

## Integrating Educational Modules for Children with Chronic Health and Dental Issues: Premise for Community-based Intervention Framework in Developing Country

**Ma. Cecilia D. Licuan, PTRP, MAE, Ph.D.**

De La Salle Health Sciences Institute  
Dasmarinas City, Cavite, Philippines

**Abstract.** This paper consolidated the developmental initiatives and principles of two major researches conducted regarding children with disabilities in the Philippines that focused on chronic health and dental issues using the independent studies of Licuan (2009) and Laguilles (2008) as take-off point to recommend a Community-based Intervention Framework in a developing country. Given the two consolidated studies, this paper conceptualized and recommended a framework to enhance the services for these children in the Philippines who are prone to having health complications that are chronic and dental in nature for application in the grassroots or primary level of the country's health care and educational delivery systems which is community-based and school-based given feasibility for application at the preparatory basic education and special education levels as well as at the smallest unit of the Philippine community - the barangay. The study looked into the present demographics of children with chronic health and dental issues utilizing the Province of Cavite as the micro-represented research locale. Together with the profile review, the respondents' access to health and education services were reviewed vis' a vis' the nature and implications analyses of their condition, family profile and economic status. All of these variables were factored-in to develop the framework that included the developmental guidelines, paradigm and new educational module frames that will be used as recommended platform for a succeeding study that will yield to the development and validation of completed educational modules. This in turn will be distributed and used by the families of children with chronic health and dental health conditions as well as the barangay health workers and concerned teachers to better the lives of the children with such conditions with the intent of instructional materials utilization not later than the year 2017 using the Province of Cavite as benchmark locale in the Philippines.

**Keywords:** community-based intervention framework; children with disabilities; chronic health issues; dental issues; health school-based intervention.

## **Introduction**

Disability in a layman's perspective is the lack of ability to function thereby affecting performance of roles. The World Health Organization defines it using the "bio-psycho-social model" which looks at it in general perspectives on elements of bodily impairments, personal activity and participation in society that interplay on the negative impact of the person's health condition and the environmental and personal factors of his/her life (WHO, 2011). Considering a global and macro perspective, over a billion or less than sixteen percent of the globe have disability and the rates are increasing due to chronic health illnesses as one of the factors. In the Philippines alone, the National Statistics Office has reported that for every one thousand Filipinos, sixteen will have disability. The entire household in the Philippines will have about 1.6 per cent with disability given the 2010 population and housing census. Among all the regions in the country, Region IV-A has the highest where the research locale - Cavite is situated. And as of the estimated population of persons with disabilities, the greatest number fall in the age group of 5-19 years old and 45 to 64 years old. Children aged 10 to 14 years old comprised the largest age group among those in the younger range.

Concurrently, oral health is also one of the most neglected aspect of life among children especially those with disabilities. Laguilles (2008) in her paper noted that tooth decay is even more predominant than other disease likes asthma and other infections. Pediatricians in the United States even noted that it is a silent epidemic and the needs related to such cases are unmet (Barnett, 2002). Poor oral health contributes to other illnesses like pneumonia hence there is a need to address it in advance by preventing potential problems via early parental involvement (Norwood & Slayton, 2008). In considering such, early exposure to proper oral health care and treatment would be beneficial in preventing unwanted pain and suffering and eventually improving the lives of children with disabilities. In addition, neglected oral health care can be costly and may only complicate standard treatment procedure (Newacheck et al. 2000 as cited in Laguilles, 2008).

The challenges of persons with disabilities face including those that children with chronic health and dental issues experience, are also faced with lack of access to services including health and education thereby leading to unmet needs (Baker & Donnelly, 1992; Kuper et al., 2014; WHO, 2011). Children with disabilities experience these impact brought about by their situation placing them as part of the marginalized sector of the community tied with discrimination, negative attitudes of people, lack of policies and legislations to protect them which runs into a cycle that yields to deprived rights to health care, education, quality of life and even survival in worst case scenarios (UNICEF, 2013).

Sobe and Kurtin (2007) emphasized how much the educational system plays a major role in the lives of children through relevant educational programs which encompass special services and programs for children with health challenges so they can be served appropriately in the educational system. In the Philippines,

the National Statistics Office report in 2010 stated that about 97% of the children with special needs are not reached by the public education system. The implications of this situation is explicated by Posarac (2012) which explained that poverty increases the risk of disability through related poor health conditions and its related determinants which may lead to the onset of chronic malnutrition, lack or inadequate public health intervention, poor living conditions and unsafe work environments. He further noted that this can be aggravated by lack of services that should have been available. More than this, chronic health problems in children will have its effects in schooling and relationships Collaboration is needed to promote services and limit the restrictions for these children (Licuan, 2009)

This study recognizes the importance of looking into the profile and related factors concerning children with chronic health and dental issues and analyzing its implications in health and education services as springboard for the development of a community-based intervention framework. This yields to the creation and implementation of educational modules that can be used and applied in the grassroots or primary level of the country's health care and educational delivery systems primarily at the barangay level and preparatory basic education and special education levels, respectively. This developmental study attempted to cross the limitations posted upon by the barriers to services that children with disabilities especially those with chronic health conditions in a developing country, especially those with chronic health and dental issues, faces hence help achieve optimal outcomes for their lives.

### **Research Design of the Study**

Anchored on the study's paradigm (Licuan, 2015) presented in Figure 1, the data gathered describes the profile and status of access of children chronic health and dental issues as well as explains the implications of these variables in the quality of life of the respondents through narratives. Mixed method research design was used thereby examining real-life contextual understandings, multi-level perspectives, and cultural influences. Magnitude and frequency of constructs are described through quantitative arm of the design, but the meaning and understanding of such constructs are explored by its qualitative research arm. This mixed-method design was fundamental in gathering the holistic interpretative framework in the generation of potential solutions or new understanding of the problem (Creswell, 2014; Dominguez, 2014; Hesse-Biber & Nagy, 2010; Niglas, 2009; Onwuegbuzie, & Leech, 2006; Tashakorru, A. & Creswell, 2007; Zhanga, 2014). And since the results of the study paves the way for the development of educational module guidelines, paradigm and framework for practice and implementation in community-based setting (i.e. schools and barangay), it can also be factored-in that action research design is integral to the paper.

