of the study was to determine the relationship between early childhood development and learners' attitude and behavior of the kindergarten pupils. This study is a descriptive- documentary and survey method. It was conducted in public elementary school 200 kindergarten pupils and 200 parents. The results revealed no significant relationship between the pupils' learning performance as to health, well-being and motor development and their profile. On the other hand, there is a relationship between the pupils' learning performance as to socio-emotional development, language, literacy and communication, understanding physical and natural environment and their profile in terms of age, and the educational attainment of their parent or guardian. For the pupils' socio-emotional development, language, literacy and communication, understanding physical and natural environment and their profile in terms of sex, whom they live with, number of siblings, and birth order found no relationship. Meanwhile, the pupils' learning performance as to and their profile in terms of age, and the educational attainment of their parent or guardian have association. Further, a significant relationship was found between the pupils' learning attitude, and behavior and learning performance as to health, well-being and motor development, socio-emotional development, language, literacy and communication, and understanding the physical and natural environment. This study concludes that the profile of the pupils has no effect to their performance as to health, well-being and motor development, and has no bearing in developing pupils' language, literacy and communication. However, the pupils' age and parent/ guardian's educational attainment is an important factor to achieve better learning performance of the learners. Further, pupils' performance depends on the learner's attitude as to how they react, feel and think on the learning process, and the pupils' learning behavior significantly helps increase learning performance.

Keywords: Attitude, Early Childhood Development, Learner,' Learning Behavior

INTRODUCTION

The kindergarten curriculum emphasized social-emotional development, including interpersonal and learning-related (L-R) skills (Logue, 2017). In Formal schooling or treatment that takes place before primary school in early childhood education. It is usually encompassing the ages from birth to around seven years. In comparison, early childhood education is optional instead of mandatory (Great Essays).

Kindergarten has been seen as a critical year of transition as all school-age children start receiving formal education. Some might have little experience with settings like schools, while some may have attended preschool programs. With students from all different homes, cultures, and backgrounds, it is imaginable to see how chaotic a kindergarten classroom could be and how clueless kids could be for the first few weeks of school.

As a kindergarten and primary school teacher, you realize that the children's success depends heavily on their enthusiasm, curiosity, persistence, and willingness to organize their work and control their emotions. According to Hyson (2015), New Jersey educators are motivated by literacy and mathematics requirements, expectations for the increasingly essential learning methods required. One must bear in mind that Kindergarten teaching requires specialized training. Teachers must be alert and creative enough to implement games and plays suited to the nature of preschoolers.

Today, kindergarten education still shows the characteristic trends suggestive of its historical background. Simultaneously, it has also adopted modification in the direction of newer precise movements in psychology and education. In the Asia-Pacific district, the pattern was towards a good thankfulness and advancement of the significance of early adolescence care and instruction, (Vesely, 2018).

The five developmental domains were also examined by Shatla (2020) in a study of 948 children aged 3-5 years old in Makkha, Saudi Arabia (Gross Motor, Fine Motor, Language and Communication, Problem-Solving and Adaptive Behavior, and Personal and Social Performance). Communication, problem-solving, and personal/social abilities were all shown to be high-risk areas for Developmental Delay. To ensure early identification and intervention, it identified several modifiable risk factors and urged preschool children to undergo early screening.

Physical, mental, emotional, and psychological gap in young children can be a precursor to learning differences. We can identify the factors causing developmental delays and understand the developmental needs of our kindergarten learners by using the contextualized ECD checklist. Kindergarten teachers can use this method to assess kindergarten students' competencies in a variety of domains. As a result, the findings will serve as a foundation for teachers to develop appropriate learning activities and tasks that address the unique needs of the learners. In addition, if developmental delays are detected, early interventions and/or additional evaluation are often administered. There are numerous signs and symptoms of developmental delay which will occur in children and that they frequently vary depending on specific characteristics. Sometimes you will notice symptoms in infancy, but in other cases you will not notice them until your child reaches school age. In line with current research, there are various causes of developmental delay which will affect a child's developmental needs, (Ipatenco, 2019).

"Learning Behavior" is associated with maternal age, parental education, socioeconomic level of parents and consanguineous marriages according to Demirci (2015). A reliable validated parent-finished questionnaire is essential for recognizing risk factors and determining developmental delays in children in primary care when their growth and development is tracked. Identifying developmental delays and referring children to rehabilitation services as soon as possible may also assist improve their quality of life.

Behavioral regulation requires children to integrate multiple component skills and form behavioral responses, such as remembering a classroom rule to raise their hand before participating (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2018).

The study of kindergarten children's play experiences and intellectual development (Salinas, Rosaroso, & Tubiano, 2011) looked into how instructors used games and activities, whether play experience operated, and how it aided understanding. It looked at the link between preschoolers' thinking abilities and their leisure activities. Respondents were picked at random from 59 parents of kindergartners. They kept a close eye on their youngsters while they were playing. Their responses to the interview schedule were primary sources of data. Findings revealed that the most frequent play experience was active play, problem-solving, using imagination were most developed cognitive skills, functional, constructive, and dramatic plays had a significant relationship to problem-solving and mental planning. The findings indicated a need for younger children to have personal experience with multiple types of toys to improve cognitive skills.

In this study, there were few theories in which had been carefully considered as its bases to come up with general picture of the problem. When studying child development, there are some fundamental theories that we must acknowledge to further understand the children. Theories can help teachers in distinguishing among typical patterns of development and precise styles of development, allowing them to provide additional instructional assistance or services to younger children. Teachers' formal and informal instruction will be guided via developmental theories.

The three ideologies, Human Growth Theory, Sociocultural Cognitive Theory, and Constructivist Theory are the foundation of this analysis. The first hypothesis is Jean Piaget's theory of cognitive growth, which indicates that children pass through four separate brain development phases. This hypothesis seeks to comprehend not only how children acquire intelligence, but also in understanding nature (Cherry, 2020). Piaget argued that children participate actively in the learning process, acting as mini scientists conducting experiments, drawing conclusions, and acquiring well about environment. Kids constantly introduce new information; build on current understanding, and change previously held concepts to incorporate relevant info as they communicate with other people around them.

Any perception and contact inside the classroom influence the case in infancy, according to Jean Piaget (1936) in his Cognitive Development Theory (Pachina, 2019). When Piaget investigated and explored his cognitive development theories, he realized this (McLendon, 2011). A number of his research led to the assumption that each interaction establishes cognitive structure in children, which is very important within the classroom environment. In his theories, they impact learning in many ways, but keeping in mind the curriculum and teaching applies directly to the essentials of child development.

Based on the Universal Class Study of Cognitive Development in Understanding Child Development, Piaget's (1936) theory of cognitive development was frequently used in psychology and child development. The core premise of the philosophy of Piaget is that children go through separate periods of mental growth that are different from each other and are affected by both nature and nurture. It also considers how these mental processes shape our perceptions of and interact with the environment.

Vygotsky (1978) also reaffirmed the concept of the Zone of Proximal Development (ZPD) in children's learning. According to this theory, children who are in the zone of proximal development for a specific skill are almost capable of performing it independently. However, they need some help to complete the job successfully. Vygotsky believed the role of education to provide children with experiences in their ZPD, thereby encouraging and advancing their learning (Berk & Winsler, 1995).

Concomitantly, this research is based on the following legal basis. As stated in Article XV of the Philippine Constitution of 1987, the country shall defend the children's right to assistance, which includes proper health care and nutrition, as well as their unique protection from all forms of neglect, abuse, cruelty, exploitation, and other situations detrimental to their development. Philippine government has made tremendous progress in realizing the holistic development of children, as stated above. After the passage of this mandate, the Early Childhood Care Act (ECCD ACT) was promulgated through RA 8980.

Therefore, as a Kindergarten teacher, understanding a child's development is crucial. Analysing how children develop and what they require at different developmental stages will also assist educators as well as the parents in seeing the wider picture of education. When the quality of stimulation, support and nurture is lacking, there can be detrimental effects on overall development (Flemming, 2019).

The shift of the teaching-learning delivery in schools to modular distance learning made more challenging, on the part of the parents, teachers and most especially to the learners, in the delivery of basic quality education.

Similarly early problem behavior in classroom structured learning activities consistently predicted lower academic outcomes (early reading and mathematics ability) as well as lower motivation, attention, and persistence in academically focused tasks. Early problem behavior in peer situations predicted lower attitude toward learning, reflecting children's difficulties self-regulating and engaging appropriately in socially mediated classroom learning activities. (Bulotsky-Shearer et. al, 2019)

In this connection, this study would be viable given that it tackles and further studies the relationship of early childhood development towards learners' behavior and attitude. Further, the result of this study would help the researchers in proposing an enhancement program resulting in excellent learning outcomes for kindergarten pupils who will be academically, emotionally, physically, and socially ready to enter grade one the following year.

Statement of the Problem

The primary objective of the study was to determine the relationship between early childhood development and learners' learning attitude and behavior of the kindergarten pupils in Candijay, Alicia, Mabini, Anda Guindulman (CAMAG). Specifically, the study aimed to answer the following:

1. How many profile of the pupil-respondents be described in terms of sex; age; with whom does the child live; child's number of siblings child's birth order; and Parents/Guardian educational background?
2. What is the parent-respondents' assessment on kindergarten pupils' learning performance as to health, well-being and motor development; socio-emotional development; language, literacy, and communication; and understanding the physical and natural environment?
3. What is the parent-respondents' assessment on the pupils' learning attitude as to content and knowledge; and instructional strategies?
4. What is the parent-respondents' assessment on the pupils' learning behavior in terms of tasks; and social-emotional?

5. Is there a significant relationship between the respondents' profile and the pupils' learning performance in term of health, well-being and motor development; socio-emotional development; language, literacy and communication; and understanding physical and natural environment?
6. Is there a significant relationship between the pupils' learning attitude and performance?
7. Is there a significant relationship between the pupils' learning behavior and performance?

RESEARCH METHODOLOGY

Design

This study employed descriptive- documentary and survey method, intended to provide the needed data to determine the relationship between the early childhood development and learners' attitude and behavior.

Environment and Participants

This study was conducted in the third congressional district of Bohol, Philippines specifically Candi-jay, Alicia, Mabini, Anda and Guindulman (CAMAG) Districts. The respondents subjected in this study were the kindergarten parents, and kindergarten pupils in the said zone. They were composed of four hundred (400) respondents. There were two hundred (200) parents and two hundred (200) kindergarten pupils randomly selected in this study.

Instrument

The utilized the Early Childhood Checklist Development (ECCD) of the Department of Education (DepEd). The data for the early childhood performance was gathered through a modified tool based on the Kindergarten Progress Report Card. The development report will summarize the learner's overall achievement based on all evidence of learning, including portfolios, checklists, and teacher observations. Developmental domains and content areas are represented in the development file by a cluster of abilities. Another modified instrument from Rowley (2015) was also used to determine the learners' attitude and behavior towards learning.

Treatment of Data

This study used Chi-square Test of Independence to find the relationship between the teachers' profile and the learners' attitude and behavior; and the Spearman Rank Correlation Coefficient to determine the correlation between the early childhood development and the learners' attitude and behavior.

RESULTS AND DISCUSSION

The profile of the pupils-respondents. It has been revealed that 56% were males while 44% were females. Majority of the respondents belongs to age of 5 which means that they are undergoing their vital and crucial stage of development this result supported by the study of (Bakken, et.al 2017). The recent study shows that the parents play the most important role in overall development of a child, that parenting and child development go hand in hand means that the role of the parents is responsive, responsible and never-ending.

On the other hand, parents shows the needs to balance their attention where 28.5% of them have two siblings in which they fall having 32.5 % as the second child in birth order. According to the study of (Okada, et.al 2021) birth order is a crucial environmental factor for child development. For example, later-born children are relatively unlikely to feel secure due to sibling competition or diluted parental resources. In contrast, the positive effect of being earlier-born on cognitive intelligence is well established.

Children need to be given the opportunities and encouragement to fulfill their potential, whatever order they were born in, and helping to provide an environment that is conducive to them doing this is one of the most important aspects of being a parent.

Research revealed that 33% pupil-respondents, had parent/ guardian graduated from high school, this means that they can nurture and support their child's development. It is not new that parents are the primary influence in child's life, but parents influence is far more way that is important. Research shows

that parents educational level has a significant to child’s success according to an article “Correlation Between Parents’ Education Level and Children’s Success” (2021) research indicates that a child whose parents model achievement-oriented behaviors and provide achievement-oriented opportunities tend to believe that achievement is to be valued and pursued.

