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Competencies to Contend with Hazards and Disasters

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Abstract This research study identified the competencies necessary to survive natural hazards and disasters. In addition, it held that these competencies are best identified by the (1) people involved in disaster risk reduction like planners, managers, and responders and the (2) survivors of major disasters like earthquake, landslide, volcanic eruption, and typhoon. The former have the training and experience in saving lives during critical times while the latter have directly experienced dangers and eventually triumphed over fatal conditions. Competencies gathered through focus group discussions and interviews were grouped into two: preparedness competencies and response competencies. The identified competencies include possession of disaster kit, ability to use disaster imagination, obedience to authority, trained in disaster preparedness or survival skills, application of science in decision-making, presence of mind, and possession of right attitude like optimism and being proactive. Finally, this research recommends that intensive disaster education and training in the schools and in the community be done, survivors' experiences in crafting disaster education and training programs be included and taught, non-skill competencies like behavior and attitude during disaster education and training.

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Introduction

In November 2013, the Philippines made headlines worldwide with the devastation brought by typhoon *Haiyan* (locally known as typhoon *Yolanda*). According to the National Disaster Risk Reduction and Management Council, the typhoon described as one of the world's strongest killed 6,300 people, displaced thousands, brought havoc to the economy of Eastern Visayas, and created unprecedented trauma to those affected. Studies on disasters hint that developing countries like the Philippines are more likely to suffer from natural disasters because of their economic vulnerabilities and in some cases, their geographical location (Dayton-Johnson, 2006 and Norris et. al, 2007). This harsh reality necessitates the move to determine the specific skills and abilities that could help people overcome the challenges posed by the changing environment.

In this paper, terms usually associated with disaster risk reduction have to be reintroduced since many Filipinos have yet to distinguish important terms in the field. Most often, occurrences such as typhoons, earthquake, flash floods, landslide, and volcanic eruption are simply called disasters. However, these natural events could only be called such if they had affected people in vulnerable situation and making them unable to cope with the impact. Natural calamities are appropriately termed hazards or "events or situations which have the potential to cause disruption or damage to infrastructure and services, people, their property, and their environment" (Episcopal Relief and Development, 2014). Another term that must be explained is the word competency. In the field of emergency response, competency

has been defined as " a specific capability required for effective performance which achieves the objectives of the organization" (Barbera et al, 2015). Meanwhile, in the field of disaster health, competency is defined as a "performance skill, an action that an individual is expected to do". If competency is a performance skill, it "describes actions or behaviors that can be observed, described, and verified" (Daily, 2013). In the present study the meaning of competencies is operationalized within the context of disaster risk management as "the combination of observable and measurable knowledge, skills, abilities, behavior, and personal attributes that contribute to boost an ordinary person's chance to face and survive hazard and potential disaster".

This study focuses on the competencies needed to contend with hazards and disasters as identified by experienced disaster risk reduction personnel of selected disaster risk reduction management offices in the country and by the survivors themselves of different hazards and disasters that struck the country. Given the imminent impact of climate change and the relative absence of institutional mitigation in confronting this phenomenon, a timely research on such competencies can provide enormous help to concerned stakeholders.

Having these hazards and disaster competencies does not automatically guarantee the preservation of life, given the changing nature of hazard that occurs in the country and the equally important role of institutionalized mitigation both from the community and the government. Instead, it multiplies the chances of survival in times of calamities. Moreover, since many of these competencies required education, this study argues that the individual's effort alone is insufficient for such skills to develop or come about. The findings in this study though still in the preliminary stage can be used as an informative guide in developing course structure on disaster education and training.