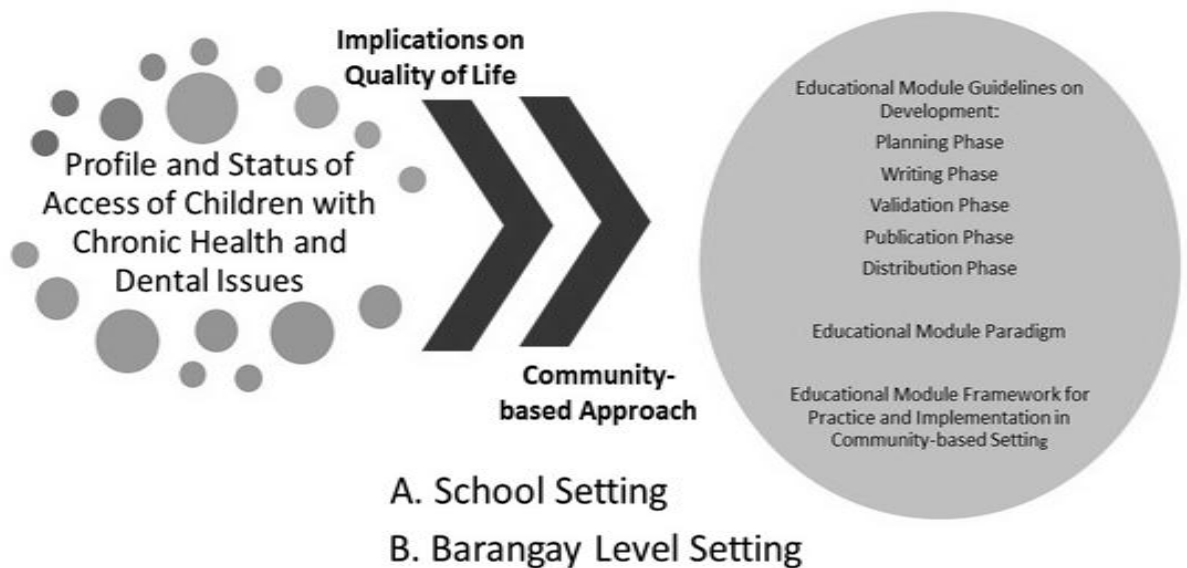


Figure 1. Paradigm of the Study (Licuan, 2015)

### Significance of the Study

The study's end goal is the development of a community-based intervention framework for a developing country like the Philippines as basis for the creation and utilization of educational modules for children with chronic health and dental issues which will help in promoting both health and education services despite the impact of poverty and disability in their quality of life. The ultimate outcomes of the research paper benefits the children with chronic health and dental issues especially in developing countries since it promotes access to services, both health and education in nature, that will help address their needs at an earlier period which then aides in deterring or even lessening the negative impact of their condition. Such will facilitate and promote activity and social participation thereby promoting quality of life.

The parents/caregivers, teachers of children with chronic health and dental issues as well as community workers particularly the barangay level health advocates also benefit from this study as they learn new ways of helping the child achieve the benefits of education through utilization of basic instructional strategies following the educational modules that will be developed based on the proposed framework. The educational framework and eventually the modules developed in this study will increase health literacy as generalized in community and educational settings hence empowering the stakeholders. Feldman (1989) has noted how crucial education is for better health.

### The Statement of the Problem and Objectives of the Study

The study aimed to find out what community-based intervention framework can be developed for a developing country like the Philippines as basis for the creation and utilization of educational modules for children with chronic health and dental issues which will help in promoting both health and education services despite the impact of poverty and disability in their quality of life. Anchored on such general problem, the study specifically answered the research

questions that determined the children's profile (*e.g. health condition, family situation and economic status*) and services (*health and education*) access status in the research locale which serves as micro-representation of a developing country- the Philippines. Moreover, it aimed to analyze the implications of the profile and access status as bases for developing the desired framework.

### **Method of Procedure**

The study is basically a mixed quantitative-qualitative in design. Profile and access to services survey questionnaires and interview checklist were used tools were used to gather data. It was validated by experts in the field of rehabilitation medicine, dentistry, special education and allied health consultants who are clinical practitioners in the field of occupational therapy and speech and language pathology. Descriptive statistics specifically frequency distribution, percentage, and mean as well as thematic analysis were used to interpret the findings of the study. The subjects of the study were children with neuromotor disabilities with developed or likelihood of developing chronic health and dental issues. Purposive sampling was used gathering 112 children, less than 18 years from the top three cities of Cavite province given the highest population namely Dasmarinas, Imus and Bacoor. Conceptual mapping of information gathered was used to scaffold and develop the framework proposal as outcome of the study. Given the profile of the subjects, 65/112 or 58% were diagnosed of cerebral palsy of varying kinds ranging from mild to severe presentation of health challenges; 15/112 or 13% with genetically-related syndromes or condition and 32/112 or 29% belong to varying undiagnosed conditions presenting with motor; cognitive and sensory problems. Mean age of the subjects was 10 years with the youngest age presented as 5 years old and oldest at 18 years. The inclusion criteria for age was limited between the age 4 to 21 years covering pediatric age span whereby schooling can be started ideally at the day care or preparatory school at 4 years and transition schooling ending at the age of majority which is 21 years.

### **Collection of Data**

Population screening and selection of qualified respondents were done given the data retrieved from the offices of the local government units of the representative cities of the research locale in-charge of persons with disability affairs. Consent of the qualified respondents was taken. After which, data to answer the objectives of the study were gathered by letting the respondents answer the research instruments which dealt on determining the profile (*e.g. health condition, family situation and economic status*) and services (*health and education*) access status. Respondents were guided in understanding the questions if they are not able to read. Interview method was utilized to gather other significant information that may come out related to the study outside what is incorporated in the survey tool. Implications of the profile and access status as bases for developing the desired framework were also explored during the interview process. To facilitate a more cooperative nature in the interview process, the 112 respondents and their families or caregivers were grouped by

location and were also subjected to focus group discussions scheduled in series of meetings spread in a three-month period.