Table 1.1 presents the Assessment on Kindergarten Pupils’ Learning Performance in Domain 1: Health, Well-Being and Motor Development. For the beginning, the highest rank was item 5 “Traces, copies, or writes letters and numerals” with 17%, while the lowest rank was item 3 “3. Demonstrates fine motor skills needed for self-care / self-help such as tooth brushing, but- toning, screwing and unscrewing lids, using spoon and fork correctly, etc.” with 8%.

Meanwhile, for developing aspect, the highest rank was item 4 “Demonstrates fine motor skills needed for creative self-expression/art activities, such as tearing, cutting, pasting, copying, drawing, coloring, molding, painting, lacing, etc.” 46.50%, while the lowest rank was item 2 “Demonstrates locomotor skills such as walking, running, skipping, jumping, climbing correctly during play, dance or exercise activities” with 20.50%.

Table 1.1 Respondent’s Assessment on Kindergarten Pupils’ Learning Performance Domain 1: Health, Well-Being and Motor Development

Performance Tasks	Beginning			Developing			Consistent		
	F	%	Rank	F	%	Rank	F	%	Rank
1.Demonstrates behaviors that promote personal safety	16	8.00	2	82	41.00	2	102	51.00	4
2.Demonstrates locomotor skills such as walking, running, skipping, jumping, climbing correctly during play, dance or exercise activities	9	4.50	4	41	20.50	5	150	75.00	1
3.Demonstrates fine motor skills needed for self-care / self-help such as tooth brushing, but- toning, screwing and unscrewing lids, using spoon and fork correctly, etc.	8	4.00	5	70	35.00	4	122	61.00	2
4.Demonstrates fine motor skills needed for creative self-expression/art activities, such as tearing, cutting, pasting, copying, drawing, coloring, molding, painting, lacing, etc.	16	8.00	2	93	46.50	1	91	45.50	5
5.Traces, copies, or writes letters and numerals	17	8.50	1	77	38.50	3	106	53.00	3

In the aspect of consistent, the highest rank was item 2 “Demonstrates locomotor skills such as walking, running, skipping, jumping, climbing correctly during play, dance or exercise activities” with 75%, while the lowest rank was item 4 “Demonstrates fine motor skills needed for creative self-expression/art activities, such as tearing, cutting, pasting, copying, drawing, coloring, molding, painting, lacing, etc.” with 45.50%.

The pupils’ performance task demonstrates locomotor skills such as walking, running, skipping, jumping, climbing correctly during play, dance or exercise activities. This means that respondents have a well-developed gross motor skills that can be related to other areas of learning, for instance child having a skill in dancing may gain self-confidence that leads to the development of socio-emotional domains. On the other hand, the learners little hands needs to develop dexterity and strength. In line with the study conducted by Seo S. M. (2018) study showed a high level of correlation between fine motor skills and handwriting legibility since it is a fundamental skill that children need to develop.

Table 1.2 presents the Respondent’s Assessment on Kindergarten Pupils’ Learning Performance Domain 2: Socio-Emotional Development. For the beginning, performance task number 4 “Expresses feelings in appropriate ways and in different situations” and 9 “Identifies people and places in the school and community” got the highest rank with 12%, while the lowest rank was item number 8 “Identifies members of one’s family” with 3.50%.

**Table 1.2 Respondent’s Assessment on Kindergarten Pupils’ Learning Performance
Domain 2: Socio-Emotional Development**

Performance Tasks	Beginning			Developing			Consistent		
	F	%	Rank	F	%	Rank	F	%	Rank
1. States personal information (name, gender, age, birthday)	9	4.50	8	77	38.50	6	114	57.00	3
2.Expresses personal interests and needs	18	9.00	4	71	35.50	7	111	55.50	4
3.Demonstrates readiness in trying out new experiences, and self-confidence in doing tasks independently	13	6.50	5	78	39.00	5	109	54.50	5
4.Expresses feelings in appropriate ways and in different situations	24	12.00	1.5	109	54.50	1	67	33.50	9
5.Follows school rules willingly and executes school tasks and routines well	20	10.00	3	85	42.50	3.5	95	47.50	7
6.Recognizes different emotions, acknowledges the feelings of others, and shows willingness to help	10	5.00	7	85	42.50	3.5	105	52.50	6
7.Shows respect in dealing with peers and adults	11	5.50	6	70	35.00	8	119	59.50	2
8.Identifies members of one’s family	7	3.50	9	34	17.00	9	159	79.50	1
9.Identifies people and places in the school and community	24	12.00	1.5	99	49.50	2	77	38.50	8

In terms of developing, statement number 4 “Expresses feelings in appropriate ways and in different situations” got the highest rank with 54.50%, while the lowest rank was statement number 8 “Identifies members of one’s family” with 17%.

For the consistent, task number 8 “Identifies members of one’s family” got the highest percentage of 79.50, while the lowest for this area was item number 4 “Expresses feelings in appropriate ways and in different situations” with a percentage of 33.50. The performance task for this domain obviously increased which lead to the development of their socio-emotional aspect.

Table 1.3 presents the Respondent’s Assessment on Kindergarten Pupils’ Learning Performance Domain 3 on Language, Literacy, and Communication. It can be gleaned in the performance task listening and viewing that the beginning got the highest percentage on the item 8 “Predict story outcomes” with 23.50 while the lowest percentage was item 2 “Listens attentively to stories/poems/songs” with 7.50.

For developing, statement number 4 “Relate story events to personal experiences” obtained the highest frequency of 115 or 57.50%.

**Table 1.3 Respondent’s Assessment on Kindergarten Pupils’ Learning Performance
Domain 3: Language, Literacy, and Communication**

Performance Tasks	Beginning			Developing			Consistent		
	F	%	Rank	F	%	Rank	F	%	Rank
2.3.1 Listening and Viewing									
1. Distinguishes between elements of sounds e.g. pitch (low and high), volume (loud and soft)	22	11	7	88	44	8	90	45	2.5
2. Listens attentively to stories/poems/songs	15	7.5	9	95	47.5	7	90	45	2.5
3. Recalls details from stories/poems/songs listened to	18	9	8	102	51	5	62	31	5
4. Relate story events to personal experiences	32	16	4	115	57.5	1	53	26.5	7
5. Sequence events from a story listened to	42	21	2	110	55	3	48	24	8
6. Infer character traits and feelings	30	15	5	101	50.5	6	69	34.5	4
7. Identify simple cause-and-effect and problem-solution relationship of events in a story listened to or in a familiar situation	37	18.5	3	107	53.5	4	56	28	6
8. Predict story outcomes	47	23.5	1	112	56	2	41	20.5	9
9. Discriminates objects/pictures as same and different, identifies missing parts of objects/pictures, and identifies which objects do not belong to the group	24	12	6	73	36.5	9	103	51.5	1
2.3.2. Speaking									
1. Uses proper expressions in and polite greetings in appropriate situations	23	11.5	5	100	50	2	77	38.5	5
2. Talks about details of objects, people, etc. using appropriate speaking vocabulary	27	13.5	3.5	91	45.5	4	82	41	3
3. Participates actively in class activities (e.g., reciting poems, rhymes, etc.) and discussions by responding to questions accordingly	33	16.5	1	103	51.5	1	64	32	6
4. Asks simple questions (who, what, where, when, why)	15	7.5	6	72	36	6	113	56.5	1
5. Gives 1 to 2 step directions	27	23.5	3.5	92	46	3	81	40.5	4
6. Retells simple stories or narrates personal experiences	28	24	2	85	42.5	5	87	43.5	2

2.3.3 Reading									
1. Identifies sounds of letters (using the alphabet of the Mother Tongue)	48	24	1.5	103	51.5	5.5	49	24.5	5.5
2. Names uppercase and lower case letters (using the alphabet of the Mother Tongue)	47	23.5	3	104	52	4	49	24.5	5.5
3. Matches uppercase and lower case letters (using the alphabet of the Mother Tongue)	35	17.5	7	85	42.5	8	80	40	1
4. Identifies beginning sound of a given word	25	12.5	8	99	49.5	7	76	38	2
5. Distinguishes words that rhyme	36	18	6	103	51.5	5.5	61	30.5	3
6. Counts syllables in a given word	43	21.5	4	107	53.5	3	50	25	4
7. Identifies parts of the book (front and back, title, author, illustrator, etc.)	48	24	1.5	114	57	2	38	19	8
8. Shows interest in reading by browsing through books, predicting what the story is all about and demonstrating proper book handling behavior (e.g., flip pages sequentially, browses from left to right, etc.) Interprets information from simple pictographs, maps, and other environmental print	39	19.5	5	115	57.5	1	46	23	7
2.3.4 Writing									
1. Writes one's given name	21	10.5	3	65	32.5	3	114	57	1
2. Writes lower case and upper case letters	23	11.5	2	67	33.5	2	110	55	2
3. Express simple ideas through symbols (e.g., drawings, invented spelling)	36	18	1	112	56	1	52	26	3
2.3.5 Mathematics									
1. Identifies colors	9	4.5	20	63	31.5	19	128	64	1
2. Identifies shapes	16	8	17.5	71	35.5	15.5	113	56.5	5
3. Sorts objects according to shape, size, and/or color	14	7	19	61	30.5	20	125	62.5	2
4. Compares and arrange objects according to a specific attribute (e.g., size, length, quantity, or duration)	16	8	17.5	68	34	17	116	58	4

The lowest frequency for the beginning was statement number 9 “Discriminates objects/pictures as same and different, identifies missing parts of objects/pictures, and identifies which objects do not belong to the group” with 73 or 36.50.

The developing achieved the highest frequency of 103 or 51.50% for item 9 “Discriminates objects/pictures as same and different, identifies missing parts of objects/pictures, and identifies which objects do not belong to the group”, while the lowest frequency was item 8 “Predict story outcomes” with 41 or 20.50%.

On the pupils’ speaking task, the beginning and developing highest percentage was item number 3 “Participates actively in class activities (e.g., reciting poems, rhymes, etc.) and discussions by responding to questions accordingly” with 33 or 16.50% and 103 or 51.50% respectively. The lowest frequency for this task was item 4 “Asks simple questions (who, what, where, when, why)” with 15 or 7.5% for the beginning and 72 or 36% for the developing. On the other hand, the highest frequency for the consistent was item 4 “Asks simple questions (who, what, where, when, why)” with 113 or 56.5% while the lowest frequency was item 3 “Participates actively in class activities (e.g., reciting poems, rhymes, etc.) and discussions by responding to questions accordingly” with 64 or 32%.

On reading task, the beginning obtained the highest frequency on item number 1 “Identifies sounds of letters (using the alphabet of the Mother Tongue)” and 7 “Identifies parts of the book (front and back, title, author, illustrator, etc.)” with 48 or 24%, while the lowest frequency of 25 or 12.5% was item 4 “Identifies beginning sound of a given word”. Meanwhile, the developing got the highest frequency on item 8 “Shows interest in reading by browsing through books, predicting what the story is all about and demonstrating proper book handling behavior (e.g., flip pages sequentially, browses from left to right, etc.) Interprets information from simple pictographs, maps, and other environmental print” with 115 or 57.5%, while the lowest was item 3 “Matches uppercase and lower case letters (using the alphabet of the Mother Tongue)” with 85 or 42.5%. The consistent obtained the highest frequency on item 3 “Matches uppercase and lower case letters (using the alphabet of the Mother Tongue)” with 80 or 40%, while the lowest was item 7 “Identifies parts of the book (front and back, title, author, illustrator, etc.)” with 38 or 19%.

For the writing task, the highest frequency for beginning and developing was item 3 “Express simple ideas through symbols (e.g., drawings, invented spelling) with 36 or 18% and 112 or 56% respectively. The lowest frequency for the beginning was item 1 “Writes one’s given name” 21 or 10.5% and 65 or 32.5% respectively. Moreover, the consistent got the highest percentage on item 1 “Writes one’s given name” with 114 or 57%.

en name” with 57 or 114 frequency, while the lowest was item 3 “Express simple ideas through symbols (e.g., drawings, invented spelling)” with a frequency of 52 or 26%.