Methodology

Participants

The study features the experiences of 48 individuals, 19 of whom are involved in risk reduction activities while the remaining 29 have survived various disasters which occurred in the Philippines. Among the risk reduction personnel, 10 are currently working for the Municipal/City Risk Reduction Management Office of the most disaster resilient communities in the Philippines, namely, Marikina, Rizal, San Francisco in Camotes, Cebu, and Saint Bernard in Southern Leyte. The other nine (9) have been in disaster risk reduction for two (2) to five (5) years. The survivors come from areas stricken by various disasters from 1991 to 2013, three (3) survived the Mount Pinatubo eruption in 1991, four (4) braved the unexpected heavy rains of typhoon *Ondoy* in 2009, leaving most cities in Metro Manila and nearby provinces drenched in floodwaters, three (3) miraculously came out alive from the 2006 Guinsaugon landslide, three (3) come from Sagbayan, Bohol, the center of a 7.2 magnitude earthquake in October 2013, and the remaining 12 survived the wrath of typhoon *Haiyan* in November 2013.

Instrument and Data Gathering

The study made use of in-depth interview, focus group interview, content analysis, and related literature to gather information. There were separate questionnaires/questions for the group of 19 disaster risk reduction personnel and for the group of 29 survivors but the two were almost the same in that both questionnaires featured similar core questions on the skills, abilities, behaviors, and attitudes that must be possessed by people to overcome hazards and disasters, the lessons learned from the crisis, and the recommendations they could give. The difference came from one or two questions related to the background of the hazards or

disasters experienced. The questionnaires for risk reduction personnel and survivors have both free-answer questions, and a checklist of observable and measurable behavior traits people should possess in case hazards or disasters come. The free-answer questions allowed the respondents to respond to questions asking for competencies and lessons they learned from their experience while the checklist of competencies provided a set of competencies that the respondents think would help them or believe to have helped them when faced with or encountered hazards and disasters. The checklist is based on the Development of Disaster Response Competency Profile Indices, a validated instrument of S. Tatsuki of Doshisha University in Japan that "identifies observable and measurable behavior traits among highly competent disaster responders" (Tatsuki, 2007). This validated instrument was also used for the survivors on the premise that the measurable and observable traits possessed by the disaster responders, as enumerated in the instrument, would resemble the behavior and traits ordinary individuals think they must possess to survive hazards and disasters. In cases the survivors and the risk reduction personnel think the other way or have other competencies in mind, the free answer questions related to competencies, lessons learned, and recommendations could capture their ideas. Interviews and discussions with risk reduction personnel and survivors were conducted separately.

Analysis

The transcribed interviews and discussions were subjected to content analysis. The groups of disaster risk reduction personnel and the survivors enumerated 39 and 33 disaster competencies, respectively. The results of the analysis and the number of times they were impliedly or explicitly mentioned by the groups of respondents, and the number of times they appeared or mentioned in a particular province or area were considered. The researchers took the competencies

which got the most number of mentions from each group of respondents. Thus, the two lists became shorter, but still long for a broad and concise list of competencies. Since some competencies overlap with others they were subsumed to other competencies until their conceptual clustering become possible. Most competencies are simultaneously present in the two groups.

Results and Discussion

Some important terms related to disaster risk reduction need reintroduction since many Filipinos have yet to distinguish them from other similarly related terms. Most often, occurrences such as typhoons, earthquake, flash floods, landslide, and volcanic eruption are simply called disasters. However, these natural events could only be called such if they had affected people in vulnerable situation making them unable to cope with the impact. This paper holds that these competencies are best identified by the (1) people involved in disaster risk reduction like planners, managers, and responders and the (2) survivors of major disasters like earthquake, landslide, volcanic eruption, and typhoon.

Hazards and Disaster Competencies from Risk Reduction Planners, Managers, and Responders

The competencies enumerated by 20 risk reduction personnel fall into two (2) kinds of competencies. From the six (6) main competencies they enumerated, five (5) are preparedness competencies while the remaining one (1) is a response competency. Preparedness competencies are the skills one has or had acquired before a hazard or a disaster sets in. By contrast, response competencies refer to those skills one needs or one ought to have while responding or reacting to a disaster. This categorization is seldom followed

in published literature on emergency management (Barbera et al, 2005), but seems helpful here, since preparation as the most important element of disaster risk reduction needs more emphasis as a competency more than that of a response. In general, people including those in the disaster risk reduction management council or offices still carry disaster response paradigm.