### **Treatment of Data**

The profile (*e.g. health condition, family situation and economic status*) and services (*health and education*) access status were treated using basic statistical methods involving frequency distribution, percentage and mean. Data gathered during the interview process to gather implications were processed using thematic analysis of the information used in qualitative research design whereby patterns of the information gathered were determined through data familiarization, codes and themes. (Braun and Clarke, 2006).

## **Findings**

### **Profile of the Respondents**

Results of the study showed that 78 out of 112 or 70% of the child respondents of the study have *chronic health issues* associated with their condition including, but are not limited to, frequent cough and colds (48%), asthma (34%), pneumonia (28%), bed sores (15%), and others (10%) [i.e. accidental wound/scratches or skin problems and insect bites; fainting/dizziness, and swallowing problems]. *Dental issues* on the other hand have 96% occurrence presented as 107 out of 112 among the respondents of the study, whereas 4% or 5/112 were uncertain of their answers. Dental issues expressed by the respondents show that halitosis, known in layman as bad breath (87%), was the most common complaint followed by the personal issue of the child being afraid of the dentist (74%), dental caries (67%), pain (46%), bleeding gums (29%) and others (14%) which included tongue or lip injury and oral sores.

Respiratory illness is common to children and it can be acute or chronic in nature given genetic, environmental factors or both (JAMA, 2010). Asthma is the most common problem between children ages 5 to 14 years old (Asher, I & Pearce N, 2014) and Pneumonia is the most common reason for death of severely disabled children. Seddon and Khan (2003) noted that several factors lead to such problems not limited to poor nutrition, frequent aspiration, poor coughing and ability to clear airway. Skin problems are also common among children with disabilities due to limited skin sensation and inactivity (Wach & Sheehan, 2013).

Oral health is no exception in terms of issues that affect children with disabilities. Dental caries is common brought about by prolonged bottle feeding matched with poor oral hygiene and occlusion problems (Laguilles, 2008 & Zemani, 2006). All of these can elicit the common symptom of pain (Oliva, Kenny, & Ratnapalan, 2008) which serves as the most common reason for emergency dental visits (Shqair, A. et al., 2012). Tartar formation leading to halitosis or bad breath is also a dental issue. All these validates the importance of dental visits to keep the gums and teeth healthy (CFD, 2016), however such is disliked by children because of fear of injection and extraction (AlSarheed, 2011).

The variable measured concerning the family situation yielded to 100% response as *compromised* where 96% (108/112) responded *highly* compromised while the remaining 4% *moderately* compromised. Majority justified their compromised situation answer by the complexity of their life in terms of addressing the needs of the child's health, education and finances together with other family issues particularly the need for food, stable work and other family member's daily demands. The variable on economic status showed that 34/112 or 30% of the respondent's family belong to middle class, 45/112 or 40% within poverty line, 33/112 or 20% below poverty line.

The relationship of poverty and disability has been strongly established. The former can cause the latter and the latter can be complicated by the former (WHO, 2012). Children belonging to poor families are more likely to experience the negative impact of their disability compared to families who belong to upper societal class (World Bank, 2009; Walker, S. et al., 2007) given the risks which Grantham-McGregor S et al. (2007) and Walker SP et al. (2011) identified.

### **Access to Services**

The variables measured related to the status of access to services showed that among the 112 respondents 66 or 50% have *accessed* and 66 or 50% have *not accessed* health services. Top three reasons for non-access to health are attributed to fear of expenses given financial limitations, transportation and lack of knowledge on available medical experts who can render services that are preferred by respondents to be free of charge. This can be related to the factor that greatly influenced health access of which majority is achieved through medical mission consultations and nearby city health hospital services giving free consultations. Among those who have accessed health, 45/66 or 68% have accessed it *inconsistently* and 21/66 or 32% *consistently*. Reasons for inconsistency in health access showed barriers related to finances, transportation and accessibility of nearby health facility as detriments.

Educational services variable on the other hand, showed that 60/112 or 54% respondents have *accessed* education and 40/112 or 36% have *not accessed* it. Respondents are able to access education through the free public school regular and special education system. The top three primary reasons for non-access on the other hand were due to the perception that education is not anymore relevant for the condition of the child, expenses related to education, and availability of family member or caregiver to attend to the daily demands of bringing the child back and forth to school. Among those who have accessed education, 35/60 or 59% have accessed it *inconsistently* and 25/60 or 41% *consistently*. Inconsistency in access showed barriers related to finances, availability of person to bring the child back and forth to school and lastly at equal presentation are factors related to transportation and accessibility of nearby school or educational facility as detriments.

Health and education services are crucial to better the lives of special children in the community. Such children are prone to deprivation of basic treatment even vaccinations (United Nations Children's Fund, Innocenti Research Centre, 2007)

which is detrimental to their situation. Suitable health care and nutrition enables them to live longer and helps them improve their developmental capacity (Kerac et al. 2012).

As children with chronic health and dental issues grow older, education introduced at an early age becomes fundamental in the success of their learning and development (Education for all global monitoring report, 2007). The problem, however, is that they are introduced late, sometimes denied of access to schooling or does not stay long in the system when introduced (WHO, 2012; Filmer, 2008). UNESCO (2009) noted that children who are not in schools are most likely the once with disabilities. Special children in schools however are often segregated and are receiving poor-quality learning opportunities (WHO, 2012).

Additional educational accommodations and modifications as well as related services like therapeutic rehabilitation are also needed by these children. The challenge however is that majority of those services are inadequate and if available are expensive, promoting segregation and are rarely available. (Engle, 2007; United Nations Children's Fund, Innocenti Research Centre, 2007; United Nations Children's Fund, 2008; McConachie , 2001).