For the performance task mathematics, the highest frequency for the beginning was item 8 “Distinguishes the time of day and tells time by the hour (using analog clock)” with 90 or 45%, while the lowest frequency was item 1 “Identifies colors with” 9 or 4.5%. For developing, the highest frequency was item 14 “Identify the placement of objects (e.g. 1st, 2nd, 3rd, etc.) in a given set” with 103 or 51.5%, while the lowest frequency was item 3 “Sorts objects according to shape, size, and/or color” with 61 or 30.5%. For the consistent, the highest frequency was item 1 “Identifies colors” with 114 or 57%, while the lowest was item 8 “Distinguishes the time of day and tells time by the hour (using analog clock)” with a frequency of 23 or 11.5%.

Table 1.4 exhibits the Respondent’s Assessment on Kindergarten Pupils’ Learning Performance Domain 4 on Understanding the Physical and Natural Environment. As seen in the table for the beginning, the performance task number 6 “Identify different kinds of weather” obtained the highest rank with 21.50%, while the task number 1 “Identifies body parts and their functions” has the lowest percentage of 4.50%.

Table 1.4 Respondent’s Assessment on Kindergarten Pupils’ Learning Performance Domain 4: Understanding the Physical and Natural Environment

Performance Tasks	Beginning			Developing			Consistent		
	F	%	R	F	%	R	F	%	R
1. Identifies body parts and their functions	9	4.5	6	69	34.5	6	121	60.5	1
2. Records observations and data with pictures, numbers and/or symbols	27	13.5	4	94	47	5	78	39	2.5
3. Identifies parts of plant and animals	17	8.5	5	105	52.5	4	78	39	2.5
4. Classifies animals according to shared characteristics	34	17.5	3	116	58	1	50	25	4.5
5. Describes the basic needs and ways to care for plants, animals and the environment	39	19.5	2	112	56	2	49	24.5	6
6. Identify different kinds of weather	43	21.5	1	107	53.5	3	50	25	4.5

In addition, for the developing, performance task number 4 “Classifies animals according to shared characteristics” has the highest percentage of 58 with the frequency of 116, while the lowest percentage was task number 1 “Identifies body parts and their functions” with 34.50 or having a frequency of 69.

Further, for the consistent highest rank was task number 1 “Identifies body parts and their functions” with 60.50% or having a frequency of 121, while the lowest rank was task number 5 “Describes the basic needs and ways to care for plants, animals and the environment” with 24.50% or having a frequency of 49. Pupils shows improvement in their learning performance task, wherein majority of them achieved on understanding the physical and natural environment.

Table 2 Respondents’ Assessment on the Pupils’ Learning Attitude

Statement	WM	DI	Rank
<i>The learners...</i>			
3.1. Content and Knowledge			
1. focus on the things that interest them the most	2.98	A	9.5
2. motivated to learn and feel that they have options to learn	3.21	A	5
3. excited about what they are learning in class with the teacher	3.29	SA	1
4. participate actively in class activities	3.18	A	6
5. eager to follow physical activities as instructed	3.28	SA	2
6. portray positive attitude towards learning new things or skill	3.22	A	3.5
7. take an interest in the sights, sounds, and sensations of the world and to calm oneself down	3.13	A	7.5
8. shows ability to engage in two-way communications	3.13	A	7.5
9. create complex gestures, to string together a series of actions into an elaborate and deliberate problem-solving sequence	2.98	A	9.5
10. sits still and pays attention to teachers' discussion	3.22	A	3.5
Average Weighted Mean	3.16	Agree	

	Average Weighted Mean	3.16	Agree	
3.2 Instructional Strategies				
1. understand and interprets a story or other text read aloud	3.05	A	9	
2. lead physical exercises and dancing	3.14	A	5	
3. portray mastery in letter names and letter sounds	3.12	A	6.5	
4. interact actively in class activities	3.15	A	4	
5. show understanding in numeracy	3.21	A	2	
6. work excitingly on puzzles and pattern games	3.18	A	3	
7. show independence in class	3.22	A	1	
8. show a sense of self-control like waiting for his or her turn	3.08	A	8	
9. do the clean-up time with happiness	3.12	A	6.5	
10. make transition from free play to work time	3.02	A	10	
	Average Weighted Mean	3.13	Agree	
	Composite Mean	3.15	Agree	

Legend:

Rating Scale	Descriptive Interpretation	Weighted Mean (WM)
3.25 – 4.00	Strongly Agree (SA)	
2.50 – 3.24	Agree (A)	
1.75 – 2.49	Disagree (D)	
1.00 – 1.74	Strongly Disagree (SD)	

Table 2 illustrates the Respondents' Assessment on the Pupils' Learning Attitude in terms of content and knowledge, and instructional strategies.

As to the content and knowledge, statement number 3 “excited about what they are learning in class with the teacher” got the highest weighted mean of 3.29 or Strongly Agree. The lowest weighted mean for this category was statement number 1 “focus on the things that interest them the most” and number 9 “create complex gestures, to string together a series of actions into an elaborate and deliberate problem-solving sequence” with 2.98 or Agree. The average weighted mean for this category was 3.16 and interpreted as Agree.

On the other hand, the highest weighted mean for the instructional category was item number 7 “show independence in class” with 3.22 or Agree. The lowest weighted mean for this category was item number 10 “make transition from free play to work time” with 3.02 or Agree. The average weighted mean for this area was 3.13 and interpreted as Agree.

Kindergarten is an essential and crucial year for laying the groundwork for the child's educational needs. It is an avenue where children develop their abilities, skills, and talents from their earliest age. Early developmental changes can have profound and lasting impact for a child's future. Thus, it is critical for us as teachers and parents to pay attention to and record the child's progress. Measuring kindergarten learning development, however, may be challenging since each kid learns at his or her own rate (Loveless, 2021).

The assessment of the respondents obtained a composite mean of 3.15 and described as Agree. This indicates that the pupils eagerly participate from different activities and learned from it. Behavioral regulation requires children to integrate multiple component skills and form behavioral responses, such as remembering a classroom rule to raise their hand before participating, (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2018).

Table 3 Respondents' Assessment on the Pupils' Learning Behavior

Statement	WM	DI	Rank
<i>The learners...</i>			
3.1. Tasks			
1. observes rules and follows directions without requiring repeated reminders	3.03	A	8.5
2. completes learning tasks involving two or more steps (e.g., cutting and pasting) in organized way.	3.08	A	6
3. completes tasks successfully	3.25	A	1
4. attempts new challenging tasks.	3.09	A	5
5. concentrates when working on a task; is not easily distracted by surrounding activities.	2.96	A	10
6. responds to instructions and then begins an appropriate task without being reminded.	3.04	A	7
7. takes time to do his/her best on a task.	3.11	A	4
8. finds and organizes materials and works in an appropriate place when activities are initiated.	3.03	A	8.5
9. sees own errors in a task and corrects them	3.14	A	2
10. returns to unfinished tasks after interruption	3.13	A	3
	Average Weighted Mean	3.08	Agree

3.2. Social-Emotional			
1. willing to share toys or other things with other children when playing; does not fight or argue with playmates in disputes over property	3.38	SA	1
2. cooperative with playmates when participating in a group play activity; willing to give and take in the group, to listen to or help others	3.35	SA	2
3. takes turns in a game situation with toys, materials, and other things without being told to do so	3.21	A	4
4. complies with adult directives, giving little or no verbal or physical resistance, even with tasks that he/she dislikes.	3.05	A	5
5. does not fuss when he/she has to wait briefly to get attention from teacher or other adult; child may be asked once to wait by the teacher or adult.	3.25	SA	3
Average Weighted Mean		3.25	Strongly Agree
Composite Mean		3.16	Agree

Legend:

Rating Scale	Weighted Mean(WM)	Descriptive Interpretation
3.25 – 4.00		Strongly Agree (SA)
2.50 – 3.24		Agree (A)
1.75 – 2.49		Disagree (D)
1.00 – 1.74		Strongly Disagree (SD)

On the Respondents' Assessment on the Pupils' Learning Behavior. As the pupils' task, the highest weighted mean was statement number 3 "completes tasks successfully" with 3.25 or Agree, while the lowest weighted mean for this area was item number 5 "concentrates when working on a task; is not easily distracted by surrounding activities" with 2.96 or Agree. This denotes that the pupils were effectively finishing their assigned task and submit on the given time.

On the pupils' social- emotional, the highest weighted mean was item number 1 "willing to share toys or other things with other children when playing; does not fight or argue with playmates in disputes over property" with 3.38 or Strongly Agree, while the lowest weighted mean was item number 4 "complies with adult directives, giving little or no verbal or physical resistance, even with tasks that he/she dislikes" with 3.05 or Agree. This means that the pupils develop this social and emotional aspect as they were cooperative in participating activities and mingle with mates by playing and sharing things.

The findings indicated a need for younger children to have personal experience with multiple types of toys to improve cognitive skills.

Table 4.1 Test of Relationship Between the Respondents' Profile and Learning Performance As to Health, Well-Being and Motor Development

Profile	X ²	df	p-value	Interpretation	Decision
Sex	0.777	2	0.678	Not Significant	Do Not Reject H ₀
Age	3.911	4	0.418	Not Significant	Do Not Reject H ₀
Whom the Child Live With	8.099	8	0.424	Not Significant	Do Not Reject H ₀
Number of Siblings	9.324	8	0.316	Not Significant	Do Not Reject H ₀
Birth Order	11.946	10	0.289	Not Significant	Do Not Reject H ₀
Parent/Guardian Educational Attainment	10.485	6	0.106	Not Significant	Do Not Reject H ₀

*Correlation is significant at 0.05 (2-tailed)

Table 5.1 shows the test of relationship between the pupils' learning performance as to health, well-being and motor development and their profile in terms of sex, age, whom they live with, number of siblings, birth order, and the educational attainment of their parent or guardian. The results revealed that there is no significant relationship between the pupils' learning performance as to health, well-being and motor development and their profile in terms of sex, $X^2(2)=0.777, p=0.678$, age, $X^2(4)=3.911, p=0.418$, whom they live with, $X^2(8)=8.099, p=0.424$, number of siblings, $X^2(8)=9.324, p=0.316$, birth order, $X^2(10)=11.946, p=0.289$, and the educational attainment of their parent or guardian, $X^2(6)=10.485, p=0.106$, thus failed to reject the null hypothesis. This implies that the profile of the pupils has no effect to their performance as to health, well-being and motor development.

Table 4.2 Test of Relationship Between the Respondents' Profile and Learning Performance As to Socio-Emotional Development

Profile	X ²	df	p-value	Interpretation	Decision
Sex	0.608	2	0.738	Not Significant	Do Not Reject H ₀
Age	13.931	4	0.008	Significant	Reject H ₀
Whom the Child Live With	5.269	8	0.729	Not Significant	Do Not Reject H ₀
Number of Siblings	10.649	8	0.222	Not Significant	Do Not Reject H ₀
Birth Order	10.060	10	0.435	Not Significant	Do Not Reject H ₀
Parent/Guardian Educational Attainment	22.390	6	0.001	Significant	Reject H ₀

*Correlation is significant at 0.05 (2-tailed)

Table 4.2 displays the test of relationship between the pupils' learning performance as to socio-emotional development and their profile in terms of sex, age, whom they live with, number of siblings, birth order, and the educational attainment of their parent or guardian. The results exposed that there is a sufficient evidence of a significant relationship between the pupils' learning performance as to socio-emotional development and their profile in terms of age, $X^2(4)=13.931$, $p=0.008$, and the educational attainment of their parent or guardian, $X^2(6)=22.390$, $p=0.001$, thus the null hypothesis is rejected. This indicates that age and parent/ guardian's educational attainment is an important factor to achieve better learning performance of the pupils. Thus, the older learner and educated parent/ guardian can help the pupils improve learning performance.

However, there is no significant relationship between the pupils' socio-emotional development and their profile in terms of sex, $X^2(2)=0.608$, $p=0.738$, whom they live with, $X^2(8)=5.269$, $p=0.729$, number of siblings, $X^2(8)=10.649$, $p=0.222$, and birth order, $X^2(10)=10.060$, $p=0.435$, thus failed to reject the null hypothesis. This infers that regardless of sex, whom the child live with, number of siblings and birth order has no direct effect to the pupils' learning performance as to socio-emotional development.

Self-regulation and socio-emotional behavior appear to work in concert to predict academic success. As children learn to identify how they feel and describe feelings of emotions, behavioral regulation emerges. Prior research has found that children who are more socially and emotionally able in preschool are likely to enjoy success in academic and social areas in the future (Landry & Smith, 2017). Children who lack social-emotional competence in preschool are more likely to experience transition problems into kindergarten, be unprepared academically, manifest a number of social and behavioral problems in grade school, and exhibit long-term problems academically and socially (Bornstein, Hahn, & Haynes, 2018).

