
RETENTION AND ADOPTION OF INFORMATION IN THE TV SCHOOL-ON-THE-AIR PROGRAMME, *HANEP GULAY* IN MAJAYJAY, LAGUNA, PHILIPPINES

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ABSTRACT

This study determined the effect that the school-on-the-air programme, “Hanep Gulay”, had on the participants through their retention and adoption of the information. A self-administered retention test and a researcher-administered adoption test were handed out to 27 students in Majayjay, Laguna; eight of which participated in the focus group discussion. Results of the study showed that the retention and adoption of the information from “Hanep Gulay” were low to moderate. Many students had recalled information from the ‘Atsarang’ Papaya (pickled Papaya), as one participant said her own knowledge may have helped her remember the information; a minority recalled information from the Garlic Flakes episode. Many students had a low level of recall as some participants missed the discussion of the lessons as they arrived late to the watching area. More than half of the students adopted the information from the ‘Atsarang’ Papaya episode, while a minority adopted the information from the Garlic Flakes and Candied Squash episodes as the focus group participants considered them useful and can be disseminated to others. To improve their retention and adoption of the information, the students suggested the conduct of follow-up visits, continuation of the programme on television, involvement of more popular hosts, speaking at a slower pace, and improving the audio quality of the productions.

Keywords: *school-on-the-air, TV programme, mediated communication, nonformal education, information retention, information adoption, development communication*

INTRODUCTION

School-on-the-air (SOA) programmes discuss a single subject matter in a systematic and progressive manner in order to meet its desired outcomes. These types of programmes often employ instructional techniques, although its broadcasts are not taken under classroom conditions. People listen to these programmes from their own homes or anywhere convenient. Radio stations and government agencies utilize these types of programmes to reach out to different segments of society, such as the farmers and the out-of-school youths. To provide teaching lessons that would be necessary to improve the standard of living (Bandalaria, 2007). The study by Flor (1995) proved that the SOA is one of the most effective and promising form of non-formal education.

Hanep Gulay is a SOA programme written and produced by undergraduate students from the BS Development Communication course Broadcast-based Distance Learning Systems (DEVC 133 ST-4L, 2013). Unlike previous SOA programmes that were conducted by the students *Hanep Gulay* is based on cable television instead of the usual radio. The programme was designed to teach housewives about vegetable processing and preservation given the town's overproduction of vegetables. *Hanep Gulay* consisted of eight (8) episodes. Quizzes were given to the students after each episode. A total of 47 students enrolled in the programme (12 of which have graduated from the programme). Only 27 students gave their consent and participated in the study 77%.

All learning implies retention, and if nothing is retained, it implies that learning did not occur (Nunez, 1983, as cited by Guerra, 2009). Adoption is a major consideration for the SOA programme where technology or information being disseminated on the programme should be adaptable to local conditions (Librero, 1976).

Research Objectives

The study is aimed to determine the effect of the SOA programme on its on-stay mothers several months after airing. Specifically, the study aimed to:

- (1) find out the information retained by the *Hanep Gulay* students;
- (2) determine the level of recall of the lessons from the *Hanep Gulay* programme;
- (3) find out the information adopted by the *Hanep Gulay* students;
- (4) draw out recommendations on how to improve the retention and adoption of information.

School-On-The-Air

SOA served as one of the earliest forms of open and distance learning in the Philippines, as radio was one of the most accessible medium in the country. The first SOA, Pacifico Sudario's Farmers' School-on-the-Air (FSA) was conducted in 1952. The programme was conducted on a one-kilowatt radio station in Iloilo with 150 participants. The format of FSA was later adopted by other radio stations and government agencies. Radyo DZLB, a community radio station at the College of Development Communication has sustained its use of SOA until today. The first SOA was produced in 1967. Radyo DZLB has created more than 32 SOAs and produced approximately 14,000 graduates (Bandalaria, 2007). Radio DZLB planned and broadcasted the first school programme in 1970. By 1976, a school-on-the-air programme focused on common rice pests and diseases was launched, and schools focusing on sorghum followed (African Farm Radio Research Initiative [AFRRI], 2008).