### **Implications of the Profile and Access Status**

Thematic analysis of the data gathered during the interview process and focus group sessions yielded to three major themes regarding the implications of the profile and access status as bases for the development of the community-based intervention framework.

#### **Theme 1: Health as a Priority**

Analysis of narrative data gathered among the respondents related to the profile and access to services showed that health, inclusive of medical and dental nature associated with the child's condition, as a priority is considered but not apparent in the practice and actual life situation of the respondents. Children with chronic health and dental issues who were able to answer the interview questions realize how important their body functioning is when they are symptomatic and the family or caregivers also put health of the child as a priority only during such times of symptomatic episodes. Preventive measures, however, like regular preventive check-ups and health/dental monitoring, are not yielding as priority where financial situation are factored-in and other basic family needs considering the welfare of the family (i.e. food, shelter, work stability) are prioritized. There is also a common concern for the expenses incurred and related to medical (including therapy sessions) and dental services. Medical-Therapeutic and dental services are perceived to be expensive with a notion that such services specific for their child are more specialized hence more expensive compared to regular individuals without disability. It is also apparent that health as a priority for the child with chronic health and dental issues are also reflective of the same priority expressed by the families of the respondents to themselves. Even the family or caregivers who participated in the study believes and practices that visit to health professional are only done when the situation highly demands of it. There is no need for consultation if home remedies can be



done and if the finances are scarce which is still strongly subjected to the more important priorities of food, shelter and work stability.

Successful life outcomes can happen if the parents and families of these children experience economic security and services access (United Nations, 2010). Social protection programs to overcome barriers will be crucial which requires coordination between different servicing sectors (UNICEF, 2012 & Mont, 2006). Early intervention action is a vital element embedded in the regular delivery system (WHO, 2012).

## **Theme 2: Education and Family Dynamics**

Education in the eyes of children with chronic health and dental issues are seen as an enjoyable task by the majority of the child respondents. They appreciate the social aspects attached to their school participation and integration. Such variable, however, is not seen as a priority by the family or caregivers of the child. The existing perspective that their children can only do so much and will not really be able to experience the benefits of education like independence and future work exists as a major deterrent affecting the access and participation of the child in school. Other priorities further interfere with this perspective considering the basic needs of the family whereby food, shelter obligations (e.g. home rental, utilities etc.) and other more important obligations considered by other members of the family that must be attended-to are dominantly expressed. Given commonly expressed limitations in finances, education and its related expenses are prioritized for non-disabled siblings or members of the family and the child is commonly left at home as reflected in the responses given by respondents who have not at all accessed education or were able to access it inconsistently. The family situation whereby existing parents of the child, if present, are commonly pre-occupied with obligations to earn for the family is also apparent. This scenario commonly leaves the child attended-to by the grandparents or other non-working relatives or in worse scenario by the neighbor expressed by about 7/112 or 6% of the respondents. It was also apparent during the interview and focus group sessions that the basic family unit comprising of immediate family members is also challenged among majority of the respondents. About 68/112 or 61% of the families where the child is affiliated have extended families living in their household. This means that more than the main family involved with the child, relatives connected as in-laws given expansion of the family are still living in the same household which complicates the family dynamics given financial and social demands.

Bonding of family members and children with chronic health and dental issues are vital for the protection, development and welfare of these children. Bonding starts with acceptance of own family members which later transcends to the community level. It is important that services are made available to help parent and family members gain proper and accurate knowledge and skills (Simeonsson , 2000) to support and advocate the need of their child with

disability. Service providers must work closely with the families of these children in coming up with culturally appropriate and effective programs (Gabarino & Ganzel, 2000; Garcia & Magnuson, 2000; Lynch, & Hanson, 2004).

Family expectations and adjustment is challenged in a life-long period for children born with disabilities. Pleasant expectations become a serious challenge when a child is born with unexpected disability (Ritchie, 2013). Priorities change and the life that awaits the family as they have envisioned it becomes confronted with challenging decisions and situations. Extended and multi-leveled family structure also poses complication in the household set-up and priorities. Research yield to evidence that extended families' well-being is challenged and the need for effective programming is vital. Further, studies show that grandparents on paternal side are more likely to undervalue the impact of health promotion on intervention. (Malde et al., B., Scott M., & Vera-Hernández, M., 2015)

### **Theme 3: Job Stability and Resource Provision for the Child**

Given the members of the child's household, about 40% or 45/112 have a parent or family members having a *stable job* and 80% (36/45) of them are identified in middle class families and 20% (9/45) among those within poverty line. The sourced finances, however, are prioritized for spending on families' needs for food, shelter, transportation, utilities, education and health as needed. About 60% or 67/112 of the respondents' families declared *instability in job* where a permanent source of income is apparently challenged in almost all periods of the year. Finances sourced from such families are primarily spent on basic needs for food and shelter and they are represented among those identified within (21/67 or 31%) and below (46/67 of 69%) the poverty line. The job stability factor consistently appeared as a dilemma in nearly all of the focus group discussions and this has well connected itself to the provision of resources for the child. Directly connected with job stability is the consistent and reliable source of income which was noted as 90% (110/112) *not sufficient* and 5% (6/112) *sufficient* to address the needs of the family as a whole. About 5% (6/112) of the respondents were *uncertain* of answers to probing question on sufficiency of financial resources. The health needs of the child with chronic health and dental issues are regarded as important but not as a priority unless the health problem is symptomatic and perceived as life threatening. Priority given to the education of the child with chronic health and dental issues is not as high compared to the level of priority given to non-disabled siblings or members of the family also needing education. The basic provisions of food, shelter and safety particular to having someone look after the child ensuring he/she is not in danger, however, are prioritized specific to the child compared to health and education services provision.

The most dominant call to spend for the services needed to help support children with chronic health and dental issues alarm parents and family members. Expenses will demand regular source of income and it will be favorable if it is readily accessible. Financial stability and long-term career goals

are noted to be attained by family members who are working. All these factors stress the importance striving for job security (Heibutzki, R., n.d.).