Table 4.3 Test of Relationship Between the Respondents' Profile and Learning Performance As to Language, Literacy and Communication

Profile	X ²	df	p-value	Interpretation	Decision
Sex	2.818	2	0.244	Not Significant	Do Not Reject H ₀
Age	14.459	4	0.006	Significant	Reject H ₀
Whom the Child Live With	6.476	8	0.594	Not Significant	Do Not Reject H ₀
Number of Siblings	14.366	8	0.073	Not Significant	Do Not Reject H ₀
Birth Order	16.833	10	0.078	Not Significant	Do Not Reject H ₀
Parent/Guardian Educational Attainment	19.162	6	0.004	Significant	Reject H ₀

*Correlation is significant at 0.05 (2-tailed)

Table 4.3 presents the test of relationship between the pupils' learning performance as to language, literacy and communication and their profile in terms of sex, age, whom they live with, number of siblings, birth order, and the educational attainment of their parent or guardian. The results shown that there is a sufficient evidence of a significant relationship between the pupils' learning performance as to language, literacy and communication and their profile in terms of age, $X^2(4)=14.459$, $p=0.006$, and the educational attainment of their parent or guardian, $X^2(6)=19.162$, $p=0.004$, thus the null hypothesis is rejected. This suggests that age and parent/ guardian's educational attainment is a vital role to achieve better learning performance of the pupils. Thus, the older learner and educated parent/ guardian can help the pupils develop learning performance as to language, literacy and communication.

However, there is no significant relationship between the pupils' language, literacy and communication and their profile in terms of sex, $X^2(2)=2.818$, $p=0.244$, whom they live with, $X^2(8)=6.476$, $p=0.594$, number of siblings, $X^2(8)=14.366$, $p=0.073$, and birth order, $X^2(10)=16.833$, $p=0.078$, thus failed to reject the null hypothesis. This deduces that the above mention profile has no bearing in developing pupils' language, literacy and communication.

Piaget (1936) argued that children participate actively in the learning process, acting as mini scientists conducting experiments, drawing conclusions, and acquiring well about environment. Kids constantly introduce new information; build on current understanding, and change previously held concepts to incorporate relevant info as they communicate with other people around them.

The Sociocultural Cognitive Theory of Lev Vygotsky (1978), which believes that learning, occurred through interactions with others in our communities: peers, adults, teachers, and other mentors.

Table 4.4 displays the test of relationship between the pupils' learning performance as to understanding physical and natural environment and their profile in terms of sex, age, whom they live with,

number of siblings, birth order, and the educational attainment of their parent or guardian. The results exposed that there is a sufficient evidence of a significant relationship between the pupils' learning performance as to socio-emotional development and their profile in terms of age, $X^2(4)=11.243$, $p=0.024$, and the educational attainment of their parent or guardian, $X^2(6)=13.219$, $p=0.040$, thus the null hypothesis is rejected. This indicates that age and parent/ guardian's educational attainment can help obtain better learning performance of the pupils. Thus, as the learner matures and having knowledgeable parent/ guardian can help the pupils develop learning performance as to understanding physical and natural environment.

Table 4.4 Test of Relationship Between the Respondents' Profile and Learning Performance As to Understanding Physical and Natural Environment
N = 200

Profile	X ²	df	p-value	Interpretation	Decision
Sex	3.705	2	0.157	Not Significant	Do Not Reject H ₀
Age	11.243	4	0.024	Significant	Reject H ₀
Whom the Child Live With	3.832	8	0.872	Not Significant	Do Not Reject H ₀
Number of Siblings	6.907	8	0.547	Not Significant	Do Not Reject H ₀
Birth Order	13.546	10	0.195	Not Significant	Do Not Reject H ₀
Parent/Guardian Educational Attainment	13.219	6	0.040	Significant	Reject H ₀

*Correlation is significant at 0.05 (2-tailed)

However, there is no significant relationship between the pupils' learning performance as to understanding physical and natural environment and their profile in terms of sex, $X^2(2)=3.705$, $p=0.157$, whom they live with, $X^2(8)=3.832$, $p=0.872$, number of siblings, $X^2(8)=6.907$, $p=0.547$, and birth order, $X^2(10)=13.546$, $p=0.195$, thus failed to reject the null hypothesis. This depicts that the above stated profiles has no impact on the pupils' learning performance.

Vygotsky (1978) sought to understand how people learned in a social environment and created a unique social learning theory. He determined that teachers, including activities, attitudes, and reactions, influence several variables in an instructional setting. As a result, to foster cognitive learning, he promoted more engaging practices, such as fruitful conversations, positive feedback, and communication with others. Vygotsky also said that society was a vital determinant of the development of intelligence. He argued that children learn from their culture's perceptions and practices (Kurt, 2020).

Table 5 illustrates the test of relationship between the pupils' learning attitude and learning performance as to health, well-being and motor development, socio-emotional development, language, literacy and communication, and understanding the physical and natural environment. The result depicted that there is a significant relationship between the pupils' learning attitude and learning performance as to health, well-being and motor development, $X^2(6)=16.230$, $p=0.013$, socio-emotional development, $X^2(6)=43.346$, $p<.001$, language, literacy and communication, $X^2(6)=40.609$, $p<.001$, and understanding the physical and natural environment, $X^2(6)=24.607$, $p<.001$, thus the null hypothesis is rejected. This signifies that pupils' performance depends on the learner's attitude as to how they react, feel and think on the learning process.

Table 5 Test of Relationship Between the Pupils' Learning Attitude and Performance

Learning Domains	X ²	df	p-value	Interpretation	Decision
Domain 1: Health, Well-Being and Motor Development	16.230	6	0.013	Significant	Reject H ₀
Domain 2: Socio-Emotional Development	43.346	6	<.001	Significant	Reject H ₀
Domain 3: Language, Literacy and Communication	40.609	6	<.001	Significant	Reject H ₀
Domain 4: Understanding the Physical and Natural Environment	24.607	6	<.001	Significant	Reject H ₀

*Correlation is significant at 0.05 (2-tailed)

The study of kindergarten children's play experiences and intellectual development (Salinas, Rosaroso, & Tubiano, 2011) looked into how instructors used games and activities, whether play experience operated, and how it aided understanding. Findings revealed that the most frequent play experience was active play, problem-solving, using imagination were most developed cognitive skills, functional, con-

structive, and dramatic plays had a significant relationship to problem-solving and mental planning. The findings indicated a need for younger children to have personal experience with multiple types of toys to improve cognitive skills.

Table 6 Test of Relationship Between the Pupils’ Learning Performance and Behavior

Pupils’ Learning Performance and..	X ²	df	p-value	Interpretation	Decision
Domain 1: Health, Well-Being and Motor Development	39.950	6	<.001	Significant	Reject H ₀
Domain 2: Socio-Emotional Development	58.387	6	<.001	Significant	Reject H ₀
Domain 3: Language, Literacy and Communication	56.491	6	<.001	Significant	Reject H ₀
Domain 4: Understanding the Physical and Natural Environment	52.306	6	<.001	Significant	Reject H ₀

*Correlation is significant at 0.05 (2-tailed)

Table 6 shows the test of relationship between the pupils’ learning behavior and learning performance as to health, well-being and motor development, socio-emotional development, language, literacy and communication, and understanding the physical and natural environment. The result depicted that there is a significant relationship between the pupils’ learning attitude and learning performance as to health, well-being and motor development, $X^2(6)=39.950$, $p<.001$, socio-emotional development, $X^2(6)=58.387$, $p<.001$, language, literacy and communication, $X^2(6)=56.491$, $p<.001$, and understanding the physical and natural environment, $X^2(6)52.306$, $p<.001$, thus the null hypothesis is rejected. This connotes that pupils’ learning behavior significantly help increase learning performance.

Behavioral regulation requires children to integrate multiple component skills and form behavioral responses, such as remembering a classroom rule to raise their hand before participating, (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2018). Learning behavior is associated with maternal age, parental education, socioeconomic level of parents and consanguineous marriages according to Demirci (2015). This emphasized the influence of parents to the learning behavior and outcome of children. The way how parents interact with each other at home is usually how children behave in school.

CONCLUSIONS

This study concludes that the profile of the pupils has no effect to their performance as to health, well-being and motor development, and has no bearing in developing pupils’ language, literacy and communication. However, the pupils’ age and parent/ guardian’s educational attainment is an important factor to achieve better learning performance of the learners. Further, pupils’ performance depends on the learner’s attitude as to how they react, feel and think on the learning process, and the pupils’ learning behavior significantly helps increase learning performance.

REFERENCE LIST

- Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (2013). *First-grade classroom behavior: Its short- and long-term consequences for school performance*. *Child Development*, 64, 801-814.
- Blair, C. (2015). *School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children’s functioning at school entry*. *American Psychologist*, 57, 111-127.
- Berk, L., & Winsler, A. (1995). *Scaffolding children’s learning: Vygotsky and early childhood learning*. Washington, DC: National Association for Education of Young Children. Retrieved from <https://bit.ly/2Nn43cC>
- Bornstein, M. H., Hahn, C., & Haynes, O. M. (2018). *Social competence, externalizing and internalizing behavioral adjustment from early childhood through early adolescence: Developmental cascades*. *Development and Psychopathology*, 22, 717-735.
- Cherry, K. (2020). *The 4 stages of cognitive development background and key concepts of Piaget’s theory*. <https://bit.ly/2Z9GI0h>
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2018). *The impact of enhancing students’ social and emotional learning: A metaanalysis of school-based universal interventions*. *Child Development*, 82, 405-432

- Erainia, H. (2019). *When I think of child development*. <https://bit.ly/2Nt03qU> Great Essays. *Early Childhood Education*. <https://bit.ly/2ZEDMZS>
- Ipatenco, S. (2019). *Teaching methods used in a kindergarten classroom*. <https://bit.ly/2ZGjX45>
- Khasbani, I. (2018). *Revealing teachers' motivational strategy in Indonesian EFL classrooms*. *European Journal of English Language Teaching* ISSN: 2501-7136. Volume 3, Issue 4. <https://bit.ly/2LKP8b9>
- Kurt, S. (2020). *Lev Vygotsky – Sociocultural theory of cognitive development*. *educational technology*. <https://bit.ly/37zKbda>
- Landry, S. H., & Smith, K. E. (2017). *Early social and cognitive precursors and parental support for self-regulation and executive function: Relations from early childhood into adolescence*. New York: Oxford University Press.
- Llego, M.A. (2016). *Omnibus policy on kindergarten education*. <https://bit.ly/3qJul7f>
- Logue, M.E (2017). *Early childhood learning standards: Tools for promoting social and academic success in kindergarten*. *Children & Schools*, v29 n1 p35-43 2007. Retrieved from <https://bit.ly/3brmIMc> (accessed last 29 April 2018)
- McClelland, M. M., Connor, C. M., Jewkes, A. M., Cameron, C. E., Farris, C. L., & Morrison, F. J. (2017). *Links between behavioral regulation and preschoolers' literacy, vocabulary, and math skills*. *Developmental Psychology*, 42, 947-959. doi: 10.1037/0012-1649.43.4.947
- McLeod, S., (2016) *Albert Bandura's social learning theory* <https://www.simplypsychology.org/bandura.html>
- McLeod, S. (2019). *Bruner - Learning theory in education*. *simply psychology*. <https://bit.ly/3dA3wyw>
- McLeod, S., (2020) *Piaget's Theory and stages of cognitive development* <https://www.simplypsychology.org/piaget.html>
- Orchids International School (2020). *What are the 4 stages of cognitive development?*. Updated on 10 Jun 2020. <https://bit.ly/2MczUMm>
- Pachina, E. (2019). *Behavioral and cognitive development theory in teaching*. Blog. Alumni Experiences. *Teaching Ideas*. <https://bit.ly/3pI7CHK>
- Republic Act 8980: *Early Childhood Care and Development Act* <https://pcw.gov.ph/republic-act-8980-early-childhood-care-and-development-act/>
- Republic Act No. 10410 *An act recognizing the age from zero (0) to eight (8) years as the first crucial stage of educational development and strengthening the early childhood care and development system, appropriating funds therefor and for other purposes* <https://doh.gov.ph/node/4131>
- Republic Act 10157, or “*The Kindergarten Education Law*” <https://www.deped.gov.ph/k-to-12/about/k-to-12-basic-education-curriculum/kindergarten/>
- Salinas, M., Rosaroso, F. & Tubiano, Q. (2011). *Play experiences and cognitive development of the kinder pupils*. <https://bit.ly/3wWUMsQ>
- Shatla, M. M. (2020). *Prevalence and factors associated with developmental delays among preschool children in Saudi Arabia* *Journal of High Institute of Public Health* 50(1):10-17 DOI:10.21608/jhiph.2020.79318
- Vesely, C. K. (2018). *Low-income African and Latina immigrant mothers' selection of early childhood care and education (ECCE): Considering the complexity of cultural and structural influences*. *Early Childhood Research Quarterly*, 28(3), 470-486. <https://bit.ly/3mFiq8h>