Television as an Educational Medium

Television has great potentials for nonformal education (Cadiz, 2008). Television's audio and visual components can help to reinforce information provided by the programme the viewers had watched. It also has the ability to transmit the language of sight and sound simultaneously from the sender to the receiver. It can also inform, inspire, motivate, and educate as well as have an ability to command an entire audience (Read, as cited in Peralta, 1998). According to Davin (2003), "*Healthy viewing: the reception of medical narratives*" as "sophisticated and insightful" people that can interpret the material in complex and unpredictable ways. Interest in television as an education medium has increased. Most educational television programmes that were developed to improve literacy among children such as the Sesame Street. Television also supported distance learning programmes among adults. Such programmes are successful in achieving their educational outcomes (Bates, Bryant, Alexander and Brown, Soudack, as cited in Moeller, 1996). Television is an accessible medium; it can reach learners that were not able to participate in traditional

literacy programmes. Television is accessible in terms of its content and technology. Moreover, viewers are intimately familiar with the content of television and tend to associate it with pleasurable experiences because of its entertainment capabilities (Bates, as cited in Moeller, 1996).

Information Retention and Adoption

Retention of information refers to the amount of message remembered as measured by a recall test after the students' exposure to the SOA (Lavadia, 2003). In this study, information retention shall also refer to both perceived and actual retention levels. Studies on the retention of information in SOA programmes (Lavadia, 2003; Marin, 2009, and Guerra, 2009) showed that the students have higher levels of information retention. SOA programmes on biotechnology, lanzones production, and shrimp cultivation, respectively, showed moderate to lower levels of information retention. Recommendation that the SOA programmes run at a slower pace to improve the retention of information from the programme was also found in one of this studies.

Adoption of knowledge may be expressed in different forms: direct application of actual practice, information transmittance, and the act of further learning /increasing knowledge presently had (Angeles, as cited by Lavadia, 2003). SOA must be adaptable to local conditions, and must have an abundant supply of resources in the locality where it would be adapted (Librero, 1976). Studies on the SOA programme by Angeles (as cited in Lavadia, 2003), Marin (2009), and Guerra (2009) showed that the adoption of the information disseminated was affected by the local conditions such as available resources and capital. Marin (2009) indicated that majority of the students were able to adopted the information from the programme as they became information sharers. Angeles (as cited in Lavadia, 2003) and Guerra (2009) also found that some students were not able to able adopt the information as there were no available resources and capital for them to practice what they had learned.

THEORETICAL/CONCEPTUAL FRAMEWORK

This study was guided by Michael Scriven's Goal-Free Evaluation Model and the Principle of Selective Retention (Scriven, 1991). Goal-free evaluations can be adapted for use with other evaluation approaches, models, and methods and can also be used for both quantitative and qualitative methods (Youker & Ingraham, 2013). The students' recall/retention of information and adoption of information is studied without focusing on the programme's intended objectives. Literatures on SOA programme evaluations were focused on the retention and adoption of information.

According to the principle of selective retention, people remember more accurately the messages that are closer to their beliefs, interests, and views than the messages that contrast them (Marin, 2009). The audience can remember the topics discussed in the SOA programme if these were closer to their interests, views and beliefs.

Figure 1 shows the conceptual framework used in this study. Both retention of information and adoption of information by students who watch *Hanep Gulay* programme were investigated.