### **Community-based Intervention Framework**

The needs of the special children who are subjects of this study are established following the data gathered on the profile and implications of variables related to the health condition and family dynamics and economics. Developing countries like the Philippines are faced with members of its community where the primary priority still falls on the addressing of basic needs of food and shelter for the family. Expenses consumed in expressed priorities leave health and education for the child compromised hence, the need to integrate educational modules that would empower the families through health promotion and further understanding of the child's condition uplifting the child's quality of life is needed delivered through a Community-based Intervention Framework (CbIF) that crosses the financial barrier and regular expenditure priorities of the family.

Given the profile, dynamics and situation of the family engaged with the child with chronic health and dental issues, the framework to be used as a basis for the development of the educational modules in 2017 will follow set guidelines on its planning, writing, validation, publication and distribution phase.

The framework development process shall proceed with the *planning phase* considering the following general considerations as guidelines: (a) advocates of the De La Salle Health Sciences Institute - College of Rehabilitation Sciences (DLSHSI-CRS) for the services and education of children with disabilities will spearhead the leadership of the planning group and shall involve the different stakeholders for the program which include, but are not limited to, the parents, teachers and local government representatives involved in the administration of health and education services to the community, barangay health workers and most especially the children with health and dental issues themselves who can represent the group as direct recipients of care and education; (b) the utilization of the collaborative leadership models as presented by Ryan Estis and associates (n.d.) illustrated in Figure 2 and the collaborative model developed by the Center for Creative Leadership (2016) as presented in Figure 3 to guide the people involved in the program planning and development; (c) regular and scheduled brainstorming sessions of the detailed platform of the program and contents of the educational learning modules with primary goal to set the schedule of tasks and outcomes desired given a timeframe set from planning to publication and distribution phase; (d) selection of qualified educational module developers which will serve as core group belonging in the fields of health, dentistry and special education, (e) accurate documentation of inputs from the members of the planning team which are validated in succeeding meetings and converted into workable outputs given the outcomes of each session, and (f) identification of potential sources of funding from the private and public sectors to sponsor the project and all its requirements until it reaches the publication and distribution levels.



Figure 2. Collaborative Leadership Model (Estis and Associates, n.d.)



Figure 3. Collaborative Leadership Model (CCL, 2016)

The *writing phase* of the educational modules will be guided by the following approaches: (a) selection of the members of the writing team spearheaded by the experts identified by the core planning team to work on the contents of the modules, (b) presentation of "*gratis-initiated*" writing offer to the identified writing team members subject to the availability of funds for the project, (c) official agreement among members of the planning and writing team on the schedule of tasks and deadline of outputs given the assignments per group, (d) use of the facilities and resources of the DLSHSI-CRS to facilitate the meeting

sessions and writing endeavors of the experts developing the educational modules, and (e) conduct of regular meetings for the members of the writing team to ensure standardization of writing format, content synthesis, critiquing and resolution of concerns and issues related to the writing process duly recorded in minutes of regular meetings.

The *validation phase* of the educational modules will cover the following guidelines: (a.) identification of experts outside the membership of the writing team who will validate the contents of the modules, (b.) the expert validators will be determined by both the members of the planning and writing team, (c.) expert validators will comply with standard schedule of review and deadlines set by the planning team, (e.) extent of module validation will be dependent on the decision of the experts identified as validators which can cover pilot testing, content, face and construct validation, and (f.) depending on the availability of funding, expert validators are subjected to “*gratis-initiated*” service.

The *publication phase* of the educational modules will cover the following guidelines: (a.) DLSHSI-CRS will need to set an agreement with the local government units on the details and technicalities related to the publication and ownership of the educational modules, (b.) both groups may consider external agencies that can provide funding for the publication expense subject to set guidelines declared by the sponsoring agency, and (c.) all final arrangements pertinent to ownership and publication shall be duly stipulated in a memorandum of agreement signed by all parties concerned in the planning, writing and publication phases.

The *distribution phase* of the educational modules will cover the following guidelines: (a.) DLSHSI-CRS and the local government units involved, where the educational modules will be used, will set the detailed guidelines to promote massive use and distribution of the educational modules, and (b.) the Department of Education in the Philippines will be tapped and communicated with concerning the use and integration of the educational modules in the basic and special education programs of the public schools for use of teachers situated in the locale where the modules will be distributed.

The educational modules will proceed following the *paradigm* presented in Figure 4 where the barriers identified to hinder the access to health and education services of children with special needs, specifically those with chronic health and dental issues associated with their condition, are eliminated using strategies that can be implemented in the community-based settings (i.e. schools and barangays). The attempt is to determine evidence-based strategies incorporated in educational teaching and learning modules that can be used by parents, teachers and community-health workers to empower them to promote health and effective learning outcomes among children with special chronic health and dental issues encountered in the barangay and school settings.



**Figure 4. Paradigm of Developmental Process for Educational Modules for Children with Chronic Health and Dental Issues using Community-based Framework (Licuan, 2015)**

The *educational module framework for practice and implementation* in community-based setting will proceed with the following three major basic guiding principles throughout the program delivery in school and barangay level settings: (a.) community participation and collaboration, (b.) stakeholder empowerment, and (c.) evidence-based approaches to health and education applicable to children with chronic health and dental issues.

### **Conclusions and Implications of the Study**

The need to address the needs of children with chronic health and dental issues are established in the study following the data gathered on the profile and implications of variables related to the child's condition, family situation and economic status of the family. The outcomes of having educational module guidelines across all phases of development (i.e. planning, writing, validation, publication and distribution); utilization of educational module paradigm; and use of educational module framework for practice and implementation in community-based setting is recommended as output. It is evident that children with chronic health and dental issues are affected by health concerns related to their condition affecting their quality of life. These children belong to families with compromised situations affecting the child's access services. It is implicated that medical and dental health associated with the child's condition, is not a priority unless symptomatic and life threatening. The value placed on education of the child is challenged by the negative perception of the family members on its impact in the child's life and its effect in changing the child's condition. The dynamics of the family where the child belongs to is extended (multi-leveled) and complex creating an impact in the prioritization and needs of the family which have direct effect in the provision of health and education services for the child. All variables previously noted are affected by the challenges in job

stability of the members of the family that serves as primary predictor for the financial resources needed not just for the child's needs but primarily for the basic needs of the family like food and shelter which remains to be dominantly prioritized.

