HIGH SCHOOL STUDENTS AS INFORMATION PROVIDERS IN THE UPLANDS

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Abstract

Agricultural extension in the uplands is challenging owing to the inadequacy of basic facilities such as paved roads and information and communications technology infrastructure. Hence, it is imperative that innovative ways to deliver information on cost-reducing and yield-enhancing information on rice farming must be devised. This paper will discuss the role of informal infomediaries in addressing the information poverty in the uplands. We aim to show the different manifestations of being an infomediary in a rice farming community as well as the challenges in implementing this initiative. Data used were drawn from the 11-month campaign implementation of the “Sagot ko ang magulang ko!: Isang kampanya upang hikayatin ang mga kabataang maging infomediaries” (Read, Surf, and Text for your parents!: A campaign to mobilise young people to serve as infomediaries). We used focus group discussions, individual and key informant interviews, field notes, and participant observation in our data collection. Content analysis was conducted for the text messages received in the PhilRice Farmers’ Text Center. Our results show the infomediaries in the farming sector can be grouped into farming ally, initiator, and champion. We also call attention on the need to enhance the technical skills of the infomediaries on the information they access, not just on improving their proficiency in using ICTs. Providing a more conducive environment to learn how to use computers would do well for this initiative.

Keywords: access, innovation, strategy

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Introduction

Inadequacy or absence of basic services such as paved roads and information and communications technology (ICT) infrastructure make the uplands challenging for agricultural extension. Additionally, the poorest of the poor farmers live on the uplands (Cruz et al., 1986). The Philippines has over 100,000 ha upland rice areas (Biag, 2011).

The Philippine government has recently started the Upland Rice Development Program (URDP) to “harness the potential of the upland rice ecosystem as one source of the country’s rice supply; promote sustainable farming systems and practices in the upland communities thus increasing the farmers’ income; develop the upland peoples as self-sufficient food communities; and establish a seed propagation program and protocols for traditional and modern rice varieties released for cultivation in the upland ecosystem” (Biag, 2011, pp. 5-6).

URDP is a long overdue program for the uplands. Complementation of this initiative by way of improving people’s access to information should therefore be in the right direction. Given the challenges mentioned earlier, there is a need to devise innovative ways to deliver the much needed agricultural information for the uplands.

Manalo (2012) argued on the importance of infomediaries in bridging the information poverty in upland areas. Loosely, infomediaries are people who facilitate access to information for those who may have difficulty accessing it. The paper was drawn from an empirical study with young Filipinos. What was missing, however, was a pilot-testing of the proposal in the Philippine context. Other authors regard infomediaries as the realization of equity in access to information (Raihan, 2007; Chowdhury and Khanam, n.d.).
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This paper will present insights on mobilizing upland high school students to serve as infomediaries. This is based on the 11-month campaign implementation of the “Sagot ko and magulang ko! Isang kampanya upang hikayatin ang mga kabataang maging infomediaries (Read, Surf and Text for your parents: A campaign to mobilize the youth to serve as infomediaries).” Our key research question is: What can be learned from mobilizing high school students as information providers for rice farmers? We likewise endeavor to inquire on the limits of and best practices in implementing the infomediary initiative.

Theoretically, we wish to advance the body of knowledge on infomediaries by providing classifications of infomediaries in an upland rice farming community. Additionally, we wish to expand the concept by contributing knowledge on “informal” (child-parent) (Gould and Gomez, 2010) infomediaries.

Information on rice farming

Information hubs

There are plenty of information access points on rice farming in the Philippines. Most agencies attached to the Department of Agriculture that have something to do with rice have comprehensive and regularly updated websites. PhilRice, the country’s lead agency for rice research and development, has uploaded practically most information an information-seeker on rice needs. PhilRice’s website has broadcast releases on latest technologies in rice farming, publications, and many others. The PinoyRice Knowledge Bank (PRKB) (www.pin likewise managed by PhilRice, contains most information one has to know about rice farming in the Philippines. It contains technology videos, audio files of interviews with rice experts, powerpoint presentations on various aspects of rice production for agricultural extension workers, technology handouts and agri games. Aside from English and Filipino, the website is also available in three major dialects in the Philippines—Iluko, Hiligaynon, and Cebuano.