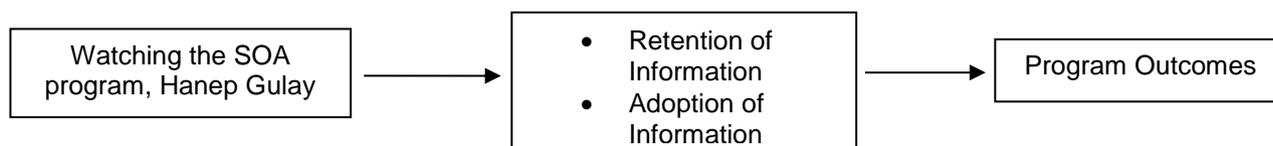


Figure 1: Conceptual Framework of the study

METHODOLOGY

Research Design and Instrument

The study followed the survey research design, which is commonly used in evaluation research, a type of research that assesses the performance of specific programmes, products, and/or organizations (Frey, Botan, & Kreps, 2000). There were 27 students from the *Hanep Gulay* programme who gave consent and participated in the study. Some students had moved to different locations while others were not available at the time the study was conducted. Two questionnaires were handed out to *Hanep Gulay* respondents: a self-administered retention questionnaire and a researcher-administered adoption questionnaire. The retention questionnaire contained questions from quizzes and pretest posttest forms from the *Hanep Gulay* programme. The retention test was given to measure the respondents' knowledge retention several months after *Hanep Gulay* has aired. The questionnaire consists of 30 items, 5 questions for each *Hanep Gulay* module. The adoption questionnaire covered students' demographic and socio-economic characteristics, and their adoption of the information. This was used to find out the information adopted by the housewives from the *Hanep Gulay* programme. In addition, a focus group discussion was conducted with the students to draw out recommendations.

Data Analysis

Data from the retention and adoption tests were analysed through frequency counts and percentages. Data from the focus group discussion were analysed through exemplars or embodiments of an inductive construct, using only some of the data that would lend insight into a social action or discourse (Lofland, as cited in Lindlof, 1995). These were used to draw out suggestions on how to improve the programme. Meanwhile, some data from the focus group discussion pertaining to the retention and adoption of the information were analysed through thematic analysis, a method for "identifying, analysing, and reporting themes or patterns among data" (Braun & Clarke, 2006). The data were used to validate the results of the retention and adoption tests by providing insights in the results from those tests through some of the responses of the participants from the focus group discussion.

RESULTS AND DISCUSSION

Demographic and socioeconomic characteristics

Most (96.30 %) of the students who participated in the study are female. One-third of the students (33.33) only finished high school. A minority of the participants works as *Barangay* Nutrition Scholars (22.22%) and eight students were housekeepers/housewives. These demographic and socioeconomic characteristics of the students of *Hanep Gulay* is shown in Table 1.

Table 1: Demographic and socio-economic characteristics of the students of *Hanep Gulay*.

Characteristic	Frequency	%
Gender		
Female	26	96.30
Male	1	3.70
Educational Attainment		
Finished High School	9	33.33
Entered College	6	22.22
Finished College	5	18.52
Entered High School	3	11.11
Finished Vocational Course	3	11.11
Finished Elementary	1	3.70
Occupation		
Housekeeper/ Housewife	8	29.63
BNS (<i>Barangay</i> Nutrition Scholars)	6	22.22
Own Business (Real Estate, Bakery, Swine)	3	11.11
Food Vendor (<i>Atsara</i> maker, Fish vendor, Caterer)	3	11.11
ALS Teacher	2	7.41
None	2	7.41
<i>Barangay Kagawad</i>	1	3.70
Beautician	1	3.70
Tutor	1	3.70

Information retained

The respondents took a 30 item retention test, covering six *Hanep Gulay* modules (each module consists five questions). The number of correct answers was counted per module, as well as the overall total. The results indicate that more students got high scores (4 – 5 points) in the *Atsarang Papaya* (*pickled Papaya*) and Garlic Flakes modules. There were a total of 19 (70.37 %) students who got high scores on the *Atsarang Papaya* (*pickled Papaya*) module, while there were a total of 7 (25.93 %) students who got high scores in the Garlic Flakes module. Table 2 below shows the scores (number of correct answers in the retention test) of the respondents in each module of *Hanep Gulay*.