## References

- AlSarheed, M. (2011). Children's Perception of Their Dentists. *European Journal of Dentistry* 5(2): 186-190. PMID: PMC3075993 retrieved March 24, 2015 from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3075993/>
- Asher I. & Pearce N. (2014). Global burden of asthma among children. *International Journal of Tuberculosis and Lung Disease*. 2014 Nov;18(11):1269-78. doi: 10.5588/ijtld.14.0170.
- Baker, K. & Donnelly, M. (2001). The Social Experiences of Children with Disability and the Influence of Environment: A Framework for Intervention. *Disability & Society* 16(1), 71-85 Taylor & Francis Ltd ISSN 1360-0508
- Bessel, A.G. (2001). Educating Children with Chronic Illness. *WILSON DISC, The Exceptional Parent*. 31(9), 44-48.
- Braun, V.; & Victoria C. (2006). "Using thematic analysis in psychology". *Qualitative Research in Psychology* 3 (293). doi:10.1191/1478088706qp063oa
- Collaborative Healthcare Leadership A Six-Part Model for Adapting and Thriving during A Time of Transformative Change By: Henry W. Browning, Deborah J. Torain, and Tracy Enright Patterson Retrieved from <http://insights.ccl.org/wp-content/uploads/2015/04/CollaborativeHealthcareLeadership.pdf>
- Common Dental Complaints/Emergencies (2016), *Care Family Dentistry* retrieved on January 2, 2016 from <http://carverfamilydentistry.com/common-dental-complaintsemergencies/>
- Coniglio, S.J., & Blackman, J.A. (1995). Development Outcome of Childhood Leukemia. *Topics in Early Childhood Special Education*, 15:1, 19-31.
- Creswell, J. & John W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th edition. Thousand Oaks, CA: Sage Publications
- Domínguez, S. (2014), *Mixed Methods Social Networks Research*. Cambridge, UK: Cambridge University Press
- United Nations Children's Fund (2008). *Early childhood intervention, special education and inclusion: focus on Belarus*. Geneva, United Nations Children's Fund
- Education for all global monitoring report 2007: strong foundations: early childhood care and development. Paris, United Nations Educational, Scientific and Cultural Organization
- Engle PL et al. (2007). Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world. *Lancet*, 369:229-242.
- Estis and Associates (n.d.). Collaborative Leadership Model vy retrieved on December 28, 2015 from <http://www.slideshare.net/restis/ryan-estis-associates-collaborative-leadership-model>
- Facts for life (2010). New York, United Nations Children's Fund, World Health Organization, United Nations Educational, Scientific and Cultural Organization, United Nations Population Fund, United Nations Development Programme, Joint United Nations Programme on HIV/AIDS, World Food Programme and the World Bank

- Falvo, D. R. (2005). *Medical and psychosocial aspects of chronic illness and disability*. Sudbury, MA: Jones and Bartlett.
- Feldman, Jacob J. Diane M. Makuc, Joel C. Kleinman, and Joan Cornoni-Huntley (1989) "National Trends in Educational Differentials in Mortality." *American Journal of Epidemiology* 129:919-33.
- Ferrance, E. (2000), *Themes in Education: Action Research, Northeast and Islands Regional Educational Laboratory*, Brown University, Providence:RI
- Filmer D (2008) *Disability, Poverty, and Schooling in Developing Countries: Results from 14 household surveys*. *World Bank EconRev* 22: 141-63. doi: 10.1093/wber/lhm021
- Filmer D. (2008). *Disability, poverty, and schooling in developing countries: results from 14 household surveys*. *The World Bank Economic Review*, 22:141-163.
- Gabarino G. & Ganzel B. (2000). *The human ecology of early risk*. In: Shonkoff JP, Meisels SJ eds. *Handbook of Early Childhood Intervention*, 2nd ed. Cambridge, Cambridge University Press, 76-93.
- Garcia Coll C. & Magnuson K. (2000). *Cultural differences as sources of developmental vulnerabilities and resources*. In: Shonkoff JP, Meisels SJ, eds. *Handbook of Early Childhood Intervention*, 2nd ed. Cambridge, Cambridge University Press, 94-114.
- Grantham-McGregor S et al. (2007) . *Developmental potential in the first 5 years for children in developing countries*. *Lancet*, 369:60-70.
- Heibutzki, R. (n.d.). *The Importance of Obtaining Job Security* retrieved December 27, 2015 from <http://work.chron.com/importance-obtaining-job-security-21845.html>
- Hesse-Biber & Sharlene (2010) . *Mixed Methods Research: Merging Theory with Practice*. New York: Guilford Press
- Integrated social protection systems: enhancing equity for children* (2012). New York, United Nations Children's Fund.
- Kerac M et al. (2012). *Impact of disability on survival from severe acute malnutrition in a developing country setting – a longitudinal cohort study*. *Archives of Disease in Childhood*, 97:A43-A44.
- Kuper, H., Dok, A., Wing, K. Danquah, L., Evans, J., Zuurmond, M. & Gallinetti, J. (2014). *The Impact of Disability on the Lives of Children; Cross-Sectional Data Including 8,900 Children with Disabilities and 898,834 Children without Disabilities across 30 counties* retrieved November 14, 2015 from <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0107300>
- Laguilles, K. R. (2008), *Development and Validation of an Oral Health Instructional Material for Children with Developmental Disabilities*, unpublished masters thesis, UP Diliman, Philippines
- Licuan, M.D. (2009), *Development and Validation of an Interdisciplinary Manual for Use of Parents, Teachers and Professionals in the Education of Children with Chronic Illness*, *Research Journal in Special Education and Independent Living*, 1(1) , Gifted Philippines Inc.
- Livneh, H. & Antonak, R. (2005). *Psychosocial Adaptation to Chronic Illness and Disability: A Primer for Counselors*. WILSON DISC, *Journal of Counseling and Development*. 83:12-20.
- Lynch EW, Hanson MJ (2004). *Developing cross-cultural competence: a guide for working with children and their families*, 3rd ed. Baltimore, Paul H. Brookes Publishing Co.
- Mahoney, G. & Wheeden, C. (1997). *Parent-child Interaction- the Foundation of Family-Centered Intervention Early Intervention Practice: A Response to Baird and Peterson*. *Topics In Early Childhood and Special Education*, 17:165-184.