The Philippines likewise has the Farmers’ Information and Technology Services centers. These are strategically located nationwide, and contain reading materials, technology videos on various agricultural
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products. Meanwhile, the PhilRice Farmers’ Text Center (PFTC) is a texting platform that answers most queries on rice production. In 2009, the PFTC responded to more than 70,000 queries (PhilRice, 2010).

Access issues
While the section above documents the plethora of information access points on rice, this section will document access issues for farmers in the rural areas. It is not a secret that information access is a challenge in agricultural communities owing to their remote location. This problem may be due to bigger issues such as unpaved roads and inadequate information and communications technology infrastructure. Aside from these systemic issues, farmers do have technological issues as well. Koutsouris (2010) did an extensive review of studies in European and American countries documenting how farmers failed to benefit from ICTs. Some of the reasons cited were difficulty in realizing the benefits from ICT and inadequate time. Interestingly, even those farmers who have access to ICTs did not use said facilities for their farming. In both regions, there was preference for face-to-face interactions, and for print especially for how-tos in rice farming.

The issues raised above from countries with relatively good access to ICTs are resonated in the Philippines. It was noted that in the survey (Manalo et al, 2010) of more than 1,000 farmers from the top rice-producing provinces of the Philippines—Isabela, Nueva Ecija, Iloilo, Maguindanao, and North Cotabato—Filipino farmers had low to negligible access to the Internet and/or computers in their household. Similar to the results above, they likewise preferred face-to-face and publications over online means.

The infomediaries
This section talks about the infomediaries as the missing link between information and information-seekers. In an extensive research spanning 25 developing countries, Gould and Gomez (2010) noted infomediaries were central to the operations of the public access computing centers (PACs) such as telecenter, library, or cybercafé. In the same article, the authors lamented that despite the importance of
infomediaries, they seem to have inadequate training, and hence could not be optimized owing to proficiency issues. Soriano (2007) noted that telecenters must invest on improving the capacities of the infomediaries. Scholars (Gomez and Gould, 2010; Soriano, 2007) called for the training of infomediaries since they have the capacity to bridge the digital divide in developing countries.

Meanwhile, mobilizing young people as infomediaries has been documented in different projects in Costa Rica, Dominican Republic, and Sri Lanka (Gomez and Gould, 2010). In these countries, positive response was noted in the youth’s ability to bridge information gap. Young people’s efficiency in using the Internet and the computer in general was central to their effectiveness as infomediaries. Some authors, (AIJC, n.d.; Brosnan, 1998; De Guzman and Fabian, 2009; Losh and Jenkins, 2012) however, mentioned some negative consequences when talking of youth and ICTs. Issues such as technological addiction, accessing forbidden sites are cited as among the reasons.

**Theoretical work**

There are several descriptors attached to infomediaries: gatekeepers (Metoyer-Duran, 1993), service providers (Sein and Furuholt, 2012), key informants (Schilderman, 2002), lay information mediaries (Abrahamson & Fisher, 2007), and boundary spanners (Mason, 2003) (list adapted from Gomez and Gold’s 2010 article). In ICT4D, infomediaries are oftentimes associated with public access computing centers such as libraries, cybercafés, and telecenters. Manalo (2012) referred to infomediary as a social solution to bridging the digital divide.

Sein and Furuholt (2012) in an effort to advance the literature on infomediaries forwarded that they be categorized according to: What do they do? Who are they? How are they giving the services? Why are they doing this? In which context? Meanwhile, Schildermann (2002) came up with a list of expectations for infomediaries. These are (1) capacity to provide information in an accessible format; (2) willingness to share information; (3) ability to get hold of information and adapt it to a local context; (4) experience, education, knowledge and reliability; (5) accessibility, proximity and helpfulness; (6) social sensitivity and
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capacity to involve residents; and (7) leadership qualities, influence and moral authority (Schilderman, 2002). Gomez et al (2012) regrouped Schilderman's (2002) list into three main functions of an infomediary: help users, share information, and build relationships.

In this paper, we will advance the literature by (1) attempting to characterize the infomediaries that we mobilized and others who became infomediaries along the way according to their level of commitment to the initiative (2) expanding information on infomediaries by veering away from public access computing areas; we are more on the informal infomediaries (Gomez and Gould, 2010); (3) reflecting further on the quality of the services infomediaries can provide aside from their technical proficiency in using ICTs.

