

Laro ng Lahi: A Study on the Perceived Benefits of Playing Indigenous Games on the Holistic Development of Filipinos Born in the '80s

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ABSTRACT

Philippine indigenous games were once a popular pastime for Filipino children. It kept them active, mentally stimulated, and it maximized the benefits of play across multiple developmental domains. However, the rise of digital technology has shifted Filipino children's interests from active Philippine indigenous games toward sedentary play on their electronic gadgets, exposing them to the risks of extended screen time and lack of physical activity. This study examined the benefits of playing Philippine indigenous games, as seen by Filipinos born in the 1980s, prior to the computer technology boom in the country. Using online questionnaires, perceptions of N=130 study participants, 56 males, and 74 females, with a mean age of 37.18 (+/- 3.32 Sd), were analyzed to establish if early exposure to indigenous Philippine games aided Holistic Development. Results confirmed that the games are 95.25% perceived to support Holistic Development, particularly in the Physical, 95.38%, Cognitive, 93.85%, and Socio-emotional, 96.54% domains. Furthermore, content analysis of the data showed that Philippine indigenous games fostered larger-than-game life skill applications, connectedness, and sex-differentiated mental and physical strengths, including positive indications of academic success. Measurement limitations, notwithstanding, this study contributes to empirical knowledge establishing Philippine indigenous games' support to children's Holistic Development through growth-permissive contexts, cohort experiences, and normative history-graded influences. It offers an empirical basis for institutionalized restoration, promotion, and preservation of Philippine indigenous games while advancing health, culture, and heritage. Future studies are recommended to consider cross-sectional, correlational, and long-term approaches across regions, sub-cultures, socio-economic, age, and gender groups.

Keywords: Philippines, Indigenous Games, Physical Development, Cognitive Development, Socio-emotional development

The positive effects of play and games on a child's multiple developmental domains, such as their physical, cognitive, and socio-emotional development, have already been established by numerous earlier studies (Jayman & Tottman, 2021; Moore, 2019), but few have looked at whether this consistently holds true for Philippine indigenous games. Generally, games and play can be used for more than just recreational pursuits. It has been observed that games and play can affect knowledge (i.e., cognitive developmental domain) attitudes, behaviors, (i.e., socio-emotional developmental domain), and skills (i.e., physical developmental domain) (Ifenthaler

et al., 2012). Games and play have been shown to help school-aged children develop fundamental motor skills (Moghaddaszadeh & Belcastro, 2021), assisting them in gaining their full potential across the broad physical developmental domains. This includes motor development (Romizowski, 2009), sensory development, balance, and coordination just to name a few (Topper, 2022). Further, they have also been established as effective enablers of cognitive developmental domains such as in language skill development (Lai et al., 2018), and in achieving educational objectives (Mccracken & Colucci, 2013). Cognitive developmental domains include intellectual

advancement and creativity with brain development, including the ability to read and interpret signals and identify patterns. As they develop cognitively, children gain the ability to process thoughts, pay attention, develop memories, understand their surroundings, become resourceful, and make, implement, and accomplish plans and executive functions (Darling-Hammond et al., 2020; Fraser-Thill, 2021). They can adapt materials and activities to better suit their preferences, settings, and social contexts (Allen & Marotz, 2000; Berger, 2009). Furthermore, through games and play, children learn self-regulation, cooperation, and social interaction with others (Broadhead, 2003). These constitute the socio-emotional domains of development, which include their expanding knowledge of and ability to regulate their emotions during play. Along with these, they also begin to understand how others feel, learn how to collaborate, show empathy, and apply moral judgment (Fraser-Thill, 2021). These core developmental domains are even consistently included as indicators of child well-being (Pollard & Lee, 2003). It is therefore not surprising to see games and play is central to the UN-sanctioned Sport-for-Development (SfD) programs (UNITF-SDP (United Nations Inter-Agency Task Force on Sport for Development and Peace), 2003) and is even designed as a form of psychosocial intervention (Wiedemann et al., 2014). Numerous studies have used play and games to support such larger-than-game causes as promoting post-conflict reconciliation in Bosnia-Herzegovina (Armstrong & Vest, 2012), rehabilitating internally displaced people in Nigeria (Hamafyelto et al., 2017), assisting HIV patients in Africa (Mwaanga, 2010), and promoting post-typhoon recovery in the Philippines (Guinto & Logan, 2021), among many others.

Although there is currently a wealth of research outlining the advantages of play, sports, and games in general, there is a relative dearth of studies specifically looking at the advantages of playing Philippine indigenous games to holistic development from emic perspectives. This study responds to this gap by delving into the shared experience of a generation of 130 Filipinos who played Philippine indigenous games in their early years, prior to the introduction of online games in the millennium, a history-graded event that saw the decline of Philippine indigenous games in the country.

The Rise of Technology and the Decline of Philippine Indigenous Games

Philippine indigenous games, widely known as *Laro ng Lahi*, are a collection of traditional games, with pre-colonial and colonial-era historical origins, and are usually played in recreational and non-mainstream contexts to demonstrate or test an individual's or group's strength, endurance, and dexterity (Mabborang et al., 2022; Maranan, 2019; Las Johansen & Mores, 2013) while reflecting cultural heritage and social identity (Edwards, 2009, p.33).

Prior to the rise of online games, Philippine indigenous games were a popular form of recreation among Filipino children. There are about forty known traditional Filipino games (Young, 2015), and children were previously seen playing these mostly on the streets, if not indoors. Examples of indoor games include *Sungka*, *Dama*, and *Cara-cruz*, while many of the games are played outdoors, such as *Luksong-tinik*, *Patintero*, *Piko*, and *Tumbang Preso*, to name a few. These games provide excellent opportunities for children to maximize the benefits of play across a wide variety of developmental domains, making it holistic for learning, growth, and development (Balite & Robles, 2020; Carmen et al., 2015). Remarkably, most of the games were meant to be played outdoors, thus becoming popular on the streets, and commonly linked with Philippine indigenous games (*Laro ng Lahi*) in contemporary times (Mabborang et al., 2022). Regional street games may be attributed to a community, but they also showed slight differences from other versions that were not necessarily specific to one tribe or location. Nonetheless, it reflected shared roots, common cultural values, and national identity (Mabborang et al., 2022). *Laro ng Lahi's* significance can thus be classified based on its benefits, including the promotion of health, culture, social aspiration, and values (Prestoza et al., 2020). With these contemplated gains, Philippine indigenous games have notably emerged as one of the recognized important cultural elements that speak of cultural heritage (Hortelano et al., 2015; Mabborang et al., 2022), an intangible national treasure deserving of international recognition, protection, and promotion as emphasized by the UNSECO (Roque et al., 2017). However, as technological landscapes shift over time, children's game and play preferences change incrementally, diminishing the benefits and gains of playing indigenous games as they become engulfed by technological progress.

Technological progress has punctuated notable lifestyle differences between generations across the decades. For instance, the transition of Filipino families from modest battery-operated transistor radios to the more imposing TV sets in the late 1970s' aggressive rural electrification program (Herrin, 1979) was accompanied by the emergence of a subculture of visual boldness, a celebration of excesses, and marked individualism that would soon characterize the 1980s era (Mattson, 2001). During this period, the eventual obsolescence of the Baby Boomer's collaborative "Melting Pot" dispositions, started giving way to Gen X's "Salad Bowl" outlook, which keenly recognizes unique differences, personal preferences, and individual character (Sirias et al., 2007). The 1980s expanded the options for individual games, leisure, and play, and it also witnessed its first few struggles with children's excessive screen time. As TVs lost their built-in cabinet locks, which could have limited viewing time, they began to gain compatibility with the Beta-Max, VHS, and a variety of Video Game Consoles such as Sega, NES Family Computer, Nintendo, and the Atari, all of which were patronized into the 1990s with great cultural and behavioral implications (Consalvo, 2009; Kent, 2001). Children simply began to have more individualized, sedentary, and socially-limiting indoor game options rather than playing the more active outdoor games (Wolf, 2012). The 1990s continued proliferating more video game options available to Filipinos. The release of the Super Mario Bros. live-action movie in 1993, followed by Street Fighter and Mortal Kombat over the next two years, catapulted video games to the big screen in the mid-1990s, with more adaptations opening recognizable profits to the media industry (Moore, 2010). Since then, numerous films based on video games have been released. Aggressive marketing of new games also accompanied the explosion of public video game consoles that were made available in city mall arcades. While this attracted more children in the cities to shift towards computer games, children in the provinces continued to play and enjoy simple indigenous games in the form of rural street games (Maborang et al., 2022). Rural children, as in any other Southeast Asian setting, are more likely to grow up in low-income households, and because traditional games are less expensive than modern video games, children in rural communities tend to prefer playing them (Siregar & Ilham, 2019).

People's lives were profoundly impacted by the revolutionary technological advancements of

the 2000s. The emergence of online connectivity made video games interactive, allowing players to connect and play games online, and turning video game experiences into social platforms where players engage in interaction, collaboration, and communication with one another (Cole and Griffiths, 2007). This expanded the reach and access of more Filipinos to a vast array of interactive online video games played on a global scale. As a result, children today are commonly seen fiddling with their personal gadgets like smartphones, iPods, and PSPs, exercising only their fingers and sitting sedentarily for hours while fixated on the digital screens of their TV, computers, or personal gadgets, for games or videos on the internet (Anderson, 2018). While technology provides many benefits of ease and convenience such as access to reliable information, efficiency of communication, and effectiveness in performing tasks, it also has its drawbacks, particularly on the health of children: more children are becoming more sedentary, thus exacerbating the on-going global obesity pandemic (Meldrum, et. al, 2017).

Health Risks in the Shift from Indigenous to Digital Games

Concerns about the potential health risks associated with sedentary behavior have grown as indigenous Philippine games have given way to digital games. Physical fitness and overall health may suffer as a result of the shift from active traditional games to sedentary digital games. Sedentary behavior that exceeds the daily 2-hour limit for sedentary screen time (Stierlin et al., 2015; Park et al., 2020) has been shown to have long-term negative health consequences, including the emergence of diseases such as obesity (World Health Organization, 2019). Chronic health issues, developmental problems, and a lower quality of life in children are just a few of the known adverse effects of sedentary behavior (Stierlin et al., 2015; Wu et al., 2017). A study by Park and colleagues (2020) has identified a long list of associated health risks, including increased all-cause mortality, cardiovascular disease mortality, cancer risk, and risks of metabolic disorders like diabetes mellitus, hypertension, and dyslipidemia, and musculoskeletal disorders like arthralgia and osteoporosis, among others.

Digital games have also been shown to frequently isolate individuals and limit face-to-face interactions, thus negatively impacting children's social skill development and emotional well-being (Gentile

et al., 2017). While it has been demonstrated that action video games can improve various aspects of cognitive functioning, excessive gaming may have detrimental effects on attention and academic performance due to learning problems observed such as distraction, addiction, and exposure to violence (Bavelier et al., 2010; Weinstein and Lejoyeux, 2010). Furthermore, the rising mental health issues of online game addiction have resulted in the emergence of correlated mental depression (Labana et al., 2000) and cognitive impairment (Park et al., 2020) as common mental health challenges associated with online video computer games and sedentary lifestyles in the new millennium.