SUCCESS COMPETENCIES OF SECONDARY SCHOOL HEADS BASED ON THE COMPETENCY FRAMEWORK FOR SOUTHEAST ASIA

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ABSTRACT

This study focused on the success competencies of secondary school heads based on the competency framework for Southeast Asia. It described the personal and professional profile of the public secondary school heads and assessed their success competencies in terms of personal excellence and stakeholder engagement. It also identified the challenges encountered and opportunities for school heads in developing success competencies. The descriptive method using questionnaire, interview, and focus group discussion was utilized to gather pertinent data and information from 123 school heads from the divisions of Batangas City and Batangas Province. Findings revealed that most of the school heads are thirty-four years old or younger, female, married, and have attained a master's degree. They attended fewer than four trainings and seminars related to personal excellence and stakeholder engagement. Most of them have served for four years or less and are inactive in socio-economic organizations. School heads were assessed as highly competent in personal excellence, and moderately competent in stakeholder engagement. No significant relationship was found between the respondents' profile variables and their level of success competencies. The respondents strongly agreed on the challenges associated with developing success competencies related to stakeholder engagement. They also strongly agreed that opportunities for developing success competencies in personal excellence will foster professional development and qualifications for job status advancement. A capability building plan was developed based on the key findings, which could be presented to authorities concerned for evaluation prior to adoption and implementation .

Keywords: Competency framework, Personal success, Secondary school heads, Stakeholder engagement, Success competencies

INTRODUCTION

The competence of school leaders contributes significantly to the success of educational institutions. As school leaders are expected to chart the path and inspire others to establish the strategy for accomplishing educational goals and objectives, their ability to lead will always be a determining factor in ensuring success (Arenga & Bantolo, 2021). Competent school leaders, result to competent schools and, predictably, to high-quality student learning outcomes. With this immense responsibility and with the widespread recognition that school leaders serve as learning leaders, it is critical to continually analyze and enhance their success competencies for high performance.

Success competencies articulate the role expectations for school heads and serve as a solid foundation for their professional development. These competencies are required skills, abilities, knowledge, behaviors, and characteristics that will enable schools to be operated effectively and ensure that standards of education are fulfilled. Since school heads' competencies and qualifications may influence per-

formance, it is essential for school leaders to identify and develop their success competencies (Peregrino, Caballes, Necio & Pasion, 2021).

The success competencies of school leaders guide their practice in setting directions that will be most productive and beneficial for learners especially with the shifting academic landscapes globally and continuous school reforms. These changes and reforms, which highlight political and economic development, have placed immense pressure on educators worldwide to address improvements in leadership and accountability measures to enhance teaching practices and student achievement. These shifts also resulted to a slew of challenges that require educational leaders to improve their competencies to meet the demands.

An article published by Australian Institute for Teaching and School Leadership Unlimited (2020) mentioned that school leaders have faced a variety of challenges, from rebuilding following environmental disasters to assisting communities in the aftermath of economic, social, and emotional loss. Throughout these challenging times, school leaders have provided clarity and direction, fostered resilience, and encouraged hope while remaining focused on the greatest possible outcomes for school communities.

Across the globe, evidence is accumulating on the vital role that leadership plays in guiding communities through the challenges and difficulties they faced. These challenges require school leaders to adapt and evolve at a faster pace than the schools themselves. To be successful in today's public schools, the principal must not only manage a complex human organization within the fast changing dynamics of schools and society, but also be an effective leader in a range of areas (Wise, 2015). It is thus imperative for school leaders to be fully aware of their personal attributes, since these would inevitably affect their professional dealings and management of the school.

According to the study of Tang, Lin & Yiu (2016), providing leaders with the ability to identify and realize their best selves has been recognized as a potentially effective leader characteristic. Despite widespread interest in the relationship between experiential and cognitive minds and leadership performance, few empirical studies have examined how leaders' personal well-being and emotional health can be strengthened through context-specific analysis for the purpose of prioritizing training needs. Additional research should be conducted to aid in determining the relative weights of personal excellence mapping. Personal excellence competencies were discovered and found to be crucial for effective leadership development.

As regards the success competencies of school heads in nine Southeast Asian countries, Chao and Taa (2015) found more similarities than differences in terms of the abilities that high performing school heads display and implement in the workplace. Five success competencies were ranked by participants in order of importance, frequency of performance, and quantity of training required for school heads: Strategic Thinking and Innovation; Managerial Leadership; Instructional Leadership; Personal Excellence; and Stakeholder Engagement.

The most noticeable similarity was the apparent emphasis on the school heads' ability to exhibit excellent personal characteristics and in the capacity to establish good relationships. This revealed that among the five success competencies personal excellence and stakeholder engagement though were deemed important. To enhance those competencies a series of trainings and capability building plan need to be provided.

Additionally, stakeholder engagement is a critical competency that is also important because of the participation of stakeholders in decision-making processes. Stakeholders share the responsibility in reacting promptly to changing conditions and uncertainties concerning the school community. School heads need active stakeholder participation as they steer their schools through the challenges brought by these changes.

With the attention shifting to success competencies and challenges in school leadership in mind, a competency framework based on a certain standard should be considered to properly gauge success competencies, thus providing a basis for calibrating and developing a strategy for improvement and development (Ramos & Bersamin, 2021). A competency framework can be viewed as an excellent instrument for identifying, developing, and managing work performance successfully.

This highlights the need for school leaders to possess standardized characteristics based on their character, capacity, and skills in order to aid in determining their level of success and qualifying their performance in educational institutions. With the plethora of academic and administrative issues con-

fronting school leaders not only locally but globally, competency frameworks serve as guide in guaranteeing success in meeting the demands of school leadership.

Around the world, various international educational systems have devised competency frameworks that serve as model and standards for school heads. Today, there are widespread professional standards and competency frameworks for school leaders but are expressed in different degrees in terms of details on functional (or occupational) and personal competencies, as well as in the evidence needed in demonstrating them at various levels. The Organization for Economic Cooperation and Development (OECD), the international organization that works to build better policies for better lives, published a report on teacher and leadership development for the 21st century. It provided examples from Austria, Ontario, and England of how school leadership has been defined and how it follows national standards for competence and qualifications (Schleicher, 2012).

Likewise, the Association for Supervision and Curriculum Development (ASCD), the global leader in providing expert and innovative solutions in professional development, capacity building, and educational leadership, also came up with the Global Competencies for Educational Leaders Framework to respond to the need for educational leaders to receive guidance and professional learning on what it takes to lead global learning in their schools. This framework helps educational leaders cultivate global competence in educational leadership (Tichnor-Wagner & Manise, 2019).

In Southeast Asia, the Southeast Asian Minister of Education, Organization, Innovation, and Technology (SEAMEO-INNOTECH), in collaboration with regional departments and ministries, developed a competency framework that matches Southeast Asia's specific contextual circumstances. This competency framework was developed in response to the call to develop school heads who are capable of leading and managing schools competently and successfully in the context of the region's educational reforms. SEAMEO-INNOTECH recognized member countries' existing national competency criteria, and they developed a competency framework that supports rather than replaces these current requirements. (SEAMEO-INNOTECH, 2015).

The Philippines' Department of Education (DepEd), in keeping with its commitment to assisting school heads in performing their roles more effectively, issued DepEd Order No. 024 series of 2020 or the National Adoption and Implementation of the Philippine Professional Standards for School Heads (PPSSH). This policy formalizes the PPSSH as a public declaration of professional responsibility for school leaders to reflect on and review their own practice as they strive for and pursue professional development. It assists school leaders in actively embracing a sustained endeavor to achieve high levels of performance.

As part of this endeavor, the Philippines joined the Organization for Economic Co-operation and Development's (OECD) Program for International Student Assessment (PISA) in 2018 as part of a quality basic education reform strategy and a move toward globalizing Philippine basic education. The Philippines scored last place out of the 79 countries that participated. This alarming result indicates the need to reevaluate school leaders' competencies as a key enabler of high student achievement.

Confronted with this challenge and with the increased demand for globalization and regional citizenship in education, a national educational system like the Philippines', should have school heads who possess competencies that are comparable to and meet the standards of Southeast Asia. The Competency Framework for Southeast Asian School Heads can serve as a starting point for assessing the school heads' level of competency. This focuses on five critical success competencies for school leaders: strategic planning and innovation, management leadership, instructional leadership, personal excellence, and stakeholder engagement. This framework will help in determining how school leaders can enhance and maximize their potentials for effective administration the benefit of the educational system.

With the aid of a competency framework and prompted by the realization on the challenges, and struggles faced by school leaders, this study sought to evaluate their success competencies and identify these challenges that confront them. Although the room for development and improvements is almost unlimited for school heads, it entails research-based and needs-driven approach to program development to ensure that specific competencies are targeted and achieved efficiently and effectively.

The researcher advocated and desired to provide an empirical data and information that would assist school heads, both experts and novice, in assessing and understanding their level of competencies with emphasis on personal excellence and stakeholder engagement and what personal actions can be taken based on this information. Moreover, the researcher sought to provide data-driven insights that would serve as basis for government institutions, and perhaps even the private institutions in the development

of capability building programs and plans for school heads for their professional growth and high performance.

OBJECTIVES

1. Determine the personal and professional profile of secondary school heads in Batangas City and Batangas Province in terms of age, sex, marital status, highest educational attainment, trainings attended, number of years as school head, membership in socio-economic organization.
2. Assess the level of success competencies of school heads based on personal excellence and stakeholder engagement.
3. Relate the assessments on the level of success competencies of school heads to their profile variables.
4. Identify the challenges and opportunities for developing success competencies.
5. Propose a capability building plan.

METHODOLOGY

A researcher-made questionnaire was used as the primary tool for gathering quantitative data. The results were complemented by qualitative information derived from an interview and focus group discussion. These data gathering techniques sufficed in substantiating the study and achieving its objectives.

The subjects of the study were the public secondary school heads in the divisions of Batangas City and Batangas Province Batangas during the school year 2021-2022. The sample size of the respondents was determined from the total population of school heads, using the Raosoft sample size calculator with margin of error of 3.8%. The total population of school heads is 149 and the minimum recommended sample size is 123. The actual respondents of the study were school heads from 149 schools in the two divisions of Batangas.

FINDINGS

1. Personal and Professional Profile of School Heads. The study described the public secondary school heads in terms of age, sex, marital status, highest educational attainment, trainings attended, number of years as school head, and membership in socioeconomic organizations. The researcher considered these personal and professional characteristics because these may influence their success competencies in terms of personal excellence, and stakeholder engagement and in facing challenges and maximizing opportunities.

1.1 Age. The age distribution of respondents is shown in Figure 1. Data from the figure shows that the most number of respondents are thirty-four years old and younger. The least number of school heads respondents are forty to forty-four years old. By examining the distribution of respondents by age, it can be said that the data are closely distributed.

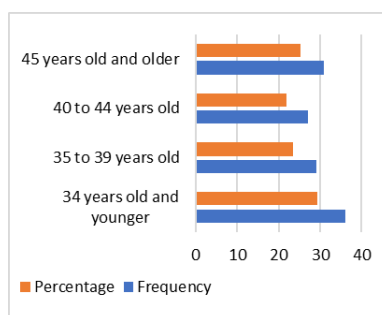


Figure 1. Profile of School Heads in Terms of Age

1.2. Sex. Figure 2 shows the distribution of the respondents' sex. Data reveals that majority of the respondents are female, manifesting female-dominated school leadership in the two divisions covered in this study.