Preparedness Competencies

Trained in Disaster Preparedness

All risk reduction personnel interviewed agreed that disaster preparedness training or education is highly important to counter hazards and to survive disasters. Societies may experience the same kind and degree of hazard but the impact of such hazard in each society may vary depending on people's respective adaptive capacities. Given this reality, enhancing adaptive capacity is very vital (Dayton-Johnson, 2006). One of the adaptive capacities that will lessen a person's vulnerability to disasters is to increase human capital. In a developing country like the Philippines, this endeavor is very important since numerous studies have shown relationships between disaster vulnerability and political-economic marginality among communities. They explained that when disasters strike, most often it would be the poor and the unrepresented communities that would suffer the most (Norris et al, 2007, Meyer 2013, and Dayton-Johnson 2006). If people have training or education on dealing with hazards and potential threats, their ability to survive becomes greater.

Unquestionably, the disaster risk reduction and management office of the three (3) most disaster-resilient towns/cities in the Philippines have unanimously confirmed the utter need for continuous disaster preparedness training in the country. These three (3) areas are Marikina City, San Francisco on Camotes Island, and Saint Bernard in Southern

Leyte. In San Francisco, disaster preparedness training has been a serious business for years now. Every barangay or local village, with the help of the town's disaster risk reduction personnel and volunteers hold regular training on what to do when hazards and disasters strike. Trainings on evacuation, early warning system and the likes are conducted for the people. Marikina remains as active as San Francisco in conducting disaster preparedness training. The city disaster risk reduction office has the Department of Education as one of its strategic partners in helping facilitate the conduct of trainings in the city. According to the Marikina disaster risk reduction focal person, what the city does is to conduct a series of trainings on disaster preparedness. The trainings start with the basic, and then proceed to the advance level. In Marikina, it is hoped just in case an unexpected disaster happens, that all residents would know what to do and where to go as part of their disaster preparedness trainings. Laskowski-Jones in her work Concepts of Emergency and Disaster Preparedness (CEDP) also advised that "there should be regularly scheduled emergency response drills, where designated roles and tasks can be rehearsed". The goal of which is the development of competencies (Academy of Medical-Surgical Nurses, 2013).

Do consistent disaster trainings really pay off considering the unpredictability and severity of actual hazards and disasters? Disaster studies show that if people had been given appropriate information or knowledge they would be capable of responding to disasters accurately (Gantt and Gantt, 2012 and Dayton-Johnson 2006) thus sparing lives and property.

Possession of Emergency or Disaster Kit

Being prepared for disaster involves having proper supplies that can help people weather the crisis. Similar to the need for disaster preparedness trainings, the risk reduction personnel of all areas/provinces interviewed, advised the

people to prepare their own emergency or disaster kit with supplies people may need in case of emergency or disaster. It also contains water that lasts for three (3) days, uncooked but easy to prepare food, flashlight, battery-operated radio with extra batteries, first aid kit, copies of important documents, mobile phone together with its charger, blankets, and extra cash (Centers for Disease Control and Prevention). Having an emergency or disaster kit at home is important. In case an emergency strikes and the family members have to leave home immediately, having a ready emergency or preparedness kit makes a difference.

In the Philippines where people usually stay at evacuation centers for safety, having their kit will reduce pressure both on the part of the evacuees and the government while the people are in the shelters. One risk reduction personnel from San Francisco noted the wrong notion in people's minds. She observed that once a preemptive evacuation is done for the people, they think that it is also the government responsibility to feed them. She clarified that it is still in the hands of the people to sustain themselves before, during, and after disaster. There is nothing tragic or pathetic than being able to survive disaster only to die of hunger, a similar view shared by responder from Marikina. In the case of disaster risk reduction responders, availability of food is a must since they could not think and act with an empty stomach, the same for ordinary people affected by calamity.