The shift from indigenous to digital games has resulted in sedentary behavior and associated health risks (Stierlin et al., 2015; Wu et al., 2017; Park et al., 2020). Given the negative effects of sedentary behavior and excessive digital gaming on children, there is a growing need to promote active Philippine indigenous games. Its revival could be critical in promoting healthier lifestyles and mitigating the negative health consequences of excessive digital gaming among Filipino children.

Reviving Philippine Indigenous Games for Health and Heritage

Few steps have been taken to preserve game traditions as part of the Philippine government's initiatives to revive indigenous games in the country. On 23 December 2018, The House of Representatives unanimously approved House Bill 8626, or the proposed "Philippine Indigenous Games Preservation Act of 2017," which seeks to preserve indigenous games for future Filipinos. The bill mandates the National Commission for Culture and the Arts (NCCA), in coordination with the Department of Education (DepEd), to initiate measures to preserve indigenous games in the country, including 1) their inclusion in the appropriate part of the curriculum in the basic education system of the schools; 2) the preservation of such games either by documentary or other useful means; and 3) the holding of regular demonstration of such games in national events and appropriate school activities (Republic of the Philippines House of Representatives, 2018). However, despite these bold measures, fewer children are still seen playing the games, especially in urban areas. In a recent study, a worrying finding was reported: nearly half of the Generation Z respondents reported no longer playing the games (Booc et al., 2019). If this declining trend

continues, Philippine indigenous games may face extinction (De La Cruz, 2018). In addition, schools are also currently pushed to promote the highly institutionalized, and mainstreamed Western games, at the varsity and grassroots levels (Vargas, 2019). Consequently, this drives formal institutions and communities to prioritize the mainstream competitive Western games over the informal, indigenous games. Hence, indigenous games have not yet been fully integrated into the country's major collegiate and university athletic events and competitions.

The case of *Sipa* and *Arnīs*, for instance, shows how indigenous games are not mainstreamed in the nation's important collegiate and university athletic events despite being recognized as national symbols. *Sipa*, a pre-colonial Philippine native game that is also known as Southeast Asian *Sepak Takraw*, is played with a rattan ball and requires players to touch the ball only with their feet, knees, chest, and heads. It was the country's national sport until *Arnīs* took its place in 2009 (Philippine Daily Inquirer, 2017). *Arnīs*, on the other hand, is also a pre-colonial Filipino heritage sport distinguished by the use of sticks, bladed weapons, and bare hands in combat. These indigenous games have so far only been used in university and collegiate athletic institutions as mere demo games or symbolic additions, and never featured as a mainstream event, thus have easily been overshadowed by more popular sports (Dimaiwat & Bautista, 2020). Indeed, one of the contributing factors explaining the decline in the popularity and patronage of Philippine indigenous games is their non-mainstreaming in institutionalized events, or the lack thereof.

Given these challenges, the current study investigates how Filipinos, particularly those who were born in the 1980s, perceive the advantages of playing Philippine indigenous games for children's holistic development, specifically in the physical, cognitive, and socio-emotional domains. By analyzing the personal experiences of those who have personally played the games before the rise of the now more popular computer games, the researchers aimed to gather, document, and present knowledge on the perceived advantages and positive effects of playing Philippine indigenous games. The gathered data provides an empirical basis to promote and revive these games in Filipino families, such as among parents and their children, as well as in schools, such as among teachers and their students. This study also offers data-driven insights for the development of physical education programs and school events

that address the global need to decrease sedentary behaviors and increase physical activity in order to promote public health, while also contributing to the promotion and preservation of Philippine indigenous traditions as part of the country's national heritage.

RESEARCH DESIGN AND METHODS

This exploratory study was designed to collect, describe, and present data on the perceived benefits of playing indigenous Filipino outdoor games on children's holistic development, taken from those who personally experienced playing the games. Given the contexts in which it is examined, the current study asserts its validity. The respondents' perceptions of the advantages and benefits of playing Philippine indigenous games on their multi-domain development are based on experiential knowledge and are valid as a result of the data being directly derived from personal, real-life experiences. While often undervalued, experiential knowledge remains important in the generation of multifaceted resources that enable people in vulnerable situations to respond to uncertain futures (Baillergeau & Duyvendak, 2016). In the same light, experiential knowledge remains an essential resource in creating data-driven dispositions for the preservation of the extinction-threatened Philippine indigenous games (De La Cruz, 2018).

Through the respondents' retrospection, the perceived benefits of playing Philippine Indigenous games were identified, tabulated, measured, and analyzed using a combination of descriptive statistics and content analysis (Stemler, 2001). Considering the overall experience of the participants in playing Philippine indigenous games, other relevant information beyond the games such as the player's birthday, age, sex, residence, education, list of games played, play contexts, and their individual responses to the research questions were recorded, sorted, coded, measured, and qualified into thematic categories. These themes were inductively analyzed to represent perceptions of their collective game experience. Noteworthy of this process is the researchers' neutral stance surrounding their personal preconceptions or biases, such as those that may pertain to certain ethnolinguistic roots, regional origins, patronage and popularity, preferences, or prejudices. Furthermore, despite popular representations that attribute intrinsically good or bad values to games and play, this study affirms that games and play are neutral activities with meanings and values only assigned by

participants and stakeholders within a cultural context (Guest, 2009; Guest & McRee, 2009). In this light, any findings in this study about Philippine indigenous games may still be valuable for other scholarly works on indigenous games outside of Philippine contexts.

The current study's descriptive approach to data analysis and interpretation contributes to data-informed, research-driven, and empirically based initiatives to revive Philippine indigenous games among Filipinos and reinstate them as a form of value-adding exercise and play for children. According to Calderon (2006), descriptive research is a deliberate process of gathering, analyzing, classifying, and tabulating data about present circumstances, customs, trends, and cause-and-effect relationships before offering a sufficient and accurate interpretation of the data, sometimes with or without the aid of statistical methods. The result of this method, which can be qualitative, quantitative, or both, adequately describes the general characteristics of the group while also establishing the facts in the group being studied. By using a descriptive design, the researchers could aptly describe the perceived advantages of playing Philippine Indigenous games across all domains of development as well as the respondents' individual experiences in playing the games. This enabled the researchers to develop a data-driven narrative about the advantages of playing indigenous Philippine games for children's growth and development.

The Research Process

Research during the Covid-19 pandemic times proved to be challenging, especially in engaging participants who were equally affected by the rising cases of the disease during the pandemic lockdowns. Through poster-style publicity material shared online, the public was made aware of the call for research respondents to participate in the study. A direct link to the online survey was also provided in the digital posters for the participants' ease of access. The online questionnaire remained active and accessible at any suitable time within the duration of the online survey. It gathered demographic information, Philippine indigenous game experiences, and perceptions about the game from qualified research respondents. Online requests for likes, comments, tags, and shares of the disseminated posters were sent to the researchers' peers on the same online platform so that potential respondents could see them. Additionally, respondents were asked to refer more qualified study participants which eventually

snowballed the process.

Research Participants

The study engaged N=130 study participants, of which 56 were males and 74 were females, with a mean age of 37.18 (+/- 3.32 Sd). While female participants outnumbered males by 14%, and male participants were, on average, half a year older than their female counterparts, the study population is relatively homogenized in terms of age between the sexes. The participants had to be Filipinos born in the 1980s, which spanned from 1980 to 1989, just before the computer game boom of the 1990s. The researchers chose to study this cohort of respondents because they were more likely to have personal experiences in playing the games than those born in the early 2000s (Laureta, 2015). To add reliability to their inputs, the respondents had to have participated in at least three of the listed outdoor indigenous Philippines games indicated on the questionnaire. The selection of participants was not limited by their sex, gender, sub-cultural ethnicity, family size and structure, course or educational attainment, place of residence, or socio-economic status. The participant's personal data was gathered with care and adherence to ethical research practice. Informed consent was obtained, assuring the participants of their open and voluntary choice to participate with ethical observance of personal data privacy and confidentiality.

Sampling Design

Participant selection was done using non-probability sampling, specifically a combination of purposive, convenience, and snowball sampling approaches. These non-randomized, nonprobability sampling techniques aided the study's sample selection, based on certain researcher-set criteria.

There were three main reasons why the researchers chose this specific cohort of respondents: 1) they were more likely to play Philippine indigenous games than their younger counterparts, who had the option of playing sedentary computer games instead, opening up opportunities for purposive sampling (Sharma, 2017); 2) they also provided convenience sampling opportunities (Dörnyei, 2007) as they were also the researchers' proximate peers and contemporaries; and 3) they also provided snowball sampling opportunities (Maheshwari, 2017) within their age group, which presented a good contingency measure in case the minimum number of respondents sought through convenience and purposive sampling

falls short. Furthermore, because the study was conducted online, it did not matter if the respondents were in the Philippines or elsewhere during the pandemic lockdown, at the time when the study was conducted. In this regard, the nonprobability sampling strategy (Etikan et al., 2016) has proven to be useful and applicable given certain restrictions and limitations in the research contexts, such as budget, time, and workforce mobility in the pandemic times, just to name a few.

Initially, the researchers relied on purposive and convenience sampling. Following Taherdoost's (2017) recommendations for minimum sampling, a goal of 100 respondents over the course of three months was originally planned. These primarily consisted of the colleagues and contacts of the researchers who satisfied the selection criteria, including proximity and accessibility, availability at a specific time, and willingness to participate, among other factors that perfectly describe convenience sampling (Dörnyei, 2007). In addition, this process also complied with Sharma's (2017) definition of purposive sampling, which relies on the researchers' judgment during the selection process. For this study, participant selection aimed to homogenize the participants based on age, prior play experience as children, and ability to provide comprehensive information, data, and responses regarding the research topic. However, the study initially failed to reach the marked 100-participant-target, gaining only 30 participants in the later part of the three-month data-collection period.

Responding to this limitation, the researchers extended the data collection period for another three months and posted online requests among their peers for likes, comments, tags, and shares of the digital posters that were previously circulated among themselves. This enhanced the study's reach to more potential respondents who were further asked to recommend or refer additional potential study participants, a characteristic of a snowball sampling strategy (Maheshwari, 2017). The snowballed process resulted in 131 respondents, exceeding the set target. This number was later reduced to 130 after one was discovered to have fallen short of the minimum indicated number of indigenous games played. Snowball sampling, which relies on recommendations from the initial participants to gather more respondents (Maheshwari, 2017), has been an effective backup sampling strategy for the research team.

Research Instruments and Data-Gathering Process

An online digital questionnaire was administered to analyze the participants' perceptions and determine if early exposure to indigenous Philippine games supported holistic development, specifically in the physical, cognitive, and socio-emotional domains. Utilizing the Google Forms platform, the researchers used a pilot-tested online survey questionnaire that collected quantitative and qualitative data from the research participants. Its open-ended questions enabled the researchers to identify, enumerate, and measure the specific Philippine indigenous games the participants played, apart from those that were indicated in the multiple-choice list. Furthermore, questions as to how the games supported their physical, cognitive, and socio-emotional growth were asked, thereby eliciting a variety of qualitative responses. The participants were also asked to share and expound on their past personal experiences in playing indigenous Filipino outdoor children's games to provide context and enhance reliability. English was used as the language to avoid confusion, as it remains the primary medium of instruction in the country. However, because the study involved Philippine indigenous games deeply rooted in traditional concepts and values, some Filipino terms and names were used in the questionnaire and throughout the study, particularly those that did not have a direct English translation.