- Malde, B. et al. (2015). Extended family networks and household well-being: evidence from Malawi. Institute for Fiscal Studies © The Institute for Fiscal Studies ISBN: 978-1-909463-93-6 retrieved December 4, 2015 from [http://www.ifs.org.uk/uploads/publications/research%20summaries/family\\_networks.pdf](http://www.ifs.org.uk/uploads/publications/research%20summaries/family_networks.pdf)
- McConachie H et al. (2001). Difficulties for mothers in using an early intervention service for children with cerebral palsy in Bangladesh. *Child: Care, Health and Development*, 27:1-12.
- Mont, D. (2006). Disability in conditional cash transfer programs: drawing on experience in LAC: paper for Third International Conference on Conditional Cash Transfers. Istanbul
- Newacheck, P.W., Hughes, D.C., Hung, Y.Y., Wong, S., & Stoddard, J.J. (2000). The unmet health needs of America's children. *Pediatrics*, 105, 989 -997.
- Niglas, Katrin (2009). "How the Novice Researcher Can Make Sense of Mixed Methods Designs." *International Journal of Multiple Research Approaches* 3: 34-46
- Norwood, K.W. & Jr, Rebecca L. Slayton, R. (2013). Oral Health Care for Children With Developmental Disabilities. *Pediatrics*, 131(3) retrieved October 3, 2014 from <http://pediatrics.aappublications.org/content/131/3/614>
- Oliva MG, Kenny DJ, Ratnapalan S. (2008) Nontraumatic dental complaints in a pediatric emergency department. *Pediatric Emergency Care* 24(11): 757-60 doi: 10.1097/PEC.0b013e31818c2641 retrieved December 27, 2015 from <http://www.ncbi.nlm.nih.gov/pubmed/18955914>
- Onwuegbuzie, Anthony J. and Nancy L. Leech. "Linking Research Questions to Mixed Methods Data Analysis Procedures." *The Qualitative Report* 11 (September 2006): 474-498;
- Paguio, D. (2005, July). Effectiveness of Art Therapy in Improving Self-Esteem and Alleviating Anxiety Levels among Children with Cancer. Unpublished Masters Thesis, UP Diliman.
- Persons with Disability in the Philippines (Results from the 2010 Census) | National Statistics Office. (2013, January 10). Retrieved July 20, 2014, from <http://www.census.gov.ph/content/persons-disability-philippines-results-2010-census>
- Peterson FL, Cooper RJ, Laird JM. Enhancing teacher health literacy in school health promotion: a vision for the new millennium. *Am J School Health* 2001;71(4):138-44.
- Posarac, A. (2012, May). Socioeconomic Status of Persons with Disabilities and the costs of the Disability. Retrieved September 14, 2014 from [http://siteresources.worldbank.org/DISABILITY/Resources/280658-1327953883745/8402175-1337109498381/module2\\_Posarac.pdf](http://siteresources.worldbank.org/DISABILITY/Resources/280658-1327953883745/8402175-1337109498381/module2_Posarac.pdf)
- Promoting the rights of children with disabilities (Innocenti Digest No. 13) (2007). Florence, United Nations Children's Fund, Innocenti Research Centre
- Ritchie, M. (2013). Children Born with Disabilities: How Families Respond retrieved March 26, 2015 from [http://www.childresearch.net/papers/rights/2013\\_01.html](http://www.childresearch.net/papers/rights/2013_01.html)
- Seddon, P.C. & Khan, Y. (2003). Respiratory problems in children with neurological impairment. *Arch Dis Child* 2003;88:75-78 doi:10.1136/adc.88.1.75 retrieved March 28, 2015 from <http://adc.bmj.com/content/88/1/75.full>
- Shqair, A.Q. et al. (2012) Dental emergencies in a university pediatric dentistry clinic: a retrospective study. *Brazilian Oral Research*, vol.26 no.1 São Paulo retrieved on March 28, 2015 from [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1806-83242012000100009](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1806-83242012000100009)