Use of Disaster Imagination

In a report released by the US Department of Homeland Security in 2014, it was predicted that "individuals, families, neighborhoods, and the private sector will likely play an increasingly active role in meeting emergency management needs. " On a similar note, four out of the five groups of risk reduction personnel interviewed believed

that people nowadays should have the ability to imagine disaster, how it happens, what causes it, and what is to be done to avoid it. Dr. Renato U. Solidum, Director of the Department of Science and Technology's Philippine Institute of Volcanology and Seismology (DOST-PHIVOLCS), spelled out three (3) ways on how to acquire disaster imagination: (a) it starts with the identification of hazards that may possibly damage one's place or area; (b) followed by the assessment of these hazards, the magnitude, and the areas affected; and (c) lastly, the assessment of possible fatalities, losses, and damages. At the onset, one might think that the steps enumerated by Dr. Solidum are actually the job of scientists and the disaster risk reduction personnel and should not concern ordinary citizens, but he explained that "imagination is the best remedy in battling fierce disasters" and this applies whether one is just an ordinary citizen or a responder. If people know the hazards to which their place is vulnerable and the implications they could bring to the community, these imagined disaster scenarios could help in taking apt actions and solutions (Department of Science and Technology, 2014).

In the interviews conducted, aside from disaster imagination, the importance of the concept of foresight was mentioned by the risk reduction personnel. Such concept closely relates to that of disaster imagination. In fact, the literature on disaster risk management has featured the role of foresight in the field, so that to Martin (2011, cited in Aubrecht), foresight is "a process not aimed at predicting the future, but shaping or constructing the future by defining and living up to common long term visions and desired conditions". Also in Aubrecht's work, Cuhls (2011) clarified that "foresight is not planning, but results would provide some sort of information about the future and can therefore be considered one step in decision planning and preparation. Foresight is not only for the risk reduction personnel, considering the limited period of time they can give to each

vulnerable sector in the community, it will greatly help everyone if people themselves would be responsible for their own safety rather than depend it on the risk reduction personnel of their locality. People need not wait for the worst, preparedness and actions anchored on the individual or family's foresight initiative can save lives hence, individual and family foresight initiatives are very important. Although since 2010 there has been an approved law mandating their establishment, the COA report of 2014 states that only 50% of towns have disaster risk reduction and management council, a gloomy statistics since the Philippines is one of the most disaster-prone countries in the world. Since it involves process, Possessing foresight is neither an instant competency, like preparedness, people could only have if they have knowledge of actual realities.

Application of Knowledge of Science in Decision-making

The United Nations International Strategy for Disaster Risk Reduction (UNISDR) conceptualizes disaster risk reduction (DRR) as the "coordinated efforts of governments, experts, and communities to mitigate against, prepare for, respond to and recover from disasters" (Using Science for Disaster Risk Reduction, 2013). On this basis, three (3) groups are expected to work closely in reducing people's exposure to risk: the government, the community, and the experts. People have a very clear idea of what a government is, in fact, in the Philippines, the government is the first institution expected by people to help them when a hazard or a disaster occurs in their area. In normal conditions, the government relies on the community or its leadership in the delivery of basic services at the local level. Admittedly, the need for experts such as scientists is a must in disaster and risk management. As the magnitude of hazards and disasters becomes heavy the government and the community more than ever rely heavily on science and technology in mitigating climate change,

without which, more countless and irreparable damage would have occurred every time hazards and disasters hit. This fact has been confirmed in the UNISDR 2009 and 2014 technical reports showing how helpful science could be to government, policy makers, and disaster risk reduction activities. Different case studies have also shown its potent ability to (1) "enable a more focused disaster risk assessment, (2) reduce the impact of disasters by better forecasting, and (3) improve disaster risk mitigation program" (Using Science for Disaster Risk Reduction, 2013).