Methodology

The research context/ Data sources
We did this research in the hilly and mountainous province of Aurora in the Philippines, more than 200 km North of Metro Manila. For 11 months, we implemented the campaign in Bayanihan National High School in the town of Maria Aurora. Upland rice farming is practiced in the area. Slash-and-burn, which results in forest degradation, is a common practice. Landslide occasionally occurs in the hilly parts of the area.

In the school and the immediate community surrounding it, communication signal is challenging. People have to put their mobile phones somewhere steady to capture some signal. Our point-person in the school had to put her mobile phone in a fixed location to ensure signal would be received all the time. This poor ICT infrastructure may be due to the fact that the school is indeed in a remote area. It sits several kilometers away from the town center, road going there is unpaved, and one pays a little more than USD 1 to visit the downtown area. An ordinary farmer in the Philippines earns a little more than USD 2 daily (PhilRice, 2008). Poverty is well-pronounced in the area. People have limited sources of livelihood. Most of them are into farming. Some 90% of the locals are part of ethnic minorities, Igorot and Ilongot.
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The infomediary campaign

From May 2012 to March 2013, we pilot-tested the infomediary campaign in Bayanihan National High School. The campaign was composed of several activities, some of them we devised along the way when the original list of activities deemed inappropriate. The activities commenced with the faculty and staff consultation to determine the appropriateness of the campaign in the school setting, and to solicit support from the school officials. After which, a core group of students were sent to the Central Experiment Station of PhilRice in Nueva Ecija, neighboring province of Aurora, for a one-week rice appreciation course. We gave the school reading materials on rice production. A rice garden was set up in the school to give the students chance to grow rice on their own. The gardens showcased some of the popular upland rice varieties in the area as well as newly-released varieties. The students were introduced to and had tryouts of the PFTC and PRKB. We registered the mobile numbers of the students to PFTC so we could monitor their text messages. Owing to connectivity issues, we introduced the students to the offline version of the PRKB. Additionally, we capitalized on edutainment (education and entertainment) approaches in dealing with young people by injecting fun-based activities such as a parade during the campaign launch, study tours, and infomediary quiz bee.

A TechnoClinic, an event where we invited the parents of the students to consult their rice farming issues with a rice specialist, was conducted. It was the same event when we informed the parents that their children would be taught about rice farming. We had to engage the parents to establish the credibility of the students should they join farming discussions at home, and to encourage the parents to ask their children to search information on rice farming.

Methods

We used a range of methods in collecting data for this research. We conducted two focus group discussions (parents and students), individual interviews (19), and key informant interviews (4). Our field notes likewise provided good inputs for this paper. Content analysis of the text messages sent by the students to the PFTC was conducted.
Results and discussion

Infomediary categories in rice farming

There were plenty of cases when being an infomediary was manifested during the campaign implementation. This section endeavors to make sense of those instances by grouping them into three categories: farming ally, initiator, and champion (Table 1).

Farming ally pertains to students who searched for information in response to a query by their parents or other farmers. This is illustrated in the case below:

“My father asked about rice varieties we can plant. I texted the Text Center. The agent said Rc222 is good. I told my father about it. He planted Rc222.” (Franco, 15).

There were, however, instances when students felt they were not credible to talk about rice farming. They thought that their parents would not believe them (more on the next section). Initiator, on the other hand, pertains to students who volunteered to search for information. This is manifested in the case below:

“Farmers in our area have problems on rats. It was fortunate since during that time we were preparing for the quiz bee. I just read something about it … uhm… I told them they need to observe the usual times rat come out, establish a pattern… and that’s the time they can kill the rats…” (Arianne, 15).

The participants during the interviews showed they were confident to volunteer to search for information because of the PFTC:

“If you can’t answer it, just ask PhilRice. After all, they have the Text Center,” (Mario, 16).
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The statement above is at the very heart of the campaign. The students will indeed not be transformed to rice specialists in the period of 11 months. What matters, however, is they know where and who to ask help from. Figure 3 shows the technical questions sent to the PFTC by the infomediaries. Questions on varieties topped the list. This is not difficult to understand considering the impact on rice yield of good varieties. This is followed by queries on pests and integrated pest management (IPM). In our campaign site, the farmers had problems with rats. Aurora is frequently visited by typhoons so the queries on weather were likewise expected.

Being an initiator can likewise be manifested by offering reading materials to others. Some core group of students gave the reading materials they received from PhilRice to their parents especially for those who cannot see themselves working in the farm.

“I just gave the materials you gave me to my parents. They liked it!” (Clyde, 16).