Facebook, Messenger, e-mail, and Short Messaging System (SMS) were altogether used as various digital communication support tools to contact and invite qualified friends or acquaintances to participate in the study as its initial participants. Only one set of online questionnaires was utilized throughout the study's data collection process to maintain consistency and simplicity. Participants were given the option to contact the researchers using any of the digital tools if they had any questions or needed clarification while filling out the questionnaire. Their diversity in sex, gender, family size, or place of residence was deemed non-restricting in the conduct of the study.

Data analysis

Descriptive statistics such as tallying frequency counts, means, ranks, and percentile measures were used on the demographic portion of the questionnaire, as well as on some items where participants were asked to choose from a list of multiple options. It was also used to measure the prominence of the themes

elicited from the participants' responses to open-ended questions. This process was necessary for the content analysis of the expounded responses, where prevalent themes were also ranked according to frequency. Thus, the analytical outcomes of the study produced both quantitative and qualitative results. To observe inter-rater reliability (Keyton et al., 2004), the researchers checked and compared each other's statistical computations to make sure they were consistent. They also concurred on the thematic coding of the qualitative data to obtain a consistent measurement of prominence.

RESULTS AND DISCUSSION

This section presents the current study's findings in its descriptive statistical analysis, including its interpretive suggestions and implications, as well as a summative discussion of the key research outcomes. Beginning with a presentation of the various kinds of Philippine indigenous games experienced by the respondents as children, it is followed by a demographical analysis of the respondents as it traces the patterns and trends observed in the organized and tallied data. The discussion proceeds to derive insightful interpretations from the observed occurrences within the presented data, including observations on how the data are expressed or differentiated according to sex, which allows us to explore the differences between male and female perceptions, impacts, and implications. Finally, going beyond descriptive statistics, themes drawn from the qualitative data were content-analyzed to represent the most prevalent responses to the questions asked. These qualitative themes allow for a more robust discourse based on their prominence in the pool of data. By organizing the findings in this manner, a meaningful narrative on the perceived advantages and benefits of playing Philippine indigenous games to physical, cognitive, and socio-emotional development is pursued.

Game Frequency and Popularity

Results show that the study participants engaged in 45 different Philippine indigenous games. Enumerated according to frequency (N=130), these games are as follows : (1) *Langit Lupa*, 93%; (2) *Patintero*, and *Taguan* (also known as *Tagu-Taguan*), both 92%; (3) *Tumbang Preso*, 84%; (4) Chinese Garter, and *Piko*, both 83%; (5) *Sungka*, 82%; (6) *Agawan-base*, *Luksong-baka*, and *Luksong-tinik*, all at 81%; (7) *Sipa*, 76%; (8) *Dama*, 68%; (9) *Palosebo*,

46%; (10) *Siato*, 13%; (11) *Jolens*, 11%; (12) *Matayataya*, 7%; (13) *Doktor Kwak-kwak*, and *Pogs*, both at 5%; (14) *Batuhang Bola*, 3%; (15) *Agawan Bola*, *Buwan*, *Habulan ng Baboy*, *Jackstone*, *Paway*, *Shake-shake Shampoo*, *Sili-sili Maanghang*, *Sipaang Bola*, *Teks*, *Ten-twenty*, *Touchball*, *Tubigan*, each showed a 2% frequency; and finally, (16) *Bahaybahayan*, *Block 1-2-3*, *Hula-hoop*, *I Went to California*, *Nips*, *Pass the Message*, *Sagidi-sagidi*, *Saluhang Bola*, *Sasara ang Bulaklak*, *Sawsaw Suka*, *Sipaang Bola*, *Speedy*, *Teddy Bear*, *Tam Sawyer*, each with the least 1% frequency.

Game Preference with Filipino Names

The influence of language on the study participants' choices and preferences when it comes to selecting and engaging with various types of games has been observed in this study. This influence can be seen in a variety of ways, including a preference for games with Filipino language elements, themes, or cultural references, as well as the impact of language on game naming and conceptualization. Remarkably, the games with English names tended to show lesser frequency than games with Filipino local names. Conversely, the most popular games played by the respondents tended to carry games with local Filipino names.

As seen in Figure 1, only one (Chinese Garter) had an English name among the fifteen most frequently played games. This finding suggests that the study participants tended to prefer games named, identified, and conceptualized in Filipino. The linguistic identity (Aksholakova, 2014) it carries readily provides awareness that one belongs to a larger group, allowing one to determine his place in the social and cultural space, and distinctly orient oneself in the world around (Grushevitskaya et al., 2002). Thus, in line with a previous study's findings that sharing essential cultural, and linguistic signals in an inclusive and supportive environment promotes social identity (Edwards, 2009), sharing preferred indigenous games allows participants to identify with others through the various socialization processes provided by the games. The wide range of Philippine indigenous games played by the participants reflected the breadth of options available to them as well as the striking differences in their play spaces. This highlighted the diverse environments of the participant pool and demonstrated how easily children can adapt materials and activities to better suit their needs, preferences, and contextual settings or environments in which they play (Allen & Marotz, 2000; Berger, 2009).

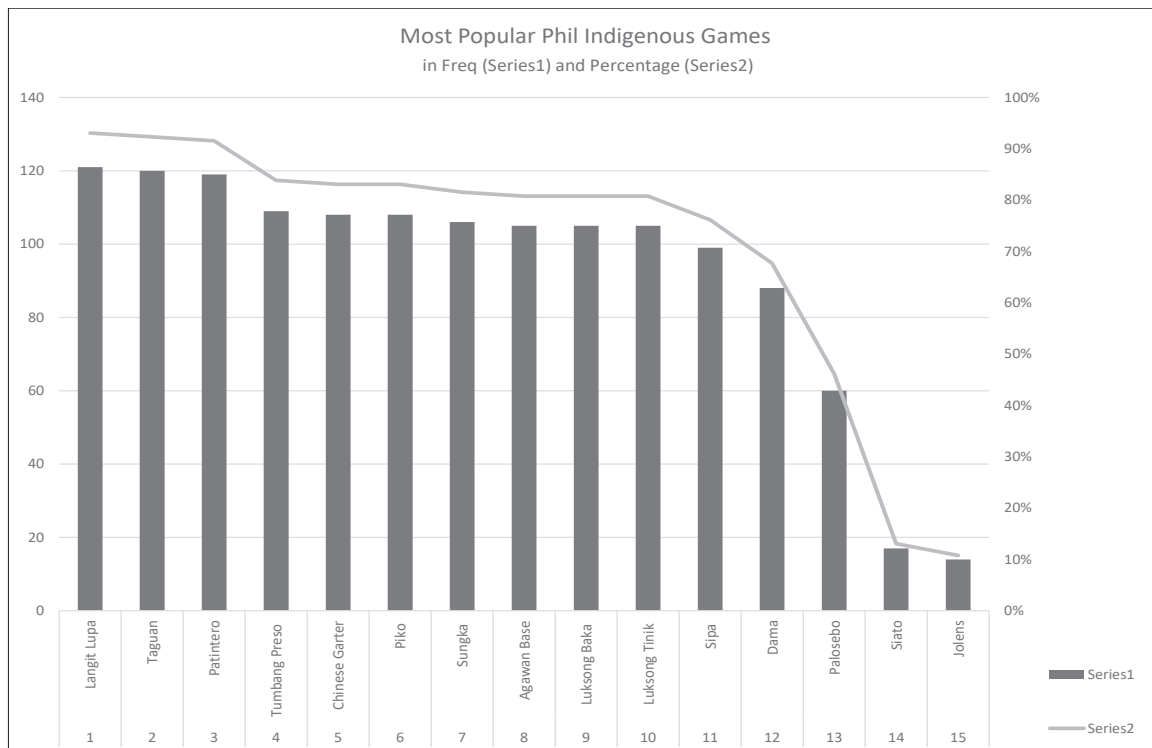


Figure 1. Philippine Games played during childhood

Indigenous Games and Academic Success: A Gendered Differentiation

Because this study looks at the benefits and advantages of playing Philippine indigenous games as perceived by the study’s participants, it also considers how these games may indicate academic success, learning, and educational achievements. Data from the N=130 participants revealed that the majority of those who participated in Philippine indigenous games as children successfully completed their collegiate education. This accounts for 82.3% of the study participants, who finished their baccalaureate, graduate diplomas, master’s, and postgraduate degrees (see Table 1). This is suggestive of how

gendered work (Smith, 2013) from the demands made of them by hegemonic masculinity (Mcvittie et al., 2017), a gender dynamic representing the socially valued superiority and authority of men over women or other gender identities, prevalent in the Philippines (Salazar, 2019; McKay, 2011). In a society that is largely male-dominated (Abenes, 2015), and where opportunities for success are skewed toward men, the statistics ultimately speak of women’s adaptive and competitive motivations to overcome these challenges through education. Also, if a causal link between playing Philippine indigenous games and academic success is established, playing Philippine indigenous games may be regarded as a precursor.

Table 1. Highest Educational Attainment of Participants

Highest Educ Attainment	M	M(%)	F	F(%)	TOTAL	TOTAL(%)	M-F Diff	Absolute Diff	Diff (%)	Remarks
Postgrad Doctorate Md/Phd/J.D.)	3	5%	4	5%	7	5.4%	-1	1	0%	M=F
Graduate-Masters Degree	5	9%	6	8%	11	8.5%	-1	1	1%	M>F
Graduate-Diploma Program	0	0%	1	1%	1	0.8%	-1	1	-1%	F>M
College Baccalaureate Degree	35	63%	53	72%	88	67.7%	-18	18	-9%	F>M
College-Undergraduate	4	7%	4	5%	8	6.2%	0	0	2%	M>F
High School Graduate	7	13%	3	4%	10	7.7%	4	4	8%	M>F
Technical-Vocational Course	0	0%	1	1%	1	0.8%	-1	1	-1%	F>M
Did not Mention	2	4%	2	3%	4	3.1%	0	0	1%	M>F
Totals	56	100%	74	100%	130	100%	-18	18	N/A	N/A

playing Philippine indigenous games as a child may also support academic pursuits, consistent with prior studies’ claims on how sports, games, and play generally promote excellent academic performance (Guinto & Logan, 2021; Mccracken & Colucci, 2013). Furthermore, it was observed that the female participants who played Philippine indigenous games as a child appeared to be more academically inclined, driven, and determined to finish their college education than their male counterparts, outnumbering them by 10%. Similarly, also by 10%, more males did not finish their high school and college education than females. This does seem to uphold prior studies articulating that being a woman necessitates

Conducting appropriate empirical research using approaches that allow for control of other variables that may explain academic success remains a challenge and a research opportunity.

Playing Philippine Indigenous Games Develop Physical Skills and Traits

The current study’s inquiry on the physical skill development aspect revolved around the study participants’ (N=130) perceptions of how Philippine indigenous games support the development of gross motor skills and the development of physical fitness traits that advance said skills.