The town of Saint Bernard, where the local government installed early warning systems for floods and landslides, has been working closely with scientists and technical experts. These scholars assist them in many areas of risk assessment and management even in the release of early warnings to the town people. Many years back, residents tended to make their very own risk assessment of the area where they live, justifying it that they know the seas and mountains very well since they had been raised in these places. When the scientists arrived in the town and made risk assessment of the area, the risk reduction people met with the people and explained to them the official findings. Rather than dismissed the indigenous knowledge of the people, the town's risk reduction personnel combined it with the findings of scientists and experts. Such action greatly boosted the reliability of the scientific findings in the eyes of the people so that this convergence has opened a pragmatic approach of facing hazards and disasters.

Absence of knowledge about hazards and disaster is very dangerous. In Bohol, for instance, after a strong earthquake hit several towns, a tsunami alert was released to the people and the suspension of classes announced. Some children went to the coast, instead of going home to witness what a tsunami is. Fortunately, there was no tsunami so their lives were spared.

In an interview with typhoon *Haiyan* survivors, one of the observations mentioned was that before the typhoon came to Leyte, they had heard of the warnings of storm surges in coastal areas from newscasts. However, they did not take appropriate actions because they had no idea what a storm surge was. They had the impression that since it was not defined nor explained fully, it was not as serious it turned out to be, so that all "ignorance" resulted in a major catastrophe.

Given the crucial role of science in disaster risk reduction, scientists and technical experts are challenged to effectively communicate their findings to policy makers, disaster managers and personnel, and ordinary people. Known for their complex scientific language, the scientific community is challenged to equip their group with effective communication so that scientific knowledge could be understood and used by stakeholders. A UNISDR technical report recommended that scientific results and guidance be communicated in the form of "simplified, feasible, affordable, and socially acceptable solutions that respond to people's needs, test the fruits of science turn in vain." (Reducing Disaster Risks Through Science, 2009)

Obedience to Authority

All risk reduction personnel were consistent in saying that people should obey authority, especially in matters of disaster preparedness like evacuation and when the likelihood of disaster marks very high. For this study, authorities refer to the risk reduction personnel, who by virtue of their training, know how to reduce the risk and vulnerability of the people from emergencies, and who by virtue of their responsibility, are mandated to ensure the safety of the citizens within the confines of the law. Over the years, the literature on the adverse impacts of hazards and disasters has flourished, if not helped people learn more about them, while studies on risk

perception or the way people see and react to risks remain very scant. Without considering risk perception, people will persist on misconceiving disaster events. The truth is risk perception among individuals varies, as they are affected by different factors inside and outside (Rod et al, 2012). In Gantt and Gantt's work (2012) titled "Disaster Psychology Dispelling the Myths of Panic", three significant phases in the individual's decision-making were outlined by Perry and Greene: (1) risk identification, (2) risk assessment, and (3) risk reduction. The first involves naming a threat or risk by an individual. If he/she fails to see a threat or risk, no protective action could be expected from him or her (Gantt and Gantt, 2012). The person may also confirm the aforesaid threat through relatives and peers. Without a satisfying proof, he/she concludes that the situation must be less threatening than previously identified. Similarly, this initial step is affected by several factors, one of which is "social trust or the trust in experts or organization" the person has for the said authority. Does the individual find the origin of the risk message credible? Is the message consistent with environmental cues? Researches indicate that the people's faith or confidence in government orders and their predisposition to follow them have a strong correlation (Rod et. al, 2012). If they trust the person who, for instance, instructs them to evacuate, the listeners will do so. A case in point is that of Saint Bernard, a town prone to all kinds of hazards. Normally, if only the government and risk reduction personnel would tell the people to evacuate, the latter would not immediately respond. However, after the 2006 Guinsaugon landslide and a group of scientists often comes to the area, things have changed. Now, people living at high risk areas have moved out and responded more to the orders of the risk reduction personnel.