- Simeonsson RJ. (2000). Early childhood development and children with disabilities in developing countries. Chapel Hill, University of North Carolina.
- Singal N, Jeffery R (2011) Inclusive education in India: the struggle for quality in consonance with equity. In: Artiles A, Kozleski E, Waitoller F, editors. Inclusive Education: Examining Equity on Five Continents. Massachusetts: Harvard Education Press.
- Sobo, E., & Kurtin, P. (2007). Optimizing care for young children with special health care needs; knowledge and strategies for navigation the system. (p. 28). Baltimore, Maryland 21285-0624: Paul H. Brookes Publishing Co., Inc.(n.d.). Retrieved September 12, 2014 from [http://www.unicef.org/socialpolicy/files/Philippines\\_GlobalStudy\(1\).pdf](http://www.unicef.org/socialpolicy/files/Philippines_GlobalStudy(1).pdf)
- Status of the Convention on the Rights of the Child: report of the Secretary-General. In: Sixty-fifth General Assembly of the United Nations, New York (2010). New York, United Nations (A/65/206) retrieved March 14, 2014 from [http://www.ecdgroup.com/pdfs/news-UNGA65\\_Status%20on%20the%20Convention%20on%20the%20Rights%20of%20the%20Child\\_SG%20Report%20August%202010.pdf](http://www.ecdgroup.com/pdfs/news-UNGA65_Status%20on%20the%20Convention%20on%20the%20Rights%20of%20the%20Child_SG%20Report%20August%202010.pdf)
- Tashakorri, A. & Creswell, J. (2007) "The New Era of Mixed Methods." Journal of Mixed Methods Research 1 (January 2007): 3-7
- Thompson, L., Lobb, C., Elling, S., Herman, S., Jurkiewicz, T., & Hulleza, C. (1997). Pathways to family empowerment: Effects of family-centered delivery of early intervention services. *Exceptional Children*, 64, 99-113
- Torpy, J.M. et al. (2010). Chronic Diseases of Children. *Journal of American Medical Association*, 303(7):682. doi:10.1001/jama.303.7.682. retrieved on December 4, 2015 from <http://jama.jamanetwork.com/article.aspx?articleid=185394>
- Trani J-F, Browne J, Kett M, Bah O, Morlai T, et al. (2011) Access to health care, reproductive health and disability: a large scale survey in Sierra Leone. *Soc Sci Med* 73: 1477-89. doi: 10.1016/j.socscimed.2011.08.040
- Trivette, C. M., Dunst, C. J., Boyd, K., & Hamby, D. W. (1995). Family-oriented program models, help giving practices, and parental control appraisals. *Exceptional Children*, 62, 237-249.
- UNESCO Policy Brief on Early Childhood. Inclusion of Children with Disabilities: The Early Childhood Imperative (2009) . N° 46 retrieved March 15, 2013 from <http://unesdoc.unesco.org/images/0018/001831/183156e.pdf>
- UNICEF (2005) *The State of the World's Children 2006: Excluded and Invisible*. New York: UNICEF.
- UNICEF (2013) *State of the World's Children 2013*. New York: UNICEF.
- UNICEF. (2013, December 6). Disabilities. Retrieved January 22, 2014, from UNICEF retrieved on January 24, 2014 from <http://www.unicef.org/disabilities/>
- USC Libraries Research Guides: Types of Research Design retrieved on December 4, 2013 from <http://libguides.usc.edu/writingguide/researchdesigns>
- Verwest, T. (2015). Five Common dental Problems fro Kids Dr Tim Verwest retrieved on December 4, 2015 from <http://drverwest.com/5-common-dental-problems-for-kids/>
- Wachs, T.D. & Sheehan, R. (2013). *Assessment of Young Developmentally Disabled Children*. Psychology. Springer Science & Business Media
- Walker SP et al. (2001). Inequality in early childhood: risk and protective factors for early child development. *Lancet*, 378:1325-1338.
- Walker SP et al. (2007). Child development: risk factors for adverse outcomes in developing countries. *Lancet*, 369:145-147.
- World Bank (2009). *Examining early child development in low-income countries: a toolkit for the assessment of children in the first five years of life*. Washington.

- World Health Organization & World Bank (2011). World report on disability. Geneva, World Health Organization, retrieved on March 15, 2013 from [http://www.who.int/disabilities/world\\_report/2011/en/index.html](http://www.who.int/disabilities/world_report/2011/en/index.html)
- World Health Organization (2012). Early childhood development and disability - A discussion paper retrieved on March 14, 2014 from [www.who.int/disabilities/publications/other/ECDD\\_final\\_word.doc](http://www.who.int/disabilities/publications/other/ECDD_final_word.doc)
- World Health Organization Disability and Health Fact Sheet N352 reviewed on December 2015 retrieved from <http://www.who.int/mediacentre/factsheets/fs352/en/> on December 27, 2015
- World Health Organization World Report on Disability (2011) retrieved December 27, 2015 from [http://www.who.int/disabilities/world\\_report/2011/report/en/](http://www.who.int/disabilities/world_report/2011/report/en/)
- X, (2003). Students with Chronic Illness: Guidance for Schools, Families and Students. WILSON DISC, Journal of School Health. 73(4), 131-132.
- Zamani, A. (2006), Health and Safety Notes California Childcare Health Program retrieved on December 7, 2015 from [http://www.ucsfchildcarehealth.org/pdfs/healthandsafety/OralHlthSpNeedsEN103006\\_adr.pdf](http://www.ucsfchildcarehealth.org/pdfs/healthandsafety/OralHlthSpNeedsEN103006_adr.pdf)
- Zhang, Wanqing. "Mixed Methods Application in Health Intervention Research: A Multiple Case Study." International Journal of Multiple Research Approaches 8 (2014): 24-35

## The Author



Dr. Ma. Cecilia D. Licuan is currently the Director for Alumni Services and Continuing Professional Education and Clinical Preceptor for Physical Therapy Program at De La Salle Health Sciences Institute (DLSHSI) where she is affiliated as a full-time full professor since 1998. She also serves as one of the accreditors of the Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU). She graduated with the degree of Bachelor of Science in Physical Therapy in the same university in 1997, proceeded with the program Masters in Education major in

Educational Management at De La Salle University-Dasmaringas as a Highest Distinction Awardee in 2007 and finished her Doctorate Degree in Philosophy major in Special Education at the University of the Philippines - Diliman in 2007 graduating as Academic Excellence Awardee with her dissertation research nominated as Best Research Paper during SY 2006-2007. Other than her full-time professor status in DLSHSI, Dr. Licuan is also currently affiliated in other prestigious universities in the Philippines since 2006 up to present as a graduate school part-time professorial lecturer given her expertise in the fields of educational leadership and management as well as special education. She has served as a part-time graduate school faculty in University of the Philippines - Diliman and St. Paul University-Manila and is currently still serving as part-time professorial lecturer in De La Salle University - Manila, De La Salle University - Dasmaringas and University of Perpetual Help System - DALTA. Dr. Licuan is passionate in developing health services and educational programs especially for children with disabilities. She is a strong community service advocate in the Philippines and has written several researches and scholarly works. This research paper which was presented in the International Conference on Education and Business in January 2016 at Disney Board Walk Conference Center in Florida, USA was awarded as Best Paper Presentation in the cluster by Clute Institute as organizers of the event.