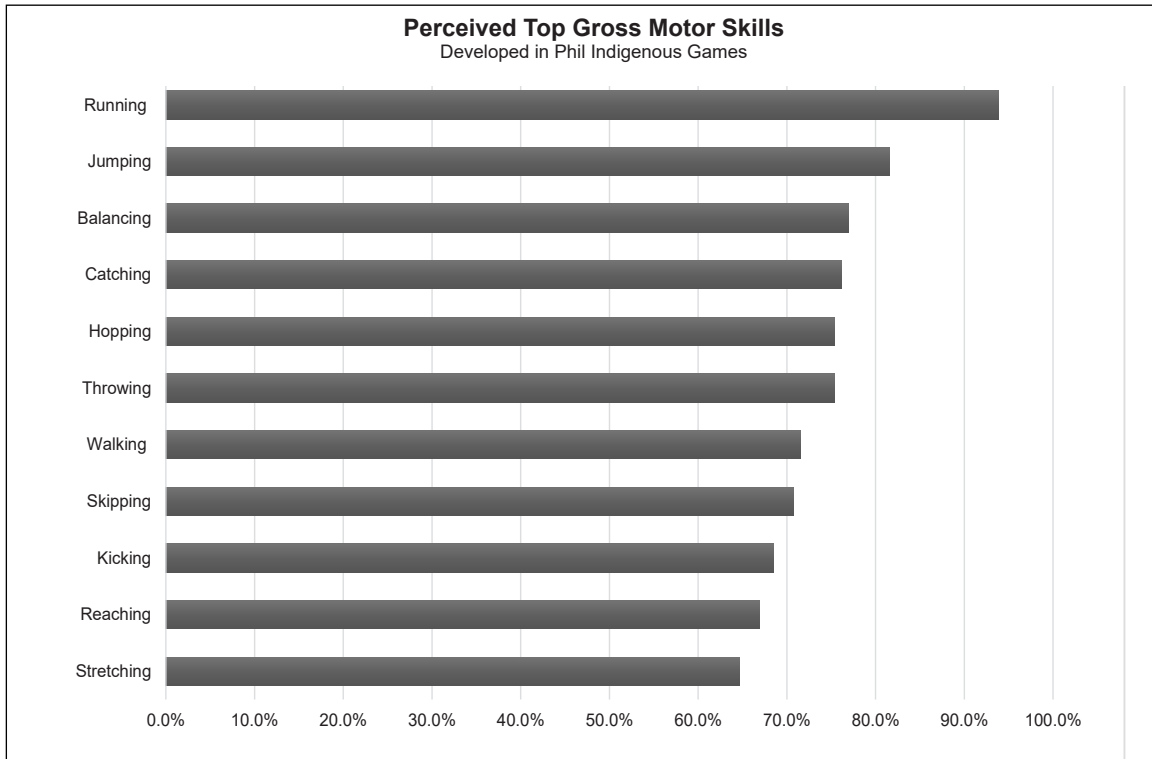


Figure 2. Physical Skills Developed

Figure 2 illustrates the top ten gross motor skills perceived by study participants to be developed through playing Philippine indigenous games, ranked from the most frequent to the least frequent: (1) running, as agreed by 93.8% of the respondents; (2) jumping, 81.5%; (3) balancing, 76.9%; (4) catching, 76.2%; (5) hopping, and throwing, each equally at 75.4%; (6) walking, 71.5%; (7) skipping, 70.8%; (8) kicking, 68.5%; (9) reaching, 66.9%; and (10)

stretching, 64.6%.

Beyond this top ten list, the other gross motor skills perceived to be developed also included: (11) climbing, 61.5%; (12) carrying, 53.8%; (13) dribbling, 35.4%; (14) galloping 1.5%; and (15) other articulated gross movements that elicit the least frequency of 1 / N=130 or 0.8%: aiming accuracy, hand coordination, sense of rhythm, shooting, striking with a projectile, turning, and twisting.

Table 2: Physical Fitness Traits Developed

Perceived Top Physical Fitness Traits Developed in Playing Philippine Indigenous Games

No.	Fitness Traits	Percentage	Frequency
1	Agility	82%	106
2	Endurance	78%	101
3	Speed	77%	100
4	Strength	75%	98
5	Flexibility	72%	94
8	Balance	70%	91
7	Reaction time	3%	4
8	Power	2%	3
9	Kinesthetic Awareness	1%	1
10	Muscle Memory	1%	1

It has been observed that the study participants link playing indigenous Philippine games to the improvement of a wide range and variety of physical abilities. These physical skills are considered important in survival skills and emergency response especially during calamities and disasters, given that the Philippines is consistently among the world's most dangerous countries to be in. As of 2022, the Philippines registered the highest World Risk Index of 46.82 (Atwii, et al., 2022), officially becoming the most disaster-prone country on the planet, with its susceptibility to deadly typhoons, earthquakes, volcano eruptions, and other natural disasters due to its location within the Pacific Ring of Fire.

Considered essential for survival and important in escaping to safety are the top-ranking physical skills (see figure 2) namely: running, jumping, balancing, catching, throwing, and hopping, as well as physical traits (see table 2) namely agility, endurance, speed, strength, flexibility, and balance, which are all useful, especially in disasters, be they natural or man-made. Having children develop these physical skills through games and play fosters a sense of safety in both objective and subjective contexts, being in a fun activity that releases the mind from fears in disasters (Hobfoll et al., 2007), and being in a safe environment that provides practice and rehearsals, promoting movement efficacy through play (Wiedemann et al., 2014).

Table 3: Summary of Participant's Perceptions

PARTICIPANTS' PERCEPTIONS	M	M (%)	F	F (%)	TOTAL	TOTAL (%)	M-F Diff	Abso'l't Diff	Diff (%)	Remarks
Perception 1: Playing Phil Indigenous Games Promotes Motor Skills										
Yes	55	98.21%	69	93.24%	124	95.38%	-14	14	4.97%	M>F
No	1	1.79%	1	1.35%	2	1.54%	0	0	0.43%	M>F
Somewhat/somehow/unsure	0	0.00%	4	5.41%	4	3.08%	-4	4	5.41%	F>M
Totals	56	100.00%	74	100.00%	130	100.00%	N/A	N/A	N/A	N/A
Perception 2: Promotes Physical Fitness										
Yes	52	92.86%	66	89.19%	118	90.77%	-14	14	3.67%	M>F
No	2	3.57%	5	6.76%	7	5.38%	-3	3	3.19%	F>M
Somewhat	2	3.57%	3	4.05%	5	3.85%	-1	1	0.48%	M=F
Totals	56	100.00%	74	100.00%	130	100.00%	N/A	N/A	N/A	N/A
Perception 3: Fosters Physical Development Benefits										
Yes	54	96.43%	70	94.59%	124	95.38%	-16	16	1.83%	M>F
No	1	1.79%	1	1.35%	2	1.54%	0	0	0.43%	M=F
Somewhat/somehow/unsure	1	1.79%	3	4.05%	4	3.08%	-2	2	2.27%	F>M
Totals	56	100.00%	74	100.00%	130	100.00%	N/A	N/A	N/A	N/A
Perception 4: Promotes Cognitive Skills										
Yes	53	94.64%	70	94.59%	123	94.62%	-17	17	0.05%	M=F
No	3	5.36%	2	2.70%	5	3.85%	1	1	2.65%	M>F
No Answer	0	0.00%	1	1.35%	1	0.77%	-1	1	1.35%	F>M
Somewhat/somehow/unsure	0	0.00%	1	1.35%	1	0.77%	-1	1	1.35%	F>M
Totals	56	100.00%	74	100.00%	130	100.00%	N/A	N/A	N/A	N/A
Perception 5: Fosters Cognitive Devt Benefits										
Yes	52	92.86%	69	93.24%	121	93.08%	-17	17	0.39%	M=F
No	3	5.36%	4	5.41%	7	5.38%	-1	1	-0.05%	M=F
Somewhat/somehow/unsure	1	1.79%	1	1.35%	2	1.54%	0	0	0.43%	M=F
Totals	56	100.00%	74	100.00%	130	100.00%	N/A	N/A	N/A	N/A
Perception 6: Promotes Socio-emotional Skills										
Yes	55	98.21%	72	97.30%	127	97.69%	-17	17	0.92%	M>F
No	1	1.79%	1	1.35%	2	1.54%	0	0	0.43%	M>F
Did not answer/Abstained	0	0.00%	1	1.35%	1	0.77%	-1	1	1.35%	F>M
Totals	56	100.00%	74	100.00%	130	100.00%	N/A	N/A	N/A	N/A
Perception 7: Fosters Socio-emotional Development Benefits										
Yes	51	91.07%	73	98.65%	124	95.38%	-22	22	7.58%	F>M
No	4	7.14%	1	1.35%	5	3.85%	3	3	5.79%	M>F
Did not answer/Abstained	1	1.79%	0	0.00%	1	0.77%	1	1	1.79%	M>F
Totals	56	100.00%	74	100.00%	130	100.00%	N/A	N/A	N/A	N/A

Results in Table 3 show that the participants (N=130) appear to be unanimous in their experience-based perception that playing Philippine indigenous games promoted their physical abilities, particularly their motor skills development, physical development, and physical fitness. 95% of the respondents agreed that playing the games helped them develop gross motor skills, with men being 5% more certain about this than women, who were 5.4% more doubtful about it. In addition, 91% of the respondents also saw how playing Philippine indigenous games promoted physical fitness, though the women remained 3% more skeptical about this than the men. Furthermore, 95% of respondents agreed that playing the games helps with physical development, though the women were still 2% less certain about this than men.

Beyond these numbers, it is noteworthy to acknowledge that participant insights generated themes that centered on the transfer of formative motor skills, highlighting the significance of playing indigenous Philippine games in promoting physical traits and abilities that are necessary even outside of play contexts, such as in achieving better health conditions:

“Playing these games is basically doing a form of cardiovascular exercise.”

“Most of the time the games involve running so this improved my endurance to not get tired easily and perform better as I grow older.”

“I was a ‘*lampa*’ (tenderfoot), sickly, sheltered, and naturally clumsy as a kid, but I believe playing outside made me stronger.”

“Running during the games strengthened my body, improved my immune system, and made my body healthier.”

In addition, the respondents agreed that participating in indigenous Philippine games helped them hone their athletic performance in other mainstream sports events in which they eventually competed. They claim that their childhood native games allowed them to become acquainted with basic movements and skills. It allowed them to practice the skill in play to the point of movement familiarity and proficiency, which aided their performance in subsequent competitive sports. They acknowledged that the motor skills acquired in these games provided opportunities for skill transfer in other sports:

“The games helped me hone skills that I later

used as a football player.”

“Running, which we did a lot during *Patintero* and *Dakpanay* games, helped me prepare for soccer. I had no trouble running fast when I first started playing soccer.”

“I developed strong legs as a child by playing our native games, and I demonstrated these abilities well into my adult years playing baseball and other sports because I could run, kick, and walk efficiently.”