Risk assessment involves measuring the possibility and the gravity of the risk and its consequences, if ever it

happens. Similar to risk identification, risk assessment is affected by several factors: the credibility of the authority, the risk message itself, and the previous experience with parallel scenarios. If the person thinks that an imminent danger is present, but the chance of happening or the impact is low enough, then the person will not act protectively. Before the catastrophic Guinsaugon landslide in 2006, Saint Bernard had experienced minor landslides, but many stayed put in the same place. It was only after the tragic 2006 landslide that buried one barangay, the surviving residents willingly left on their own for a new settlement. A similar case was noticed among the Aeta survivors, indigenous people based in Central Luzon of the Mount Pinatubo eruption of 1991. They live in the mountains by hunting and farming. As an indigenous group, they practice animism so elements of nature like trees and mountain are sacred to them. When the 600 year dormant Mount Pinatubo started to emit pyroclastic materials and ashes, the Aetas were looking forward to an instant and natural fertilizer for their parched land then. The local government and PHIVOCS representatives had to do a lot of explaining until a video of erupting volcano convinced them that they were, indeed, in a perilous situation.

The last phase in the individual decision-making is risk reduction or the attempt of the person to think of protective ways to reduce the potential peril. The individual will resort to them, if he/she believes that the ways he/she has in mind are possible in that condition and could lessen the negative consequences. After watching the video, the Aetas realized they still had time to go down; they heeded the call of authorities for evacuation and left the mountains. They survived the disaster and learned from that experience ever since.

Response Competencies

The response competencies refer to those skills the individual needs or ought to have in responding to a disaster, or a hazard like typhoon, that has turned into a serious scenario where the individual finds himself or herself in a vulnerable situation that threatens life, and property.

Presence of Mind

The risk reduction personnel mentioned many response competencies, such as "presence of mind","do not panic", "controls fear", "knows what to do", "alert", "always ready", "quick to decide", "has initiative", and "uses common sense". Since these competencies were quite similar with one another so that they could be subsumed under one single competency— presence of mind. The risk reduction personnel from Bohol believed that an individual could not make decisions properly without presence of mind. The individual and the community could only have it if they know what to do in a given situation. Awareness like this could only come if they have undergone disaster education and training. Contrary to the common notion that people react irrationally and selfishly during emergency situation or crisis, numerous researches have shown that the individual does think rationally amid disaster and emergency scenarios (Gantt and Gantt, 2012). This finding intensifies the necessity for conducting disaster education and training to the people to help them contend with the crisis. Presence of mind coupled with related competencies like initiative, quickness in making decision, and ability to control fear has been proven a life-saving attribute for anyone, as proven by the resident-survivors of Marikina and Tulang Diyot in San Francisco, Camotes Island.

Hazards and Disaster Competencies from Survivors

This section presents the preparedness and response competencies enumerated by the 29 survivors of various disasters from the same areas where the disaster risk reduction personnel came from, like the skills enumerated by the Risk Reduction Personnel, the enumerated competencies fall into two categories, the preparedness competencies and the response competencies.

Preparedness Competencies

Possession of Survival or Disaster Kit

The survivors from the areas involved in the study have underscored the importance of having a survival or disaster kit. As their places are more prone to disaster than anywhere in the country, the respondents believe that they should have a disaster kit with, among others, enough food supply to aid them tide over for several days. In case, they move to evacuation centers, they still have something to eat as relief goods may not immediately be accessible, and the uncertainty of duration of their stay in these centers.

In flood-prone areas, such as Marikina, the respondents value the "life saver" (*salbabida*), life vests, and boats. Having experienced flooding through the years, the respondents also see the value of being resourceful. They said that ordinary household items such as pails and washing machines can be used as boats or to keep them afloat, adding that even ordinary things can be utilized to survive during calamities.

Use of Disaster Imagination

Being in disaster-prone communities, almost all the disaster responders stressed the importance of having a disaster imagination. The leadership and the community should have

the foresight of always thinking and planning of the worst case scenario that may happen in case of a disaster. Equally, they stressed the value of continually preparing the people for the onslaught of a disaster, to be taught in schools in the form of giving earthquake and typhoon drills, tsunami alert, and the like. While they do not know when will these happen, people think that at least they are psyched up and armed with knowledge on how to respond to calamitous events.