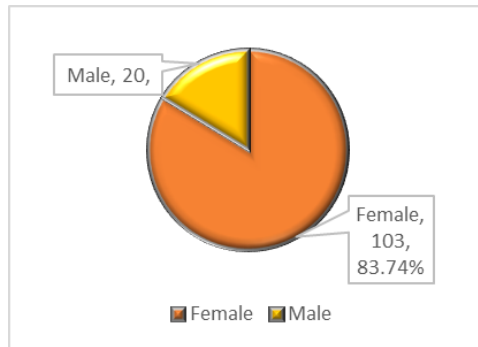


Figure 2. Profile of School Heads in Terms of Sex

1.3. Marital Status. The details of the marital status of the respondents are presented in Figure 3. The data clearly shows that majority of the school heads are predominantly married and very few are either single or widowed.

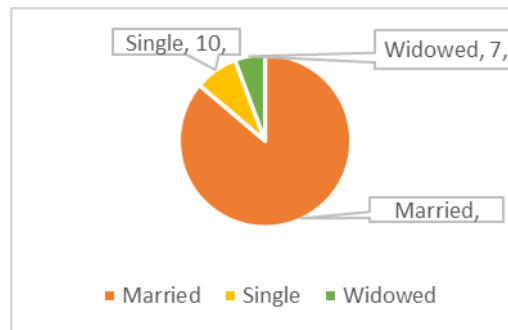


Figure 3. Profile of School Heads in Terms of Marital Status

1.4. Highest Educational Attainment. Figure 4 reveals that most respondents have attained a master's degree followed by those who completed a doctorate degree. This implies that majority of school heads have engaged in professional advancement through post graduate studies.



Figure 4. Profile of School Heads in Terms of Educational Attainment

1.5. Number of Trainings Attended. Figure 5 presents the data regarding the number of trainings and seminars attended by school heads. The data reveals an interesting pattern: a significant proportion of school heads have participated in four or fewer relevant trainings, and this number is nearly equiva-

lent to those who have attended ten or more trainings. This observation suggests a relatively even distribution among the school heads in terms of training attendance, focusing specifically on seminars related to personal excellence and stakeholder engagement.

The findings imply that while some school heads have accumulated extensive training experiences, a substantial number of their peers have had limited exposure to relevant professional development opportunities. This indicates a need for more equitable access to training and seminars to ensure that all school heads can enhance their competencies in areas crucial to personal excellence and stakeholder engagement.

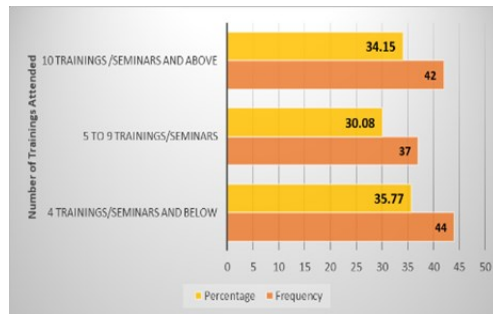


Figure 5. Profile of School Heads in Terms of Number of Training and Seminars Attended Related to Personal Excellence and Stakeholder Engagements Attended as School Head

1.6. Number of Years as School Head. As can be gleaned in Figure 6, the number of years as school head is normally distributed from the ranges of 4 years or less, 5-9 years, 10-14 years, and 15 years or more. The data indicates that more than half of the school heads have served for less than 10 years, suggesting a predominantly young leadership among schools in terms of administrative experience.

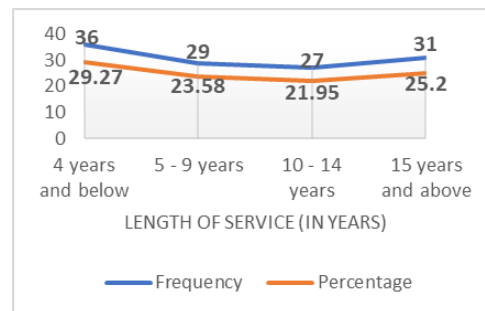


Figure 6. Profile of Respondents in Terms of Number of Years as School Head

1.7. Membership in Socio-economic Organizations. As presented in Figure 7, a significant majority of school heads are inactive in socio-economic organizations. Among those who are active mostly participated in socio-economic organizations like Save the Children, Girl Scout of the Philippines, Boy Scout of the Philippines, Sagip Kasapi Foundation, World Vision Partners, and others.

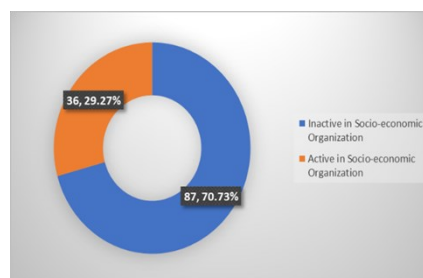


Figure 7. Profile of School Heads in Terms of Status of Activity in Membership in Socio Economic Organization

2. Level of Competencies of School Heads based on Personal Excellence and Stakeholders Engagement. The study assessed the level of competencies of school heads based on personal excellence and stakeholder engagement. These competencies are two of the five competencies of the Southeast Asian Framework designed to assess the success competencies of school heads.

Level of Competencies of School Heads based on Personal Excellence. School heads generally assessed themselves to be highly competent in most areas of managing personal effectiveness, like demonstrating transparency and accountability, modeling professionalism and moral leadership and leading by example and taking pride in one’s profession.

An interview discloses the need for heads to manage their time well due to the plethora of simultaneous tasks that demand time, energy, and attention. This explains their inability to practice a balanced, healthy lifestyle. They are also moderately competent in exhibiting enterprising attitude and advocating ASEAN values and perspectives.

As shown in Table 1, majority of the respondents are highly competent as regards to their success competency in terms of personal excellence as school heads. Information gathered from an interview with a district supervisor confirmed that most school heads can be observed with high competency in personal excellence.

Table 1 – Level of Competencies of School Heads Based on Personal Excellence Competency Domain

General Competency	Enabling Competency	Mean	Verbal Interpretation
1. Managing Personal Effectiveness	1.1. Lead by Example	3.62	HC
	1.2. Demonstrate transparency and accountability	3.84	HC
	1.3. Practice a balanced, healthy lifestyle	3.34	MC
	1.4. Take pride in one’s profession	3.59	HC
	1.5. Deliver results	3.54	HC
2. Acting on challenges and Responsibilities	2.1 Manage priorities	3.49	MC
	2.2. Exhibit decisiveness	3.45	MC
	2.3. Exhibit enterprising Attitude	3.40	MC
3. Pursuing continuous professional development	3.1. Take responsibility for one’s own lifelong learning	3.56	HC
	3.2. Advocate ASEAN values and perspectives	3.40	MC
Composite Mean		3.52	HC

Legend : NC – Least Competent “I cannot do this yet, SC – Slightly Competent “I have started to do this but I need to learn more”, MC – Moderately Competent “I can do this very well.”, HC – Highly Competent “I can do this with confidence and teach others.”
 Mean Scale Range : 3.50-4.00 HC- Highly Competent, 2.50-3.49 MC-Moderately Competent, 1.50-2.49, SC – Slightly Competent, 1.00-1.49 LC - Least Competent

Table 2 highlights that most school heads assessed themselves as moderately competent in success competency regarding stakeholder engagement. This moderate competency is particularly evident in sustaining collaborative relationships with stakeholders specifically in supporting community-based programs and projects. They are also moderately competent in managing education alliances and networks like promoting consensus building, facilitating community partnerships and activities, communicating effectively with different stakeholders and managing conflicts and practicing negotiation skills. The focus group discussion with school heads further validated this finding. However, it is important to acknowledge that there is room for improvement in this aspect of leadership.

Enhancing stakeholder engagement skills is crucial for school heads to strengthen collaborative relationships and create a supportive environment for community-based initiatives. Additionally, improving their abilities in managing education alliances and networks, including facilitating partnerships and promoting consensus building, can lead to more effective decision-making processes. Recognizing the need for improvement is the first step towards enhancing leadership effectiveness. By investing in targeted professional development programs and training opportunities, school heads can develop their competencies in stakeholder engagement, ultimately driving more successful and impactful initiatives within the school community.

Table 2 – Level of Competencies of School Heads Based on Stakeholder Engagement Competency Domain

General Competency	Enabling Competency	Mean	Verbal Interpretation
1. Promoting shared responsibility for school improvement	1.1. Build trust and lead teams/communities for school improvement	3.53	HC
	1.2. Empower the community to work for enhancement of school performance	3.50	HC
2. Managing education alliances and networks	2.1. Communicate effectively with different stakeholders	3.49	MC
	2.2. Facilitate school community partnerships and activities	3.48	MC
	2.3. Promote consensus building	3.46	MC
	2.4. Manage conflict and practice negotiation skills	3.49	MC
3. Sustaining collaborative relationships with stakeholders	3.1. Support community- based programs and projects	3.20	MC
	3.2. Communicate school performance to stakeholders	3.74	HC
Composite Mean		3.49	MC

Legend: NC – Least Competent “I cannot do this yet, SC – Slightly Competent “I have started to do this but I need to learn more”,
 MC – Moderately Competent “I can do this very well.”, HC – Highly Competent “I can do this with confidence and teach others.”
 Mean Scale Range: 3.50-4.00 HC- Highly Competent, 2.50-3.49 MC-Moderately Competent,
 1.50-2.49, SC – Slightly Competent, 1.00-1.49 LC - Least Competent

2. Relationship of the Respondents’ Profile Variables and their Level of Success Competencies.

A chi-square test of independence was performed to examine the relationship between the respondents’ level of success competencies based on personal excellence and their profile variables and stakeholder engagement and their profile variables. Results are presented on Table 3 and Table 4.

Table 3: Relationship Between Respondents’ Level of Success Competencies Based on Personal Excellence and Their Profile Variable

Profile	χ^2 - value	df	p-value	Decision on Ho	Interpretation
1. Age	8.983	6	0.1746	Failed to Reject	Not Significant
2. Sex	2.353	2	0.3083	Failed to Reject	Not Significant
3. Marital Status	1.181	4	0.8812	Failed to Reject	Not Significant
4. Highest Educational Attainment	7.388	4	0.1168	Failed to Reject	Not Significant
5. Number of Trainings Attended	1.744	4	0.7827	Failed to Reject	Not Significant
6. Length of Service as School Head	8.983	6	0.1746	Failed to Reject	Not Significant
7. Membership in Socio-economic Organization	0.425	2	0.8087	Failed to Reject	Not Significant

Table 4 : Relationship Between Respondents’ Level of Success Competencies Based on Stakeholders Engagement and Their Profile Variable

Profile	χ^2 - value	df	p-value	Decision on Ho	Interpretation
1. Age	3.782	6	0.7062	Failed to Reject	Not Significant
2. Sex	1.431	2	0.4889	Failed to Reject	Not Significant
3. Marital Status	1.627	4	0.8039	Failed to Reject	Not Significant
4. Highest Educational Attainment	3.015	4	0.5553	Failed to Reject	Not Significant
5. Number of Trainings Attended	5.955	4	0.2025	Failed to Reject	Not Significant
6. Length of Service as School Head	2.515	6	0.8668	Failed to Reject	Not Significant
7. Membership in Socio-economic Organization	3.193	2	0.2026	Failed to Reject	Not Significant

In terms of age, sex, marital status, highest educational attainment, number of trainings attended, length of service as school head, and membership in socio-economic organization, it can be gleaned from the table 3 and 4 that the computed χ^2 value; and p value show no significant relationship. These

results indicate that the respondents' profile variables do not relate to their level of success of competencies based on personal excellence and stakeholder engagement.

4. Challenges and Opportunities for Developing Success Competencies. Since challenges are inevitably faced by school heads in developing their success competencies, and since opportunities that await them are expected, it is necessary to identify which among these are strongly agreed to by school heads. Such identification will aid in determining the focus of capability building plan and ensure major concerns for raising competency level are mindfully addressed.

The findings indicate that respondents strongly agreed on the challenges associated with developing success competencies related to stakeholder engagement, particularly in the dissemination of information and reports for collaboration and transparency, as well as negotiation for school improvement sustainability. Challenges in personal excellence in terms of personal effectiveness in creating a safe, positive, and motivating learning environment, as well as leadership by example were also strongly agreed upon. Together with this is the need for emotional maturity in dealing with various school personalities, stress management and skills in handling and resolving internal and external conflicts.

A number of participants in the focus group discussion felt that some highly competent school heads will still find it hard to cope if the policies and system from some government agencies will not change. This is why they agreed that there is a need to strengthen the school heads' growth mindset and resilience. One discussant affirmed the need to take care of the psychological safety of the school heads, especially during challenging times.