Running was the skill that was most extensively discussed and frequently mentioned. It stands as the most identified gross motor skill in the games and is also seen as the most common movement in the popular indigenous games they played. Participants mentioned using this skill in a variety of games, which includes *Agawan-base*, *Habulan*, *Taguan*, *Dakpanay*, *Patintero*, *Luksong baka*, and *Tumbang preso*, just to name a few. Next to running games, the other most popular games like Chinese Garter, *Luksong Baka*, *Luksong Tinik*, and *Sipa*, among others, involve a lot of jumping. Hence, these games provide plyometric exercises (Davies et al., 2015) that could have helped the participants develop muscle strength to jump higher, run faster, and change directions more quickly, preparing them to perform better in any other sport that involves kicking, jumping, or running (Cronkleton, 2019). Remarkably, these games fostered the physical skills and traits that are necessary for survival and deemed useful in building resiliency and preparedness for emergencies, calamities, and adversities:

“Those games helped to develop my speed.”

“Speed and agility are important in the game, ‘*Agawan-base*,’ in order to catch or flee from adversaries.”

“To survive in today’s world, we must be tenacious, enduring, and resilient, as I learned from playing the games as a child.”

Moreover, playing Philippine indigenous games were observed to foster practice opportunities for a variety of movements and skills that are useful in everyday life contexts. For instance, the top game *Patintero* provides practice opportunities for sprint running while also rehearsing agility and balance.

These *Patintero* skills could practically be applied in other everyday contexts, such as when crossing busy streets in non-urban areas while avoiding

being hit by moving vehicles in the absence of traffic-regulating stop lights. Hence, the expression “*Makipag-patintero sa lansangan*” (to play *Patintero* in the streets) can both refer to children playing the actual game in the streets; or a humorous euphemism for an adult struggling to cross a busy street.

Overall, the participants agreed that playing Philippine indigenous games aided in their physical development, acknowledging how they benefited from the many games they played that demanded quick movements, endurance and stamina, strength, flexibility, and balance. Their reports on the physical benefits of playing the games consistently agree with what the literature on motor skill acquisition and development has established: that physical movements done in the game activities, such as running, jumping, climbing, and walking, among others, involve the progression of complex motor skills (Allen & Marotz, 2000; Berger, 2009; Berk, 2012), which are acquired, developed, and ingrained in the child’s muscle memory through the practice of Filipino games involving such repeated movements.

Playing Philippine Indigenous Games Promotes Cognitive Development

Data shows that the participants (N=130) also recognized the required cognitive work (see Figure 3) when engaged in Philippine Indigenous games. Ranked from the most frequent to the least frequent,

the ten most common cognitive skills recognized and acknowledged by the study participants (N=130) to be developed by playing Philippine indigenous games involve the following abilities:

- (1) articulating thoughts and ideas, 76%; (2) memorizing and recalling concepts, 64%; (3) understanding rules and comprehending instructions, 62%; (4) doing logical reasoning; and introspecting, both at 40%, respectively; (5) visualizing; problem-solving; and creating innovations, all equally at 34%; (6) reading or decoding, 25%; (7) writing or coding, 24%; (8) doing mathematical operations, 14%; (9) strategizing, 14%; and (10) learning and coping, 1%.

The most recognized applied cognitive skills in playing Philippine indigenous games were attributed to the ability to articulate thoughts and ideas necessary for speech and conversations, a key factor in connecting and relating with others. Aside from speech and the ability to articulate ideas coherently and intelligibly, the other high-rating cognitive skills that highlight the intellectual and communicative aspects of the Philippine indigenous games include memory, recall, and comprehension.

In this study, it is also important to note that cognitive skills received relatively lower ratings than physical skills and traits. Unlike physical skills, none of the cognitive skills exceeded 80%. Of note is the study participants’ noticeable low associations

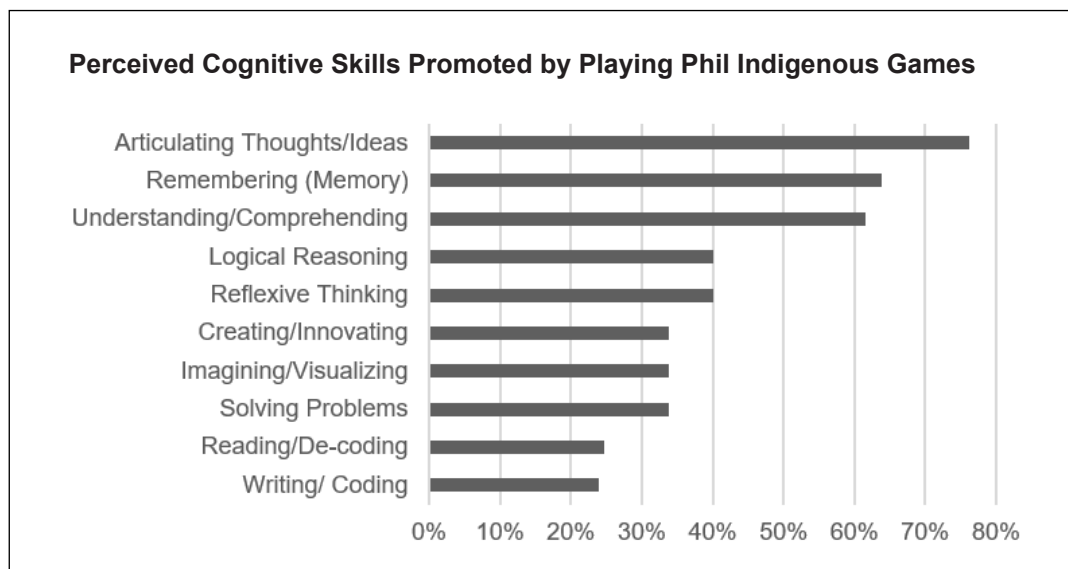


Figure 3. Cognitive Skills Developed

of the indigenous games' cognitive skill promotion translating to Literacy Skills such as reading, writing, and mathematical abilities. This could be indicative of the generation's widespread belief in the 80s that playing is diametrically opposed to studying and academic performance, particularly in terms of allotting attention, resources, and time.

Recent studies, however, point out how games and play positively promote excellent academic performance and educational objectives (Guinto & Logan, 2021; Mccracken & Colucci, 2013). This could also explain why the current study found that respondents who engaged in Philippine indigenous games completed their collegiate studies successfully, with 18% of them even obtaining higher degrees after college. Overall, 94% of the respondents (N=130), still agree that playing Philippine Indigenous games promotes cognitive skills, though men were 3% less convinced about this than women.

Relating how cognitive faculties are exercised in playing the native games, participants described how the games fostered the articulation of ideas and communication between players. This theme was prominent in both men's and women's responses. Cognitive skills are demonstrated through intra- and inter-team communication in the game and play contexts of the various indigenous Philippine games. Being able to express ideas and thoughts, or simply using wordplay or humor are observable indications of intellectual growth (Allen & Marotz, 2000; Berger, 2009).

"Most of the games we play require brainstorming especially since a lot of the games are played in teams. Thus, it leads me to start or join conversations and verbalize my thoughts related to the game plan for our team to win."

"During a dispute, you have to make an argument and justify your reasoning."

"In order to play with other kids, you had to learn how to talk to them first, or else you don't get to play at all."

Playing indigenous games also required logical reasoning and strategizing. Assessing the game situation, as well as studying and anticipating the game opponent's moves, are critical factors in winning, particularly when playing indigenous tactical games such as *Agawan-base*, *Dama*, *Patintero*, and *Sunka*, among others:

"*Sungka*, despite its minimal physical activity, stimulated my mind and helped me develop my remembering, counting, strategy, and problem-solving skills, as well as my writing skills by strengthening my fine motor skills while putting the shell or seed in each hole."

"Playing *Dama* improved my strategic thinking. It teaches you how to step back, and assess your current situation to know what your best next move is."

"Playing *Agawan-base* helps players develop their problem-solving skills. Everyone must have suitable approaches and techniques for entering the base."

Problem-solving skills were mostly cited among the cognitive skills promoted by indigenous games. It has been noted that many of the games generally require assessing consequences, evaluating the pros and cons, allowing for personalized techniques and strategies, and even solving conflicts and issues that may arise in the game. On the other hand, Memory-focused games such as *Sagidi-sagidi* were also mentioned as having game mechanics and concepts that must be memorized.

"*Sagidi-sagidi* requires you to remember and mimic the previous actions of the person who performed it before you, and you must recall it precisely in order to perform it correctly."

"Remembering the rules enable you to strategize how to play and win."

"Several games involve chanting (e.g., *Taguan*, *Langit Lupa*, etc.), which requires memorization."

"It is important to remember the details and concepts of the game to win for the team."

Remarkably, the women resonated more with memory and recollection, while the men mentioned more logical thinking and strategy-making themes. This differentiation of strengths between the sexes could be explained by the structural, functional, and processing differences between male and female brains (Lenroot & Giedd, 2010). Jantz (2014) explains that the brain's memory center, the hippocampus, is frequently bigger and typically has a higher density of neural connections in females. Girls and women consequently tend to input or absorb more sensory and emotional information than boys and men.

Comprehension is also another skill that emerged to highlight the cognitive ability of players to understand and apply the game rules and concepts. Players are challenged to comprehend more conceptual ideas such as strategy, logical reasoning, and situated learning (Plass et al., 2015) which may be experienced in many team games or board games.

“Understanding the situation before making a move is necessary in order to win.”

“I played the game well because I was able to understand the instructions and directions of the game.”

“Every game has a set of rules that a player must understand and follow. This set of rules helped me understand the do’s and don’ts of any game in order to win.”

Despite widespread agreement that playing Philippine indigenous games improves cognitive skills, some of the participants, 3.8%, largely men, expressed doubt about their cognitive development as a result of their playing experiences. The first reason argued that the ability to verbalize thoughts while playing board games and other native games is developmentally normal and playing the games does not have anything to do with it. The second claimed that the games they played required very little talking. The final reason points out that the games involve

more physical rather than cognitive processes such as identification, expression, and verbalizing of thoughts or feelings.

This, notwithstanding, 93% of the study participants (N=130), both men and women, still agree to the same extent that they benefited from playing Philippine indigenous games with the practice opportunities the games provided in exercising their cognitive abilities such as formulating, articulating, and communicating ideas and strategies; storing and recalling memories; and grasping, comprehending, or understanding meanings.

Playing Philippine Indigenous Games Promotes Socio-emotional Development

Data suggests that the socio-emotional support provided by playing Philippine indigenous games revolves around the games’ creation of connectedness, which links its participants in interactions that allow the building of relationships. 97.69% of the study participants (N=130) agree that playing Philippine Indigenous games fosters the acquisition of socio-emotional skills, with men and women equally convinced about this. Additionally, 95.38% of respondents (N=130) affirmed that playing the games promote socio-emotional growth, with women being 8% more optimistic about this than men.