As disaster imagination does not develop overnight, the people should be helped to develop this competency. The foremost step is to teach them how to identify hazards in the area. Breakwell enumerated two major factors that affect their identifications: first is the people's direct experience and second is communication (Rod et al., 2012). Those who have experienced hazards and disasters are more cautious and vigilant about the likelihood of another disaster. Also, how the risk messages are conveyed to the people and who deliver the risk messages affect how people perceive them. Since the communities frequently experience natural calamities, the survivors even suggested continuous study about these phenomena.

Being Proactive

The disaster responders pointed out the value of being proactive and having knowledge about the impact of disaster in the communities. They said that besides being always ready they must know what to do. Almost all the survivors said that there is no substitute for preparation and cautiousness. Survivors in Marikina, for instance, admitted that prior to the frequent flooding in the area, the residents would normally ignore announcements and precautions from the government. They just would stay in their houses and do nothing. However, with the damage to life and properties, especially after the onslaught of typhoon *Ondoy*, the residents became more proactive in monitoring and preparing for any

calamity. They now listen intently to media and government warnings about any impending disaster.

The same holds true for the survivors of super typhoon *Haiyan* in Leyte. After experiencing its fury, the survivors get more conscious of climatic changes and pay more attention to any announcements regarding typhoons and weather disturbances.

Having Survival Skills

An important competency emphasized by the respondents is having a survival instinct, the unconscious desire to struggle and to survive against all odds, no matter how bad the situation turns out. Corollary to this is possession of certain survival skills. To the disaster responders, one way of being equipped during a disaster is knowledge in rescue operation, as it may not only save one's life but also those of other people in the affected areas. Aside from relying on assistance from other people in the community, the survivors may also take on other roles as rescuers. A related competency is the ability to know and decipher emergency signals and codes.

The survivors from the Bohol earthquake also cited the importance of knowing how to administer first aid. Moreover, the disaster responders from Bohol, Leyte and Marikina stressed the value of knowing how to swim. Considered a sport, swimming is perceived as an important skill, especially during floods.

Other survivors highlighted the ability to learn and adapt from previous experience. As the survivors in Bohol, Leyte, and Zambales explained, the disasters they have experienced provided them lessons to be prepared at all times, adding that no one knows when these disasters would strike again, especially the occurrence of earthquakes.

Some suggested that the government conduct a survey and provide trainings meant to equip people on how to survive in all kinds of natural calamities. The trainings should factor in the experiences and lessons learned in dealing with disasters, from preparation of the coming disaster to relief operation and rehabilitation.

Obedience to Authority

The survivors pointed out the value of obeying authorities during disasters. Since they have experienced the wrath of various calamities, almost all the survivors in Camotes Island, Leyte, Marikina and Zambales said that people should follow instructions provided by local leaders. A survivor in Marikina, for instance, said that he would not take the risk of not following instructions, as borne by the fact that the stubbornness of some residents in Marikina caused the loss of many lives. As such, if the local government issued an order to move to evacuation centers, the community would immediately comply. In this regard, the Aeta survivors in Zambales shared that before Mt. Pinatubo had erupted, people were skeptical of government warnings regarding the possible damage of the eruption. As members of an indigenous people group, they have their own way of seeing natural phenomenon. The impending eruption was initially expected to nurture the then parched land in the area thus, a welcome development for the group. They were also hesitant to leave their communities and some even stayed behind to watch over their houses, livestock, and farms in the danger zone .According to a study of Drabek and Buggs, inaction to evacuation order is a normal reaction among people (1968, cited in Rod et al. 2012). Besides their distinct way of seeing things, Aetas have never been exposed to volcanic eruption since Mt. Pinatubo had been a dormant volcano for six centuries. Their experience, however, has changed their view about obeying government sent authorities during disasters.

The survivors realized, though belatedly, that lives are more valuable than properties and that it pays off to listen to others who know risky situations better.