Another instance that would show being an initiator was when the students talked about rice farming in their household. Parents related stories when their children shared something about when to apply pesticides, and that they should only be taken as the last resort.

“He told us that we should take note of the population of the beneficial organisms as that would inform if there is a need to apply pesticides,” (Lucila, 50s, parent).

Findings on being an initiator can fall under “capability to provide information in accessible format” and “willingness to share information” in Schilderman’s (2002) characteristics of infomediaries.

Meanwhile, champion refers to students and teachers who radiate the things they learned to more than one farmer. We documented cases when the students shared the things they know not just to their parents but to other farmers as well. Additionally, it should be noted that students were not the only ones who exhibited infomediary roles, but the teachers as well. The Technology and Livelihood Education
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teacher of the students initiated to use the materials we provided to teach about rice pests and diseases. The teachers in the school were champions as they helped in propagating the idea, and in mobilizing the students to become infomediaries. Findings showing being champions can fall under Schilderman’s (2002) characteristics of infomediaries: “social sensitivity” and “leadership qualities”. This is all about having the ability to sense the need of the larger community they belong to, and responding to it in ways they know.

Several things can be said of the findings of this study. First, the infomediaries, the young upland students, were different from the traditional notion of infomediaries in the PACs (formal infomediaries). The students were more of the informal infomediaries (Gould and Gomez, 2012). This is an important point to highlight since if the discipline were to focus mainly on the formal infomediaries, it might lose sight of others outside the confines of PACs who can likewise perform similar roles. Hence, if informal infomediaries such as the students, will be given attention in a form of a training or a campaign similar to the present initiative, then the chance for improved information access in the uplands is higher owing to their number. Additionally, informal infomediaries, in this case the students, are far more accessible to farmers than the formal infomediaries. It should be noted that inadequacy of time to do things other than farmwork is among the reasons farmers could not optimize PACs where formal infomediaries are located. Hence, engaging informal infomediaries makes complete sense.

Second, this highlights the need to train infomediaries not just on improving their technical proficiency in using ICTs, but also on the technical side of the subject that they are trying to access for others. In the literature, young people are lauded for being tech-savvy. Their being an infomediary was manifested in downloading and/or uploading information for others. While this is appreciated, there is a need to step up this initiative by also building on their knowledge on the subject they would like to access information about. The infomediary campaign was built around engaging the youth in agriculture so they could become better infomediaries. The youth need to realize first the value of what they are doing, appreciate it, and share what they know to others. Even as the training is not really meant to make young people rice specialists, what matters is they know who and where to ask help from. Again, this is an important point
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since a PhilRice study notes Filipino farmers’ awareness of the information services (e.g. PFTC and online platforms) of PhilRice is not very high (Malasa, 2012). Farmers will unnecessarily suffer from information poverty if they are not well-informed of these information services.

Thirdly, we would like to emphasize the “offline” functions of infomediaries. Given the conditions in Bayanihan, there is a need to look beyond the association between online means and performing infomediary roles. In our results we showed how effectively the infomediaries performed their roles using offline means (using the materials given as reference materials in classroom, giving of reading materials to others, and sharing to others what was received from the Text Center). In the past, Manalo (2012) documented how young Filipinos use others’ (their friends’ or family members’) mobile phones for their own purposes. This act very well resonate the sharing mechanism (James 2004) that is widely practiced in developing countries. The same author noted that if scholars were to factor in sharing mechanism, digital divide could be significantly narrowed. Using the same analysis in the context of the present initiative, there is then wisdom to follow through what infomediaries do with the information they access. Documenting solely the act of downloading and uploading materials from and to the Internet will result in lukewarm and to some extent shallow appreciation of the infomediary roles. Understanding the communication dynamics, and a more nuanced research following how an information is transferred from one source to another is in the right direction.

**Challenges in implementing the infomediary initiative**

While it can be said that the infomediary campaign has achieved some level of success, some points should be considered to optimize its usability. First is in relation to the level of technology available in the area. Given that the area did not have internet access, the campaign used the offline version of the PRKB. There was little evidence, however, that the students were able to use it, which can be due to the inadequacy of the computers in the school. At the time of data collection, there was only one unit available for the students. The unit had to be properly taken cared of since it was also being used for several other purposes such as for administrative work of the faculty. Hence, this raises the concern on
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the computerization efforts in public schools in the Philippines. To date, computerization remains low, which can likewise be the reason many students in rural schools suffer from computer anxiety or the feeling of discomfort when in front of computers. We observed this during the infomediary quiz bee. There was a team whose members did not know how to use the computer so they did not score a point during the round when they had to search answers from the offline version of PRKB.