Table 2: Respondents' scores on the information retention test on each module of *Hanep Gulay*

Modules	Test Scores															
	0		1		2		3		4		5		Blank		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Vegetable Processing	1	3.70	2	7.41	8	29.63	12	44.44	4	14.81	0	0.00	0	0.00	27	100.00
Garlic Flakes	0	0.00	3	11.11	1	37.04	7	25.93	5	18.52	2	7.41	0	0.00	27	100.00
Atsarang Papaya	0	0.00	0	0.00	0	0.00	8	29.63	9	33.33	10	37.04	0	0.00	27	100.00
Powdered Ginger	0	0.00	4	14.81	8	29.63	10	37.04	4	14.81	1	3.70	0	0.00	27	100.00
Atsarang Pilipino	1	3.70	1	3.70	1	51.85	9	33.33	1	3.70	0	0.00	1	3.70	27	100.00
Candied Squash	1	3.70	6	22.22	1	44.44	4	14.81	3	11.11	0	0.00	1	3.70	27	100.00

Legend: # - frequency % - percentage

In the focus group discussion, the participants were asked what episodes they recall. Many of the participants said that these were the *Atsarang Pipino*, Garlic Flakes, and Candied Squash episodes. Majority of the participants said they also remember the *Atsarang Papaya* episode, as one particular respondent said, (translated) "Because I had knowledge in

making *atsara*, I can do various types of it.” This meant that the participant’s own knowledge may have contributed to her retention of the information from that particular episode. They also cited various factors that could be linked to their retention of information including information sharing, increase in knowledge, behavioural effect, memory, and usefulness.

Perceived Retention Level

The respondents were asked to rate themselves a perceived retention rating from 1 to 5. One-third of the respondents (9 out of 27) gave themselves a perceived retention rating of 3, indicating that they only remembered some of the information that the *Hanep Gulay* had conveyed. Eight respondents gave themselves a perceived retention rating of 2, indicating that they did not remember much of the information. Table 3 below shows the respondents’ perceived level of retention several months after watching *Hanep Gulay*.

Table 3: Students’ Perceived Retention Levels on the information from *Hanep Gulay*

Perceived Level	No. of Respondents	%
3	9	33.33
2	8	29.63
4	7	25.93
5	3	11.11
Total	27	100.00

Most of the respondents cited time (“*Matagal na ang lumipas*”) and that they remember only some of the information (“*Yung iba naalala pa; nalimutan na yung iba*”) as their reasons. Of the eight respondents who gave themselves a rating of 2, three respondents cited time as a reason. Of the nine respondents who gave themselves a rating of 3, two respondents cited time as a reason, another two respondents cited that they remember some of the information, and another two of them cited signal problems. Of the seven respondents who gave themselves a rating of 4, three of them cited that they remember some of the information as a reason. Lastly, two of the three respondents who gave themselves a rating of 5 said that they fully remember the information that the *Hanep Gulay* conveyed (“*Lubos kong naalala*”). Table 4 shows the reasons cited by the respondents on why they gave themselves such perceived retention ratings.

Table 4: Reasons for perceived retention levels by the students

Reason	Perceived Retention Level				
	2	3	4	5	Total
A long time has passed	3	2	1	0	6
I remember only some of the information	1	2	3	0	6
Forgot the exact date /Forgotten/Forgetfulness	3	1	1	0	5
No signal	0	2	0	0	2
I am interested	0	0	1	1	2
I fully remember	0	0	0	2	2
Not too informative	1	0	0	0	1
Age matters	0	1	0	0	1
New knowledge	0	1	0	0	1
Livelihood	0	0	1	0	1
Total	8	9	7	3	27

In the focus group discussion, all eight respondents remember some of the information conveyed. Some of them cited their late arrival to the lessons as one of the main reasons. Meanwhile, one participant said that she remembers the information (in particular, *Atsarang Papaya*) because “atsara is my business” (translated). Another participant claimed she remembered some of the information because she is “quite forgetful” (translated). One participant said that she remembers some of the information because “ginger is said to be a simple medicine to stomach ache” and “an anti-cancer agent.”

Actual Retention Level

The actual scores from the retention test were classified as low (0 -17 points), moderate (18 - 23 points), and high (24 – 30 points). Table 5 shows that none of the students had a high level of recall (24 to 30 points). Only seven respondents (25.93%) had a moderate level of recall (18 to 23 points), and the remaining 20 respondents (74.07%) had a low level of recall (0 to 17 points).