Response Competencies

Possession of Right Attitude

Being in disaster-prone communities, people with the right attitude on how to respond during disasters would matter. The responders, particularly those in Bohol and Leyte, stressed the importance of being resourceful during disasters. They also pointed out that one's attitude or how one responds amid a disaster would mean one's survival. As emphasized by the survivors in Bohol, Leyte, South Leyte, Marikina, and Zambales, it is important to remain cool, calm, and collected. For their part, the survivors of Mt. Pinatubo eruption revealed that it is important not to panic and stay focused.

Equally, they mentioned alertness, decisiveness and presence of mind as important attitudes during disasters. To exemplify, a survivor in the Guisagon landslide, confirmed that the strong will and fighting spirit to live enabled her to get out alive. She did not let herself be defeated by fear and panic. Consistent researches have shown that the concept of panic often portrayed in the media and assumed by some emergency planners is overstated or over exaggerated if not "extraordinarily rare". On the contrary, the physical body through its activated sympathetic nervous system works just in time to increase one' s energy necessary to face threatening situation (Gantt and Gantt, 2012).

Being Optimistic

A common observation or remark among the survivors is that they had never seen anything like what they experienced with a particular disaster. The impact of the strong earthquakes, the super typhoons, the flash floods, and

the landslides are too much for the survivors, fearing what happens because after all the preparation to respond to these disasters, yet the negative impact in the society still proves significant. As shared by survivors of super typhoon *Haiyan* on Camotes Island, they had a week-long preparation for its landfall, yet the damage was still mind-boggling.

The disaster responders remain optimistic, however, because they cling to faith and prayers, especially true among the survivors in Camotes Island, Leyte and Southern Leyte who never lose hope because they believe that an Almighty God exists to protect them. Survivors in the Guinsaugon landslide in Southern Leyte narrated that they are still alive, because all they could do when they were under tons of mud and dirt was to pray.

Issues and Recommendations

Inclusion of Disaster Education and Training in the Schools and in the Community

Nothing beats education and training in contending with hazard and disaster. All the respondents in this study, whether survivors or risk reduction personnel, firmly believed that these are still the most effective ways to triumph over emergencies rather than being helped by the risk reduction personnel during the actual calamity. Local governments must shape up as soon as possible and step up with their respective disaster plans. First and foremost, the number and seriousness of casualty pile up every year. Lives are wasted because ignorance kills. Second, as stipulated in the law, violation of such will make the government accountable to the people. Disaster education and training must be given free to all citizens with special urgency for the most vulnerable groups in the community like children, elderly, women, and people

with disability. If possible, customized disaster education and training for these groups for they have needs and situation different from the rest of other community members.

The local culture and knowledge must be considered in the conduct of disaster education and training. This is best exemplified in the case of Boholanos who are known for their strong faith. They see disaster preparation as an ominous activity, hence, unwelcome. The same holds true for some indigenous people of the Philippines, who see hazards and disasters with spiritual meanings, not as natural, imminent phenomena to contend with.

Inclusion of Survivors' Experiences in Crafting Disaster Education Programs

Survivors can offer valuable insights, lessons, and competencies on how to deal with disasters. Having experienced and survived disasters, they can offer realistic and practical lessons on how to deal with emergencies. Disaster trainings usually offer "things to do and not to do" during emergencies. In the actual emergency scenario, however, various factors related to human behavior come into play which may not be considered during the training. Expectedly, these factors are known best by the survivors themselves since they experienced them ahead of the rest.

Emphasis on the Teaching of Non-skill Competencies during Disaster Education and Training vis-a-vis with the Teaching of Skill Competencies.

Disaster education and training usually include instructions of what to do and what not to do in times of calamities. Undeniably, there is nothing wrong with that; nonetheless, this disaster-specific instruction, meaning the trainees are taught of "step-by-step" things to do during typhoons, earthquake, landslide, etc. may be wanting. Given

the magnitude of disasters lately, the step-by-step list may not cover the unpredictability of disastrous events. If non-skill competencies like the "behavior and attitude before and after the calamity." would be equally taught and stressed, the trainees would have better chance to survive, since aside from the skills they would possess the right behavior and attitude for survival.

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