Majority of the school heads strongly agreed on the enumerated opportunities available to them. Majority strongly agreed that success competencies in personal excellence open doors of opportunities for encouraging growth professionally, which may entail qualification for work status promotion. Success competencies in stakeholder engagement will build stronger partnerships with stakeholders, thus achieving maximum collaboration for school improvements and higher learning outcomes.

5. Proposed Capability Building Plan. The capability building plan developed by the researcher was based on the key findings of the study and the result of the interview and focus group discussion. It contains a set of endeavors and activities that are hoped to assist school heads in increasing their level of success competencies in personal excellence and stakeholder engagement. This plan focuses on major areas of encouraging growth mindset among school leaders. Branded as AIM, it is focused on intensifying Accountability among school heads, Intentional and Sustainable Stakeholder Engagement among Stakeholders and Mentoring for Success and Pace Setting.

CONCLUSIONS

1. Most of the school heads are thirty-four years old or younger, female, married, and have attained a master's degree. They attended less than four trainings and seminars related to personal excellence and stakeholder engagement, have served for four years or less and are inactive in socio-economic organizations.
2. School heads assessed themselves to be highly competent in most of the indicators of personal excellence and moderately competent in terms of stakeholder engagement.
3. The respondents' profile variables do not have relationship with their assessments on personal excellence and stakeholder engagement. The respondents strongly agreed on the challenges met in developing success competencies in areas of creating a safe, positive, and motivating learning environment as well as in disseminating information and reports for collaboration and transparency.
4. They also strongly agreed on the opportunities in encouraging professional growth and qualifications and building stronger partnerships with stakeholders. The proposed capability building plan, when utilized, may enhance the success competencies of school heads in terms of personal excellence and stakeholder engagement.

RECOMMENDATIONS

1. The proposed capability building plan may be presented to concerned authorities for evaluation and implementation.
2. A study that focuses on variables regarding more detailed enabling competencies of personal excellence and stakeholder engagement may be conducted.
3. Studies of the same nature may be conducted utilizing other sets of respondents like elementary school heads, school heads of integrated schools, and school heads of private basic education institutions.

ACKNOWLEDGEMENT

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REFERENCES

- Arenga, J., & Bantolo, K. (2021). School Heads' Competencies and School Performance. *Journal of Education and Human Development*, 10(1), 17–29.
- Chao, S., & Taa, D. (2015). Development of the Competency Framework for Southeast Asian School Heads (2014 Edition): A Journey into Excellent School Leadership. *Abac Odi Journal Vision Action. Outcome*. Volume 2(1), 7–38.
- DepEd Order No. 24 Series of 2020 (2020). National Adoption and Implementation of the Philippine Professional Standards for School Heads.
- Peregrino, L. P., Caballes, D. G., Necio, C. R., & Pasion, R. V. (2021). School Heads Competence and Qualifications: Their Influence on School Performance February.
- Ramos, R. P., & Bersamin, A. K. K. (2021). Creating a School Leadership Competency Framework: Setting the Standards for Exemplary Performance *Journal of Advances in Management Sciences*, 9 (3), 76–82 <https://doi.org/10.18178/joams.9.3.76-82>
- Schleicher, A. (2012). *Preparing Teachers and Developing School Leaders for the 21st Century: Lessons from Around the World* OECD Publishing.
- SEAMEO-INNOTECH. (2015). *Success Competencies of Southeast Asian School Heads*
- Tang, H. V., Yin, M., & Liu, Y. (2016). Modeling Personal Excellence Competencies for Junior High School Principals Based on the AHP Method July, 46–51.
- The Australian Institute for Teaching and School Leadership Unlimited (2020). *The Role of School Leadership in Challenging Times* Retrieved from <https://www.aitsl.edu.au/research/spotlights/the-role-of-school-leadership-in-challenging-times>
- Tichnor-Wagner, A., & Manise, J. (2019). *Globally Competent Educational Leadership: A Framework for Leading Schools in a Diverse, Interconnected World*. Retrieved from www.longviewfdn.org
- Wise, D. (2015). Emerging Challenges Facing School Principals *Journal of Educational and Social Research*, 5(2), 103–115

ACADEMIC ACHIEVEMENT AND CAREER PREFERENCE OF GRADE 10 STUDENTS OF SCIENCE TECHNOLOGY AND ENGINEERING

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ABSTRACT

The purpose of this study was to determine the academic achievement and career preference of grade 10 Science, Technology and Engineering (STE) students of Cotabato City National High School-Main Campus and Cotabato City National High School –Rojas of Cotabato City Division. Data were gathered by questionnaire method from 161 student– participants. Complete enumeration was done for the Science Technology Engineering participants; however, random sampling was used in selecting the student participants from the Enhanced Basic Education (Regular) student –participants. The study utilized descriptive statistics such as mean and standard deviation to describe the academic achievement of the participants in the Science and Technology Achievement Test. Independent sample t-test and Levene’s Test for equality of Variances were used to determine its significant relationship. Personal interviews were also conducted among the respondents to further validate their responses and substantiate the study findings. The findings are summarized as follows: 1. The Science Technology and Engineering (STE) – Special Science Curriculum students had an average mastery level in their Science and Technology Achievement Test. 2. The Enhanced Basic Education Curriculum (EBEC) –Regular students had below-average mastery levels. Specifically, among the four components of Science and Technology, students performed better in Biology followed by Earth and Space, Chemistry and Physics respectively. 3. There is a statistically significant difference in Science achievement between Enhanced Basic Education Curriculum and Science Technology Engineering students. 4. Majority of the Science Technology Engineering and Enhanced Basic Education Curriculum students –participants preferred Technical over Non-Technical Courses. 5. Science Technology Engineering and Enhanced Basic Education Curriculum students have the same course preference – Technical Courses. Finally, the present study concluded that Science and Technology Engineering students performed better than those in the Enhanced Basic Education Curriculum –Regular students. Most of the Science Technology Engineering and Enhanced Basic Education Curriculum student –participants preferred Technical Courses compared to Non-Technical Courses. However, these students of different curricula have the same career preference; nonetheless, there is a significant difference in their academic achievement.

Keywords: academic achievement; career preference; curriculum; Enhanced Basic Education Curriculum; interview; questionnaire method, Science Technology and Engineering

INTRODUCTION

The world is rapidly changing and “modern society expects everyone to be a high achiever” (Daulta, 2008). However, “success in any meaningful endeavor is marked by a history of high expectations that provide the challenge and inspiration necessary to press the individual to his/her highest level of performance” (Ozturk & Debelak, 2005)

In today’s technology-driven world, educational institutions continuously adapt to the change of technology and to the needs of society. The aim of education in any country mandates the kind of citizen educational institutions aims to produce.

In the Philippines, it was reported that there is a high demand for jobs waiting for graduates who would be pursuing careers related to science and technology but only above half of the demand was pro-

duced by graduates in these fields. The importance of developing scientific and technological competence as a means of attaining national development goals addresses the interests and demands of a growing need of the country.

The low performance of the Philippines in the Trends in Mathematics and Science Study (TIMSS) in 1999 and 2003 strengthened the need to attend to the problem in the development of student's performance in science and mathematics.

To address the need to develop science, mathematics, and technology performance of students, the Philippine government encourages school institutions to adopt science and mathematics curricula in response to Republic Act 7678 which states that "The state shall give priority to research and development, invention, innovation, and their utilization and to science and technology education, training and services".

Also to ensure that learners are qualified and truly deserving to be in the program, all prospective first year enrollees are required to undergo rigid screening and pass a DOST-prescribed selection test. The grade requirement of enrollees is 83% in English, Science, and Mathematics with a general average of 85%. Once in the program, it is imperative for a Special Science Class (SSC) student to maintain a grade not lower than 80% in any subject area and a general average of 85%.

The Special Science Classes (SSC) are under the BEC-based Science, Math, and Research-oriented curriculum. ESEP scholars who attended the Certificate/Diploma Program and other training programs are assigned to teach advanced science and mathematics subjects like Earth Science, Advanced Biology, Advanced Chemistry, and Calculus.

In cognizant of scientific and technological challenges of the future, Computer Education and Research are offered to special science classes. At the end of their third year, students are required to turn in an experimental thesis duly approved by a designated research panel. For fourth year students, a second thesis should be submitted as a requirement for graduation.

Intensive training via enriched materials, maximum utilization of audio-visual gadgets and laboratory equipment plus unlimited exposure to science-related activities best describe the Special Science Classes.

In the Philippines, there are six types of schools with special science and mathematics curriculum. These are the schools that use the Philippine Science High School System, the Regional Science High Schools, Science and Technology Oriented High Schools, University Rural High Schools/Laboratory Schools, and other Public Science High Schools and private schools with science and mathematics curricula. The University of Rizal System Laboratory high school is one of the university laboratory schools that responded to the call to address the need to augment the need of high school graduates who will be inclined to take science and mathematics courses. The curriculum includes a regular secondary curriculum but with additional science, mathematics, and technology subjects, elective subjects, and research subjects.

With this, it prompted the researcher to determine the Academic Achievement and Career Preference of Grade 10 students of Science, Technology, and Engineering (STE) of the two secondary schools in the Cotabato City Division - Cotabato City National High School (CCNHS)-Main Campus and Cotabato City National High School – Rojas.

Statement of the Problem

Generally, this study was conducted to determine the academic achievement and career preference of grade 10 Science, Technology, and Engineering (STE) students of Cotabato City National High School-Main Campus and Cotabato City National High School -Rojas Site.

Specifically, this study sought to answer the following research questions:

1. What is the student's achievement in Science Technology and Engineering (STE) and the Enhanced Basic Education Curriculum (K-12) in their Science Achievement Test?
2. Is there a significant difference in the academic achievement in Science between the two groups of Grade 10 students of different curricula?
3. What is the student's career preference in the future?
4. What is the implication of academic achievement to their career preference?

METHODOLOGY

The study was a descriptive type. It described the students' achievement in science achievement tests of the grade 10 students who were in two different curricular programs. The students' career preference for the future was also identified. This is a self-assessment of students themselves on what they would like to become in the future.

Both qualitative and quantitative data were considered in the study. All the data were used to determine the Academic Achievement and Career Preference of Science Technology and Engineering students of Cotabato City National High School-Main Campus –Junior High School department and Cotabato City National High School- Rojas.

The use of quantitative methodology in educational research is very useful when trying to determine whether or not the claim is true or false. Either as part of the larger project that employs many different methods or as basis for a complete piece of work, the stronger the research evidence is, the more certain it can be that the knowledge claim is accurate (Cresswel, 2002, Field, 2009).

To establish the content validity and reliability of the questionnaire used for the study, this was pre-tested on five respondents who belonged to the targeted population. However, during the final administration of the test, they were not included as respondents of the study. This was done after the experts corrected the contents of the test questionnaire so that content validity was checked as well. Item–total correlation analysis was used to determine which of the items were retained, improved, and even discarded. Except for the five (5) items of the test questionnaire which were improved, the rest of the items were retained. The reliability of the instrument was determined using the test-retest method.

Personal interviews were also conducted among the respondents to further validate their responses and substantiate the study findings.

FINDINGS

This chapter of the research paper covers the presentation of the data gathered, their analyses, and their interpretation. It discusses the study results supplying answers to the specific questions found in the statement of the problem.

Science Technology Engineering (STE) Students' Achievement in Science

Academic achievement was the criteria for assessing their learning outcomes. Academic Achievement was the main focus of the educative process to improve the learning and performance of the students. It is the process of measuring the behavioral change of the students at the end of any instruction. This parameter categorized the students as slow, average, above average and fast learners.

Table 1 presents the Science Technology and Engineering students' achievement in Science and Technology Achievement Test. The data shows that the mean of the Science Achievement Test is 80.02. It reveals that the STE students' performance in the achievement test is of average mastery level.

Furthermore, the data shows the mean of the four components of science subjects: Earth and Space 79.98, Physics 79.98, Biology 86.03, and Chemistry 78.33 respectively. As shown in its mean, among the four components, students got the highest achievement in Biology with the descriptive equivalent of above average and the lowest achievement Physics component which has the descriptive equivalent of slow. The result agrees with the findings of the study of Tubeza, (2009), which revealed that Filipino students had a dismal performance in science for the last nine decades. Also according to Carido & Bautista, (2000), in the International Science Study, Filipinos were stuck at the bottom in 1984 and 1994, performed poorly in the 1996 Third International Mathematics and Science Survey (TIMSS) (Tenizo, 2002), and in the 1998 International Assessment of Educational Achievement (Navarra, 1997). Nationally, they showed poor mastery in science as evidenced by the results of the 2003 to 2009 National Achievement Tests (Imam, 2010).