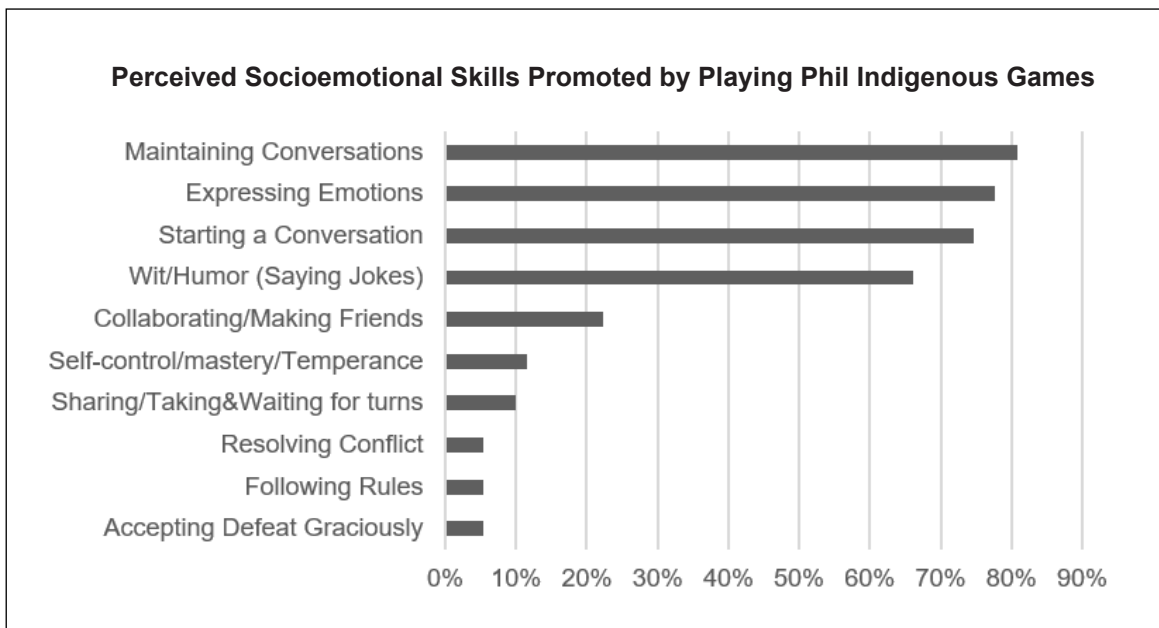


Figure 4. Socio-emotional Skills Developed

One of the most striking observations of this domain's findings is the participants' perception of the games' relative consistency in promoting communication, self-expression, and interactions (see figure 4). Making meaningful conversations that connect game participants with their fellow players and others in their play environment was found to be the most pronounced socio-emotional skill among the respondents (N=130). This includes the three most prominent socio-emotional skills, which they identified in ascending order, namely: (1) starting a conversation, 75%; (2) expressing emotions, 78%; and (3) maintaining a conversation, 81%. These identified socio-emotional abilities are backed by the other two next skills in the tier, also in ascending order, namely: (4) making friends, 22%; and (5) the ability to tell jokes, 66%. Altogether, these five most cited socio-emotional skills indicate that the competencies needed to be able to relate and rapport with others are profoundly promoted and valued by participants in playing Philippine indigenous games. They mentioned how their playmates became close friends with whom they shared more memories, and how their interactions taught them to consider other people's sensibilities with empathy, a skill that they find useful even in adulthood.

"Making friends and gaining a broader network of friendships was something I'd say I developed by playing it;

"Playing these games is one of the fondest memories I have with my friends. I learned how to build better relationships, handle misunderstandings, and communicate with people of varying ages."

"I was able to gain self-esteem, become more self-assured, and make friends. Playing the games teaches you self-discipline and how to be more sensitive to others."

Although they all appear to agree on the games' overall capacity to promote connectedness with others, the research participants generally acknowledge the breadth of variety of socio-emotional skills fostered by native Philippine games. The other socio-emotional skills mentioned included: self-control, self-mastery, and temperance; sharing or taking turns; following rules; resolving conflict; being gracious in defeat; resourcefulness; expressing confidence; independence; and taking roles and responsibilities.

"Accepting defeat gracefully is a valuable realization that, after all, playing the games is for fun, so we must accept any results that may occur."

"Resolving conflicts too, I can say, was something that I learned to do with the games."

"I realized I couldn't always get my way when it came to the games we should play, so I learned how to compromise, settle disputes, and exercise patience by waiting for my turn in games that called for it."

It was also observed that the most frequently mentioned socio-emotional skills involved in playing indigenous Philippine games are more of those that are externally oriented, such as self-expression to others, conversing, making friends, and engaging in contextual or transactional interactions. Through their play interaction with their peers, they learned the values of cooperation and sportsmanship. When they interacted with one another, it gave them a sense of identity, enabling them to understand their own advantages and disadvantages. The games effectively served as a platform for relationship building, social interaction, and learning about winning and losing. Players were able to express their emotions while playing helped them feel at ease and happier. Making jokes and using humor in communication highlighted their social skills and gave them the self-assurance to strike up conversations that took them outside of their comfort zones. This promoted wit and creativity, allowing for the creation of jokes, fun, and banter, all of which enhanced the overall quality of the experiences.

Internally oriented skills, on the other hand, such as reflection, restraint, and taking on roles and responsibilities such as self-conduct and coping in defeat, are among the lesser frequently mentioned socio-emotional skills, indicating a relative lack, or some challenges in these areas. The involvement of parents, teachers, coaches, or facilitating leaders, who would otherwise be in the best position to nurture inward-focused socio-emotional skills among children in play and games, appears to have been minimal to none in the respondents' Philippine indigenous game experience. In the lack or absence of facilitating supervision, socioemotional skill acquisition may be challenging for children as they navigate the unavoidable outcomes of the competition (Banks, 2019) such as conflicts and other common

expressions of violence like aggression, anger, bullying, trash-talking, or just plain accidents that may happen during the game:

“Sometimes you bump your head with your friends.”

“Early exposure to a lot of defeats made me familiar with the feeling of getting beaten. But accepting defeat gracefully isn’t something that is easily learned.”

“I also learned to occasionally be cruel and combative. Because the win-lose scenario is part of it, there is always a chance of losing and encountering unkind remarks.”

Given that interpersonal interactions and emotional processes have an impact on learning and can either support or hinder children’s development, welfare, and engagement, significant learning opportunities and the development of children’s socioemotional skills require effective adult mediation and facilitation (Cristóvo et al., 2020). Hence, play-based learning experiences should ideally involve post-activity processing, deconstruction, parsing,

and making meaningful associations, among other things, to bring out the ultimate learning outcomes. The process must include supportive environments, permissive learning settings, and effective instructional strategies to complete the whole learning experience (Darling-Hammond et al., 2020).

Philippine Indigenous Games and Holistic Benefits

The current study demonstrates how perceived benefits across multiple domains, particularly in the physical, cognitive, and socioemotional areas, combine and work together to describe the overall, holistic development experience for growing and learning children in the early formative years. (Fraser-Thill, 2021; Jayman & Tottman, 2021; Moore, 2019). When asked whether they thought their early exposure to Philippine indigenous games had benefited them in the three developmental domains, most study participants (N=130) gave a positive response (see Table 4), eliciting a mean evaluation of 95.26%, indicating that playing the games fostered Holistic Development for them.

Table 4: Holistic Developmental Domains that benefited the participants

Domains of Holistic Development	M		F		Agreed Totals		Summary
	n=56	%	n=74	%	N=130	%	
Physical Dev't							
Exercised Motor Skills	55.00	0.982143	69.00	0.932432	124.00	0.953846	
Experienced Physical Fitness Benefits	54.00	0.964286	70.00	0.945946	124.00	0.953846	
Ave1	54.50	0.973214	69.50	0.939189	124.00	0.953846	95.38%
Cognitive Dev't							
Promoted Cognitive Skills	53.00	0.946429	70.00	0.945946	123.00	0.946154	
Experienced Cognitive Support Benefits	52.00	0.928571	69.00	0.932432	121.00	0.930769	
Ave2	52.50	0.93750	69.50	0.939189	122.00	0.938462	93.85%
Socio-emotional Dev't							
Fostered Socio-emotional (SE) Skills	55.00	0.982143	72.00	0.972973	127.00	0.976923	
Experienced SE Support Benefits	51.00	0.910714	73.00	0.986486	124.00	0.953846	
Ave3	53.00	0.946429	72.50	0.97973	125.50	0.965385	96.54%
General Average							
Holistic Dev't Experience	53.33	0.952381	70.50	0.952703	123.83	0.952564	
	53	95.24%	71	95.27%	124	0.952564	95.26%

The respondents felt that playing the games gave them early exposure to physical activity, enabling them to learn and develop physical skills as their bodies underwent physical development. It helped them physically develop as the games exercised their bodies, fostered physical fitness benefits, and enhanced their physical traits. Although both male and female participants agreed that the games had a positive impact on their physical development, it was found that men showed this appreciation more strongly than women. Further, the participants agreed that playing the games also had beneficial impacts on their cognitive development, helping them to articulate thoughts, memorize and recall information, comprehend, and reason out dilemmas. Participants of both sexes agreed that the games had these beneficial effects on their cognitive development, but the women expressed this appreciation more fervently than the men. Finally, the participants agreed that playing Philippine indigenous games also helped them with their socio-emotional development which allowed them to connect, converse, empathize, make friends, and collaborate with others, with women expressing this perception more strongly than men. Ultimately, four prominent themes emerged as the main contents of the study participants' responses: larger-than-game Life Skill Applications (28%), expressions of Connectedness (25%), promoting Mental Strengths (25%), and developing Physical Strengths (22%), with the last two distinct between male and female results. The males tended to express physical strengths, while the females tended to express mental strengths.

Despite the nuances seen between the male and female participants' responses, and with the data indicating the overall affirmations on the positive impacts of playing Philippine indigenous games on all three developmental domains, the current study highlights the value of integrating the games in the early childhood development experience of Filipino children to help them experience the Holistic Developmental support that the games may provide. Holistic Developmental benefits identified in playing Philippine indigenous games exposed Filipino children to the necessary multi-domain stimulation in the critical formative years, ages 2 to 7, which correspond to Piaget's Preoperational stage of cognitive development (Allen & Marotz, 2000; Berk, 2012). In this stage, while immense growth in the brain happens, children begin to progressively perform more mentally challenging tasks. They learn

social and emotional skills, that enable them to relate to other people through socially acceptable means (Allen & Marotz, 2000; Berger, 2009). Furthermore, their early experiences imprint in them the values, norms, and patterns - including culture and heritage - that are best nurtured to assist them in perceiving, identifying, and situating themselves within the larger social circles around them (Berger, 2009). As a shared learning experience, playing Philippine indigenous games can thus provide the necessary multi-domain stimulation for Filipino children in their formative years, allowing them to reach their full physical, cognitive, and socio-emotional potentials while also learning their socio-cultural identities as Filipinos.

Limitations of the Study

Since the current study heavily relies on participant memory and retrospective thinking, conditions had to be created to help the completeness and accuracy of recall, such as providing generous time to complete questionnaires albeit time constraints. Furthermore, the study did not investigate how socioeconomic status might affect the quality of the participants' experience and appreciation of Philippine indigenous games. Recognizing how socioeconomic status may influence childhood play experiences, the researchers recommend future research initiatives to further investigate how this factor may or may not influence a child's perception, experience, and appreciation of Philippine indigenous games. Aside from this, other variable intersections such as age, gender, and ethnicity across the country's regions and sub-cultures continue to provide rich research opportunities. Future similar studies are recommended to consider cross-sectional, correlational, and long-term approaches to further enrich the discourse on Philippine indigenous games.