Intensifying engagement with parents is the second concern. While we did have an activity to inform the parents of the campaign in school, we feel that it was inadequate. First, it is ambitious to think that parents/farmers would change their old ways in a matter of 11 months. “To see is to believe” is an unwritten rule in rice farming. There is so much proving and disproving that need to be done before change is possible. In our focus group discussion with the students, some related they were shy to talk about farming with their parents since the latter would not believe them:

“I’m shy. They’ve been farming for years. They won’t believe what I would say,” (Charito, 15)

Intensifying engagement by reiterating the credibility of the students and crafting more activities to engage the parents might improve the whole process of information exchange.

Thirdly, land ownership likewise had some bearing on the success of this initiative. Many participants wanted to perform their roles as infomediaries, but they could not do so since they did not have land. Most of their parents were tenants. We surmise the interest to improve their rice farming venture will be largely influenced by their land tenurial status.

Policy implications

There are several realizations that can be gleaned from this campaign, which we wish to forward:
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- *It cannot be fully digital.* This campaign utilized several online and offline means. Complementation was key in mobilizing young people in this campaign. Offline means were resorted to when online means failed.

- *Finding more champions, either students or teachers, will increase success of the infomediary initiative.* In Aurora, there were still plenty of technological issues. Hence, it would be impossible to get all of the students to send messages to the Text Center. Mobilizing champions, people who will share the information they learn, is in the right direction. Sharing mechanism is said to be a viable way in bridging the digital divide in developing countries.

- *Keeping the excitement alive.* More than making young people realize that they can do something for their parents, it is imperative that fun-based activities must be devised. We noticed this during the infomediary quiz bee when the participants reviewed and fought hard for the prizes at stake while learning in the process.

- *Reiteration of making ICT infrastructure available.* The move to computerize public schools started decades ago, and yet many state-run schools in the Philippines still lack decent computer access. During the campaign implementation, we witnessed the enthusiasm of the students to use laptops (we lent them laptops whenever we had activities in the school) and search through the PRKB. The spirit to help their farmer-parents was already present. The conducive environment, however, for them to learn how to use computers was absent.

- *Training on ICT proficiency and the art and science of rice production.* The students must be proficient in using different ICTs so they could use the information from the PRKB in their school. Rice appreciation course is necessary as it will help them search for valuable and relevant information. It will help them ask intelligent questions to the Text Center.

**Conclusion**

Drawing on from the results of this study, it can be said that there is evidence that young people can be mobilized to serve as infomediaries for the uplands. This can do much in addressing the information poverty in the area. Policymakers and practitioners, however, must pay attention to the challenges
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forwarded as far as implementing the infomediary initiative is concerned. For practitioners, there is a need for serious and active engagement of parents or the farmers in the community. They should be made aware of the new involvement of their children so they can ask for their help in searching for cost-reducing and yield-enhancing technologies on rice farming. For policymakers, it would do well to address the level of ICT infrastructure in the rural areas. As we write, provision of computers in schools would do well for this initiative since there are offline versions of the information materials provided, if internet connectivity will take some time to realize. Theoretically, this research provides reason for scholars to look into ways by which informal, not just formal, infomediaries can be mobilized to address the digital divide in underserved communities. In the uplands, where accessing a formal public access computing facility is a real challenge, counting on informal infomediaries may be more practical and useful. Hence, much work is needed on optimizing the informal infomediaries to bridge the information poverty in the uplands.

References


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Raihan, A. (2007). Community access points or telecentre movement in Bangladesh.


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FIGURES

Figure 1. Campaign billboard.

Figure 2. The students searching in the offline version of the PRKB during the infomediary quiz bee.
Figure 3. Technical questions sent to PFTC.

TABLES

Table 1. Classifications of infomediaries in rice farming.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Description</th>
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<tbody>
<tr>
<td>Champion</td>
<td>Does things that are not expected of them; radiates what was learnt to more than two persons; shows leadership in exercising infomediary functions</td>
</tr>
<tr>
<td>Initiator</td>
<td>Volunteers to search for information; shares information in the household</td>
</tr>
<tr>
<td>Farming ally</td>
<td>Responds to queries</td>
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