STE Students' Achievement in Science

	n	Mean	Std dev
Science Ach	61	80.02	3.71
E&S Ach		79.98	4.18
Phys Ach		75.79	5.36
Bio Ach		86.03	6.63
Chem Ach		78.33	4.84

Legend:

Fast	92 and above
Above Average	84-91
Average	76-83
Slow	74 and below

Range of Scores of STE's Achievement Test Result

Table 2, shows the range of scores of STE students, it reveals that in Biology the students had the highest transmuted grade 95 and its lowest transmuted grade is 71. It is followed by Earth and Space which has 89 as its highest transmuted grade and 71 as its lowest. Then in Chemistry, the highest transmuted grade is 87 and the lowest is 68, while Physics is the lowest among the four components, with 87 as the highest and 63 as the lowest. Over all, the Science Achievement Test shows that among the 61 respondents who took the test, the highest transmuted grade is 85 while 71 is the lowest.

Range of Scores of STE's Achievement Test in Science

	n	Transmuted Grade	
		Highest	Lowest
Science Ach	61	85	71
E&S Ach		89	71
Phys Ach		87	63
Bio Ach		95	71
Chem Ach		87	68

Enhanced Basic Education Curriculum (EBEC) Students' Achievement in Science

Shown table 3 is the Enhanced Basic Education students' achievement in the Science Achievement Test. The data reveals that with a sample population of 100, it earned a mean score of 74.33. It shows that the student's achievement in Science is below average level of mastery.

Additionally, among its four components, the results show that in Biology, the students earned a mean score of 79.08, it is followed by Earth and Space, with a mean score of 74.33, and then Chemistry with 73.72, and Physics which has a mean score of 70.27. The result further shows that among the four components, the students had the highest achievement in Biology while its lowest achievement is in Physics as reflected in its mean value above.

EBEC Students' Achievement in Science

	n	Mean	Std dev
Science Ach	100	74.33	4.06
E&S Ach		74.17	5.85
Phys Ach		70.27	4.01
Bio Ach		79.08	8.51
Chem Ach		73.72	4.75

Legend:

Fast	92 and above
Above Average	84-91
Average	76-83
Slow	74 and below

Range of Scores of EBEC's Achievement Test in Science

Table 4, shows the range of scores of EBEC's students, it reveals that in Biology the students had the highest transmuted grade 97 and its lowest transmuted grade is 63. It is followed by Earth and Space which has 87 as its highest transmuted grade and 63 as its lowest. Then in Chemistry, the highest transmuted grade is 84 and the lowest is 65, while Physics is the lowest among the four components, with 79 as the highest and 60 as the lowest. For it's over all result, the data shows that among the 100 respondents who took the test, the highest transmuted grade earned is 84 while 67 is the lowest.

Range of Scores of EBEC's Achievement Test in Science

	n	Transmuted Grade	
		Highest	Lowest
Science Ach	100	84	67
E&S Ach		87	63
Phys Ach		79	60
Bio Ach		97	73

Difference between EBEC and STE in terms of Science Achievement

Table 5 shows the difference between EBEC and STE in terms of Science Achievement. The mean of EBEC is 74.33 and STE 80.02. This mean leads to SD of EBEC and STE program 4.060 and 3.713 respectively. The Group Statistics Table shows that the mean of the STE students is higher, therefore it can be concluded that the achievement in Science of STE students is significantly higher than the EBEC students.

Table 5 Difference between EBEC and STE in terms of Science Achievement

	Program	N	Mean	Std. Deviation	Std. Error Mean
SciAch	EBEC	100	74.33	4.060	.406
	STE	61	80.02	3.713	.475

Difference between EBEC and STE in terms of Science Achievement

Table 6 shows the Levene's Test for equality of Variances. It is used to determine which between equal variances assumed or equal variances not assumed results are to be used. The result shows that the significant column is greater than .05, which means that the variability in the two conditions is about the same. The t-value is -8.90 and the significant 2-tailed, which is .00, revealed that there is a significant difference in the mean between the two groups. The significant 2-tailed value in the result is .00, which is less than .05. Therefore, the researcher concludes that there is a statistically significant difference in the Science achievement between Enhanced Basic Education Curriculum and Science Technology Engineering students.

Showing the difference EBEC and STE in term of Science Achievement

SciAch	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances Assumed	.453	.502	-8.900	159	.000	-5.686	.639	-6.948	-4.425
Equal variances not assumed			-9.096	135.711	.000	-5.686	.625	-6.923	-4.450

Distribution of Respondents by Career Preference

The data on the career preference of the respondents are presented in Table 7. and Table 8. The figures indicate that among the 61 population sample of the STE, 54 of them preferred Technical courses and only 9 among them preferred Non- Technical. On the other hand, the EBEC did have a population of 100. From the population sample 61 of them preferred Technical courses and about 39 respondents prefer the Non –Technical courses.

The data revealed that majority among the STE and EBEC students have preferred Technical courses compared to non-technical courses. This contradicts to the study of Manick et. al. (2010) that participants considered technical courses to be less creative and less people oriented than other popular career choices.

Distribution of Respondents by Career Preference

Curricular Program	n	Technical	Non-Technical
STE	61	54	9
EBEC	100	61	39
TOTAL	161	115	46

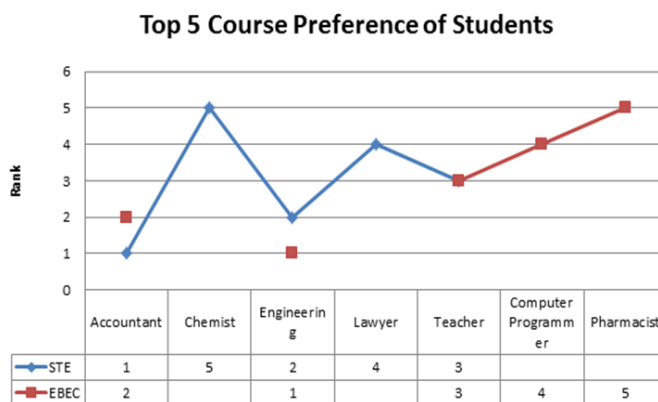
Frequency of Course Preferred by the Respondents

Course Preference	Frequency	Percentage
Technical	115	71.43
Non-Technical	46	28.57
TOTAL	161	100

Top five (5) Course Preference of Students

The graph shows the top five course preference of the respondents. Data shows that STE students have the following top five courses; accountant, engineering, teacher, lawyer and Chemist. For the EBEC students, they have engineering, accountant, teacher, computer programmer and pharmacist. It reveals that regardless of their curriculum, the respondents have the same course preference. All the course chosen to be a part of top five courses all belong to Technical courses. It supports the objective of the development of Science, and Technology and Engineering curriculum which is to produce graduates who will pursue science, mathematics and technology related courses who will augment the need for engineers and scientists in the country. Furthermore, six of the ten interviewed students mentioned that their exposure to problems in Mathematics that is related to engineering encouraged him/ her to take an engineering course.

Graph 1 Top 5 Course Preference of Students



The findings are summarized as follows:

1. The Science Technology and Engineering (STE) – Special Science Curriculum students had an average mastery level in their Science and Technology Achievement Test.
2. The Enhanced Basic Education Curriculum (EBEC) –Regular students had below average mastery level. Specifically, among the four components of Science and Technology, students performed better in Biology followed by Earth and Space, Chemistry and Physics respectively.
3. There is a statistically significant difference in the Science achievement between Enhanced Basic Education Curriculum and Science Technology Engineering students.

4. Majority among the Science Technology Engineering and Enhanced Basic Education Curriculum student –participants preferred Technical over Non- Technical Courses.
5. Science Technology Engineering and Enhanced Basic Education Curriculum students have the same course preference – Technical Courses.

CONCLUSION

The Science and Technology Engineering students performed better than those in the Enhanced Basic Education Curriculum –Regular students. Most of the Science Technology Engineering and Enhanced Basic Education Curriculum student –participants preferred Technical Courses compared to Non-Technical Courses. However, these students of different curricula have the same career preference; nonetheless, there is a significant difference in their academic achievement.

RECOMMENDATIONS

This study was able to elucidate the general status of the implementation of the two curricula Science Technology Engineering and Enhanced Basic Education Curriculum.

Furthermore, the following were strongly recommended:

1. Review the plan on admission strategies, academic objectives and programs of instruction toward better and more relevant provisions in relation to a new admission scheme.
2. The science curriculum implemented shall be reviewed by the curriculum designers to see to it that the four component of science are equally given emphasis.
3. Further study considering another predictor to assess the academic achievement of students be conducted.

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REFERENCES

Books

- Aquino, Gaudencio V. (2008) *Curriculum Innovation*. Mandaluyong, Philippines: National Book Store.
- Bauzon, Priscillano (2009) *Foundation of Curriculum Development and Management*. Mandaluyong, Philippines: National Bookstore. pp 60
- Calderon, J.F. & Gonzales, E. (1993). *Measurement and evaluation*. Manila: National Book Store.

Unpublished Theses

- Ali, N., Jussof, K., Ali, S., Mokhtar, N., Syafena, A. & Salamat, S. (2009), “The Factors Influencing Students’ Performance at Universiti Teknologi MARA Kedah, Malaysia. *Management Science and Engineering*,” vol. 3 (4), pp. 81-90.
- Bandura, A.(2001) *Social cognitive theory: An agentic perspective*. *Annual review of psychology*, 52, 1-26.
- Barnard, W.M. (2004) *Parent involvement in secondary schools and educational attainment*. *Children and Youth Services Review*, 26, 39-62.
- Carpenter, T.P., Franke, M.L. Jacobs, V.R., Fennema, E., & Empson, S.B. (1989) *A longitudinal study of invention and understanding in children’s multidigit addition and subtraction*. *Journal for research*

- in Mathematics Education, 29, 3-20
- Danao, Efren. Angara (2008) RP future in technology. Philippines: The Manila Times June 1, 2008
www.manilatimes.net. Retrieved: June 12, 2012.
- Daulta, M.S. (2008), "Impact of Home Environment on the Scholastic Achievement of Children," Journal of Human Ecology, vol. 23 (1), pp. 75-77.
- David, A. & Macayan, J. (2010, July) Assessing Teacher Performance. Retrieved October 23, 2011, from www.permea.club.officelive.com/Documents/AH_V3_A5.pdf
- Driscoll, M. P. (2005). Psychology of learning for instruction. 3rd Ed. Boston: Pearson Education Inc.
- Drori G.S. (2000) Science education and economic development: Trends, relationships, and research agenda, Studies in Science Education, (35) 27-58.
- Drucker P.F. (2002) Managing in the next society, New York: St.
- French, W. M. (1955). Education for all. New York, NY: The Odyssey Press. Gouco, Al. Mathematics Teacher. Vol. 88. 2005.(Cited Text: Gouco (2005))
- National Association of Secondary Schools Principals, (2009) (NASSP). Retrieved from www.nassp.org/content.aspx?topic=4702
- National Councils of teachers of Mathematics. Principles and standards for school Mathematics. (2000)
- National Association of Secondary Schools Principals, (2009) (NASSP).
- National Foundation (2010). Science and Engineering indicators. Washington, DC: Author
- Nathanap, G. (2007), "Gender Analysis of Academic Achievement among High School Students," Thesis submitted to the Department of Human Development, College of Rural Home Science, Dharwad University of Agricultural Sciences.
- Pascual, Nancy T. (2013) Impact of Mathematics and Science Instructional Practices, Curriculum and Academic Achievement to the Career Choice. Morong, Philippines.
- Staffon, E. (2011). Factors that influence participation of students in secondary science and mathematics in IB schools outside United States and Canada. (Doctoral dissertation)
- Sumida M. (2002) The Japanese model of human resource development through school science, Report on Science Education Research, Vol.7, No.1, 1-4.
- Tanner, D., & Tanner, L. (2007). *Curriculum development: Theory into practice*. Upper Saddle River, NJ: Pearson. The Glossary of education reforms, 2013
- Zeegers, P. 2004. Student learning in higher education: a path analysis of academic achievement in science. Higher Education Research & Development, 23, 1, 35-56.

WEBLIOGRAPHY

<http://edglossary.org/assessment>
www.nassp.org/content.aspx?topic=4702