Limitations notwithstanding, the current study generated empirical evidence showing how playing Philippine indigenous games is seen to foster Holistic Development among Filipino children by exposing them to multi-domain learning in the critical formative years (Allen & Marotz, 2000; Berk, 2012). Early experiences in this developmental stage are the best opportunities to nurture lasting impressions and valuable lessons for children, such as language, socio-cultural values, practices, and traditions that help them perceive, situate, and identify themselves within the larger social circles around them at this formative stage (Berger, 2009). Consistent with

prior studies' findings, the current research confirms that playing Philippine indigenous games during early childhood years has been seen to promote holistic health, social aspirations, and shared values (Prestoza et al., 2020) while providing fertile grounds to learn, share and celebrate common roots, culture, heritage, and national identity (Hortelano et al., 2015; Mabborang et al., 2022).

However, adult support from parents, teachers, and coaches around these early childhood experiences is essential, as it is ideal and recommended to include post-activity processing, deconstruction, parsing, and facilitating meaningful associations that make up productive instructional strategies (Darling-Hammond et al., 2020). Without these, children may be confined by their own processing limits and be overcome by the game's competition-related potential adverse effects, such as conflict, aggression, and violence, given that games and play have generally been proven to also elicit conflict and violence (Banks, 2019; Goldstein, 2012), not only among players but also among spectators (Roberts & Benjamin, 2000). Thus, creating supportive learning environments would necessitate allowing permissive learning systems that can provide regulation and feedback through institutionalized and collaborative efforts. These types of relationships should be fostered by parents, teachers, coaches, and institutions, banking on adult mediation and facilitation to create essential learning opportunities for children's well-being, healthy development, and transferable learning (Darling-Hammond et al., 2020). Furthermore, acknowledging the inevitable rise of cyber-technology that resulted in advancements of, and preference for online sedentary games over Philippine indigenous games, parents, teachers, coaches, and institutions are placed in a pivotal role to mitigate risks and hazards of sedentary online gaming hours and extended screen time (Anderson, 2018; Stierlin et al., 2015; Park et al., 2020) and instead promote the more active Philippine indigenous games to prevent its decline (De La Cruz, 2018), preserve social identity (Edwards, 2009), national heritage (Hortelano et al., 2015; Mabborang et al., 2022) while promoting the benefits of holistic health and development for Filipino children.

CONCLUSION

This study added to the discourse on the holistic benefits of playing Philippine indigenous games, strengthening the assertions for why Philippine indigenous games are valued as an intangible national treasure deserving of international recognition, protection, and promotion, as stressed by the UNSECO. Philippine indigenous games have been seen to promote holistic benefits, particularly in the physical, cognitive, and socio-emotional developmental domains among children. When carefully executed in collaboration with regulating, mediating, or facilitating adults, playing Philippine indigenous games becomes a rich, enabling physical, cognitive, and socio-emotional learning experience for children. Philippine indigenous games have the power to promote social processes that foster connectedness, sex-differentiated strengths, motor skill transfer to contexts outside of games, and academic success. However, integration with other elements of psychosocial development must be purposefully pursued to avoid it operating in isolation or making claims of all-encompassing benefits for children. Notwithstanding its measurement limitations, this study succeeded in providing an empirical basis for revisiting, restoring, and revitalizing the games to sustain their positive indications and benefits as experienced by children in the 1980s prior to the games' decline in the new millennium. Future studies are recommended to consider correlational, cross-sectional, and long-term approaches across regions, sub-cultures, age, gender, and socio-economic groups to further enrich the discourse. Finally, respondents and their generation are recommended to teach Philippine indigenous games to the younger generation and provide adult supervision, mediation, and facilitation to foster knowledge skills and attitudes for gains of holistic development, health, and heritage.

Declaration of Conflicting Interests

The authors declare that this study is free of any conflict of interest.

REFERENCES

- Abenes, R. (2015). Genealogy of Male Domination in the Philippines. *Baybayin*, 1(August), 23–36.
- Aksholakova, A. (2014). Proper Name as a Clue Symbol of Identity. *Procedia - Social and Behavioral Sciences*, 112(Icepsy 2013), 465–471. <https://doi.org/10.1016/j.sbspro.2014.01.1190>
- Allen, K. E., & Marotz, L. R. (2000). *By the ages behavior & development of children pre-birth through eight*. Albany, New York: Delmar Thomson Learning.
- Anderson, J. (2018). Even Teens Are Worried They Spend too much Time in their Phones. Retrieved from: <https://qz.com/1367506/pew-research-teens-worried-they-spend-too-much-time-on-phones/>
- Armstrong, G., & Vest, E. (2012). Reflections on football in post-conflict Bosnia-Herzegovina. In K. Gilbert & W. Bennett (Eds.). *Sport, peace, and development*. (pp.151–162). Common Ground Publishing.
- Atwii, F., Sandvik, K. B., Kirch, L., Paragi, B., Radtke, K., Schneider, S., & Weller, D. (2022). *World Risk Report 2022 - Focus: Digitalization - World | ReliefWeb*. Bündnis Entwicklung Hilft. <https://reliefweb.int/report/world/worldriskreport-2022-focus-digitalization>
- Baillergeau, E., & Duyvendak, J. W. (2016). Experiential knowledge as a resource for coping with uncertainty: Evidence and examples from the Netherlands. *Health, Risk and Society*, 18(7–8), 407–426. <https://doi.org/10.1080/13698575.2016.1269878>
- Balite, P. H., & Robles, S. (2020). Philippine games: On the contemporary awareness and involvement of university students. *TALA: An Online Journal of History*, 3(1). Pp 47-57. <http://talakasaysayan.org/index.php/talakasaysayan/article/view/38>.
- Bavelier, D., Green, C. S., & Dye, M. W. (2010). Children wired: for better and for worse. *Neuron*, 67(5), 692–701. <https://doi.org/10.1016/j.neuron.2010.08.035>
- Banks, A. (2019). Is violence inevitable? *Psychology Today*. <https://www.psychologytoday.com/us/blog/wired-love/201906/is-violence-inevitable>
- Berger, K. S. (2009). *The developing person: Through childhood and adolescence* (8th Ed.) New York, New York: Worth Publishing.
- Berk, L. E. (2012). *Child development* (9th ed.). Upper Saddle River, New Jersey: Pearson Education.
- Booc, R. P., Rafaela, K. B., Torres, M. J., Bulawan, R. P., Jabonero, L. I. C., Cortuna, I. J. M., & Asuncion, J. E. (2019). The traditional Filipino games: Status check among generation Z. *International Scientific Journal of Theoretical & Applied Science*, 78(10), 150–152. <https://doi.org/10.15863/TAS>
- Broadhead, P. (2003). *Early years play and learning: Developing social skills and cooperation*. Routledge. <https://doi.org/10.4324/9780203465257>
- Calderon, J. (2006). *Methods of research and thesis writing* (2nd Ed.). National Bookstore.
- Carmen, M. V. del, Diano, F., Morales, M. P. E., & Ole, A. (2015). Promoting physics in action thru “Laro Ng Lahi-Based” physics activities. *International Journal of Learning and Teaching*, 07(1), 24. <https://doi.org/10.18844/ijlt.v7i1.1>
- Cole, H., & Griffiths, M. D. (2007). Social interactions in massively multiplayer online role-playing gamers. *Cyberpsychology and Behavior*, 10(4), 575–583. <https://doi.org/10.1089/cpb.2007.9988>
- Consalvo, M. (2009). There is no magic circle. *Games and Culture*, 4(4), 408–417. <https://doi.org/10.1177/1555412009343575>
- Cristóvão, A. M., Candeias, A. A., & Verdasca, J. L. (2020). Development of Socio-Emotional and Creative Skills in Primary Education: Teachers’ Perceptions About the Gulbenkian XXI School Learning Communities Project. *Frontiers in Education*, 4(160), 1–12. <https://doi.org/10.3389/educ.2019.00160>
- Cronkleton, E. (2019, Jan 23). How to Do 8 Different Plyometric Exercises. <https://www.healthline.com/health/exercise-fitness/plyometric-exercises>
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>

- Davies, G., Riemann, B. L., & Manske, R. (2015). Current concepts of plyometric exercise. *International journal of sports physical therapy*, 10(6), 760–786.
- De La Cruz, C. I. (2018). We May Soon Have National Competitions for Filipino Games. <https://www.spot.ph/arts-culture/the-latest-arts-culture/76458/congress-approves-philippine-indigenous-games-preservation-act-a833-20181228>
- Dimaiwat, M.A., & Bautista, X.C. (2020). The forgotten national sport. *The Guidon*. <https://theguidon.com/1112/main/2020/06/the-forgotten-national-sport/>
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.
- Edwards, K. (2009) Traditional games of a timeless land: Play cultures in Aboriginal and Torres Strait Islander communities. *Australian Aboriginal Studies*, 2, 32-43.
- Etikan, I., Musa, S., & Alkassim, R. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Fraser-Thill, R. (2021, November 27). *Major Domains in Child Development*. <https://www.verywellfamily.com/definition-of-domain-3288323>
- Gentile, D. A., Reimer, R. A., Nathanson, A. I., Walsh, D. A., & Eisenmann, J. C. (2014). Protective Effects of Parental Monitoring of Children's Media Use. *JAMA Pediatrics*, 168(5), 479. doi:10.1001/jamapediatrics.2014.1
- Goldstein, J. H. (Ed.). (2012). *Sports violence*. Springer Science & Business Media.
- Guest, A. M. (2009). The diffusion of development-through-sport: Analyzing the history and practice of the Olympic Movement's Grassroots Outreach to Africa. *Sport in Society*, 12 (10), pp. 1336–1352. doi:10.1080/17430430903204868
- Guest, A. M., & Mcrec, N. (2009). A school-level analysis of Adolescent Extracurricular Activity, Delinquency, and Depression: The importance of Situational Context. *Journal of Youth Adolescence*, 38, pp. 51–62. <https://doi.org/10.1007/s10964-008-9279-6>
- Guinto, M. L. M., & Logan, I. L. N. (2021). Harnessing the power of sport for disaster recovery. *Qualitative Research in Sport, Exercise and Health*, 1–18. <https://doi.org/10.1080/2159676X.2021.1922493>
- Grushevitskaya T. G., Popkov V. D., Sadokhin A. P. (2002). *The basis of intercultural communication*. M.: Unity-Dana.
- Hamafyelto, S., Garba, H., & Nhahi, M. P. (2017). "Utilization of sports and games for psychosocial rehabilitation of internally displaced persons in Maiduguri, Nigeria. *International Journal of Sports Science*, 76(6), pp. 227–232.
- Herrin, A. N. (1979). Rural Electrification and Fertility Change in the Southern Philippines. *Population and Development Review*, 5(1), 61–86. <https://doi.org/10.2307/1972318>
- Hobfoll, S.E., Watson, P., Bell, C. C., Bryant, R. A., Melissa, J., Friedman, M. J., Friedman, M., Gersons, B. P. R., Jong, T. V. M. De, Layne, C. M., Maguen, S., Neria, Y., Ann, E., Pynoos, R. S., Reissman, D., Ruzek, J. I., Shalev, A. Y., Solomon, Z., Steinberg, A. M., & Ursano, R. J. (2007). Five Essential Elements of Immediate and Mid-Term Mass Trauma Intervention: Empirical Evidence. *Psychiatry*, 70(4), 283–315.
- Hortelano, R., Juan, J. P., & Tindowen, D. J. (2015). Indigeneous Games of the Agtas of Peñablanca, Cagayan. *Bannag: A Journal of Local Knowledge*, 2(1), 1–5.
- Ifenthaler, D., Eseryel, D., & Ge, X. (2012). *Assessment for Game-Based Learning*. Springer.
- Jantz, G.L. (2014, February 27). *Brain Differences Between Genders*. Psychology Today. <https://www.psychologytoday.com/us/blog/hope-relationships/201402/brain-differences-between-genders>
- Jayman, M., & Tottman, P. (2021). Supporting children's healthy socio-emotional development through play: Book of beasts – the mental wellness card game. In M. Jayman, M. Ohl, and L. Jewett (Eds.), *Supporting new digital natives: Children's mental health and wellbeing in a hi-tech age* (1st ed., pp.41-59). Bristol University Press.

- Kent, S. L. (2001). *The ultimate history of video games: From Pong to Pokémon and beyond—The story behind the craze that touched our lives and changed the world*. Three Rivers Press.
- Keyton, J., King, T., Mabachi, N. M., Manning, J., Leonard, L. L., & Schill, D. (2004). *Content analysis procedure book*. Lawrence, KS: University of Kansas.
- Labana, R. V., Hadjisaid, J. L., Imperial, A. R., Jumawid, K. E., Lupague, M. J. M., & Malicdem, D. C. (2020). Online Game Addiction and the Level of Depression Among Adolescents in Manila, Philippines. *Central Asian Journal of Global Health*, 9(1). <https://doi.org/10.5195/cajgh.2020.369>
- Lai, N. K., Ang, T. F., Por, L. Y., & Liew, C. S. (2018). The impact of play on child development - a literature review. *European Early Childhood Education Research Journal*, 26(5), 625–643. <https://doi.org/10.1080/1350293X.2018.1522479>
- Las Johansen, B. C., & Mores, J. E. (2013). Audience Perceptions on the Probable Transformation of Laro ng Lahi into Dance. *IAMURE International Journal of Multidisciplinary Research*, 5(1), 1-1.
- Laureta, I. (2015, September 15). 20 Things Filipino Kids Did Before the Internet Existed. Retrieved July 6, 2019, from <https://www.buzzfeed.com/isabellelaureta/isang-daang-porsyento>
- Lenroot, R. K., & Giedd, J. N. (2010). Sex differences in the adolescent brain. *Brain and cognition*, 72(1), 46. <https://doi.org/10.1016/j.bandc.2009.10.008>
- Maborang, F. D., Suarez, A., Dacuycuy, M. C., Malapira, D. J., & Agag, R. (2022). Street games in Filipino society in selected rural towns of Ilocos Norte. *Asian Research Journal of Arts & Social Sciences*, 18(1), 10–17. <https://doi.org/10.9734/ARJASS/2022/v18i130322>
- Maranan, M. (2019). Perceptions on indigenous games of students of Sta. Catalina National High School. *Ascendens Asia Journal of Multidisciplinary Research Abstracts*, 3 (2G),
- Mattson, K. (2001). Did Punk Matter? Analyzing the Practices of a Youth Subculture During the 1980s. *American Studies*, 42(1), 69–97. <http://www.jstor.org/stable/40643156>
- Maheshwari, V. K., Ph.D. (2017, September 3). Sampling Techniques in Quantitative Research. <http://www.vkmaheshwari.com/WP/?p=2455>
- Mckay, S. (2011). Re-Masculinizing the Hero: Filipino Migrant Men and Gender Privilege. In *Asia Research Institute Working Paper* (No. 172). www.nus.ari.edu.sg/pub/wps.htm.
- Meldrum, D. R., Morris, M. A., & Gambone, J. C. (2017). Obesity pandemic: causes, consequences, and solutions-but do we have the will? *Fertility and sterility*, 107(4), 833–839. <https://doi.org/10.1016/j.fertnstert.2017.02.104>
- Mccracken, K., & Colucci, E. (2013). *Using sport and play to achieve educational objectives*. Right To Play. www.righttoplay.com
- Mcvittie, C., Hepworth, J., & Goodall, K. (2017). Masculinities and health: Whose identities, whose constructions? In *The psychology of gender and health* (pp. 119–141). Elsevier Inc. <https://doi.org/10.1016/B978-0-12-803864-2.00004-3>
- Moghaddaszadeh, A., and Belcastro, A. N. (2021). Guided active play promotes physical activity and improves fundamental motor skills for school-aged children. *Journal of sports science & medicine*, 20(1), 86–93. <https://doi.org/10.52082/jssm.2021.86>
- Moore, M. R. (2010). Adaptation and new media. *Adaptation*, 3(2), 179–192. <https://doi.org/10.1093/adaptation/apq010>
- Moore, R. (2019). *Childhood's domain: Play and place in child development*. Routledge.
- Mwaanga, O. (2010). Sport for Addressing Hiv / Aids : Explaining. In *LA Newsletter* (Issue 85).
- Pollard, E. L., & Lee, P. D. (2003). Child well-being: a systematic review of the literature. *Social Indicators Research*, 61 (1) 59–78. doi:10.1023/a:1021284215801
- Park, J. H., Moon, J. H., Kim, H. J., Kong, M. H., & Oh, Y. H. (2020). Sedentary Lifestyle: Overview of Updated Evidence of Potential Health Risks. *Korean journal of family medicine*, 41(6), 365–373. <https://doi.org/10.4082/kjfm.20.0165>
- Philippine Daily Inquirer (2017, June 25). In the know. *Inquirer. Net*. <https://sports.inquirer.net/253464/in-the-know-2>

- Plass, J. L., Homer, B. D., & Kinzer, C. K. (2015). Foundations of Game-Based Learning. *Educational Psychologist, 50*(4), 258–283. <https://doi.org/10.1080/00461520.2015.1122533>
- Prestoza, M. J. R., Paludipan, C. P., & Abad, A. E. (2020). Perception of Elementary School Teachers on Laro ng Lahi in Quirino, Isabela. *International Journal of Linguistics, Literature, & Culture, 6*(3), 1–8. <https://doi.org/10.22251/jlcci.2020.20.2.1307>
- Republic of the Philippines House of Representatives. (2018). House approves bill preserving indigenous games. 19th Congress, 1st Regular Session Press Release. <https://www.congress.gov.ph/press/details.php?pressid=11141>
- Roberts, J., and Benjamin, C. (2000). Spectator Violence in Sports: A North American Perspective. *European Journal on Criminal Policy and Research 8*, 163–181. <https://doi.org/10.1023/A:1008753024786>
- Romizowski, A. (2009). The Development of Physical Skills: Instruction in the Psychomotor Domain. In C.M. Reigeluth (Ed.) *Instructional Design Theories and Models Vol II*. (pp. 457-582). Routledge.
- Roque, L., Terena, M., Calfin, J. A., & Terena, T. (2017). *World indigenous games-Celebrating is what matters!* UNDP-UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000249216>
- Salazar, J. T. (2019). Rethinking Filipino Masculinities: The Case of the Cosmopolitan Tambay. *Archium Ateneo-Kritika Kultura*, 859–882. <https://archium.ateneo.edu/filipino-faculty-pubs>
- Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research, 3*(7), 749–752.
- Sirias, D., Karp, H.B., & Brotherton, T. (2007). Comparing the levels of individualism/collectivism between baby boomers and generation X: Implications for teamwork. *Management Research News, 30* (10), pp. 749-761. <https://doi.org/10.1108/01409170710823467>
- Siregar, N.R., & Ilham, M. (2019). Traditional games as a way for health in Bajo's children. *KnE Life Sciences. http://dx.doi.org/10.18502/kls.v4i11.3848*
- Smith, L. (2013). Working hard with gender: Gendered labour for women in male dominated occupations of manual trades and information technology (IT). *Equality, Diversity and Inclusion, 32*(6), pp. 592–603. <https://doi.org/10.1108/EDI-12-2012-0116>
- Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research and Evaluation, 7*(17), pp. 1–6. <https://doi.org/10.1362/146934703771910080>
- Stierlin, A. S., De Lepeleere, S., Cardon, G., Dargent-Molina, P., Hoffmann, B., Murphy, M. H., Kennedy, A., O'Donoghue, G., Chastin, S. F. M., & De Craemer, M. (2015). A systematic review of determinants of sedentary behaviour in youth: A DEDIPAC-study. *International Journal of Behavioral Nutrition and Physical Activity, 12*(1). <https://doi.org/10.1186/s12966-015-0291-4>
- Taherdoost H. (2017). Determining Sample Size; How to Calculate Survey Sample Size. *International Journal of Economics and Management Systems, 2*(1), 237–239. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3224205
- Topper, A. (2022, Feb 21). As children grow: Developmental domains. <https://study.com/learn/lesson/developmental-domains-child-development.html>
- UNITF-SDP (United Nations Inter-Agency Task Force on Sport for Development and Peace). (2003). *Sport for Development and Peace: Towards Achieving the Millennium Development Goals*. <https://www.unicef.org/sports/reportE.pdf>
- Vargas, A. (2019). House Bill 2008: An act institutionalizing sports varsity teams in elementary and secondary schools and for other purposes. https://hrep-website.s3.amazonaws.com/legisdocs/basic_18/HB02008.pdf
- Weinstein, A., & Lejoyeux, M. (2010). Internet addiction or excessive internet use. *American Journal of Drug and Alcohol Abuse, 36*(5), 277–283. <https://doi.org/10.3109/00952990.2010.491880>

Wiedemann, N., Ammann, Pi., Bird, M., Engelhardt, J., Koenan, K., Meier, M., & Schwarz, D. (2014). *Moving together* (1st ed.). International Federation of Red Cross and Red Crescent Societies Reference Centre for Psychosocial Support (PS Centre). <https://doi.org/10.1038/s41579-019-0165-x>

Wolf, M. J. P. (2012). *Building imaginary worlds: The theory and history of subcreation*. Routledge.

World Health Organization. (2019, April 24). To grow up healthy, children need to sit less and play more. Retrieved July 8, 2019, from <https://www.who.int/news-room/detail/24-04-2019-to-grow-up-healthy-children-need-to-sit-less-and-play-more>

Wu, X. Y., Han, L. H., Zhang, J. H., Luo, S., Hu, J. W., & Sun, K. (2017). The influence of physical activity, sedentary behavior on health-related quality of life among the general population of children and adolescents: A systematic review. *PloS one*, 12(11), e0187668. <https://doi.org/10.1371/journal.pone.0187668>

Young, A. (2015, Jan 24). *Traditional Filipino Games (Laro ng Lahi)*. Volunteer for Visayans, Inc. <http://www.visayans.org/traditional-filipino-games-larong-lahi>

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