Table 5: Frequency of Respondents’ actual retention level

Level Of Recall (Perfect Score = 30 Points)	Frequency (N=27)	Percentage (%)
0-17 (Low)	20	74.07
18-23 (Moderate)	7	25.93
24-30 (High)	0	0.00

In the focus group discussion, the participants were asked how much of the information do they recall from the episodes of *Hanep Gulay*. Half of the participants’ (four out of 8) responses were classified in the low level of recall (0 - 59 %). Three out of four participants claimed that they missed the discussions on the lessons as they came late to attend to the area where they watched the episodes; one of them said that she came late because of transportation reasons. She said (translated), “It’s difficult to get a ride from my place; that’s why when I arrived, the episode has concluded”. One participants said that she remembers 60 % of the information because she too missed the discussions, arriving late at the watching area sometimes. Another participant remembers 70 % of the information. Two participants claimed remembering a lot of the information (and were categorized belonging to high level of recall).

The principle of selective retention states that people will remember messages more accurately that are closer to their beliefs, interests, and views (Marin, 2009). The results on the retention of information and level of recall of the students indirectly support the premise when the respondents said that they remembered the information on *Atsarang Papaya* because it is in their interests, such as it being “their business” or they already had their own knowledge on the topic, or they believe in the benefits of the information disseminated to them. Also, it can be noted that time was also perceived as a factor for their retention of information; since the study was conducted months after the programme aired and some of the respondents were also forgetful. Furthermore, the results on the level of recall showed that more students had a lower level of information retained, similar to the findings of the some of the aforementioned studies on *Hanep Gulay* programmes.

Information Adoption

A researcher-administered questionnaire consisting of dichotomous and multiple choice questions given to the students to find out their adoption of the information that the programme conveyed. From the 27 students who answered the adoption questionnaire, many (70.37 %) of them had said that they adopted the information from *Hanep Gulay*. Almost 30 % were not able to adopt the information that *Hanep Gulay* had conveyed to them. Table 6 shows the respondents’ adoption of the information from *Hanep Gulay*.

Table 6: Respondents' adoption of the information from *Hanep Gulay*

Response	Frequency	%
Yes	19	70.37
No	8	29.63
Total	27	100.00

However, in the focus group discussion, all eight participants claimed to have adopted the information *Hanep Gulay* had conveyed. Each participant subsequently began identifying which information/module she had adopted. When asked to what extent did the students adopted the information they learned from *Hanep Gulay*, majority (68.42%) of them said that they directly applied it and shared the information with other people. A minority of them claimed that they became information seekers (26.32%); they sought more information about the topics, while a few of them cited other extents of adopting the information (15.79%). Table 7 below shows their extent of adoption of the information from *Hanep Gulay*.

Table 7: Extent/Form of Adoption of Information by the students of *Hanep Gulay*

Form Of Adoption	Frequency (N = 19)	Percentage (%)
Direct Application	13	68.42
Information Sharing	13	68.42
Information Seeking	5	26.32
Other	3	15.79

In the focus group discussion, most (6 out of 8 participants) of the participants' responses were thematically about directly applying the information. Generally, they used the recipes as side dishes, ingredient for other recipes or as one participant claimed, as "dessert," referring to *Atsarang Papaya*. The remaining two responses were about the sharing of information.

Regarding those who had not adopted the information, approximately thirty-eight percent had said that they do not have enough capital. Table 8 shows the reasons why the students of *Hanep Gulay* were unable to adopt the information from *Hanep Gulay*.

Table 8: Reasons for non-adoption of information from *Hanep Gulay*

Reason	Frequency N = 8	Percentage %
Lack of capital	3	37.50
Other reasons	3	37.50
No available vegetables	2	25.00
No available ingredients	1	12.50
The staff of <i>Hanep Gulay</i> weren't able to return and follow up and guide us	1	12.50
No supply of vegetables	0	0.00

When asked what information they adopted from the *Hanep Gulay*, most of the respondents mentioned adopting the information from the *Atsarang Papaya* module. More than half of the students (57.89%) were able to adopt the information from the *Atsarang Papaya* module. A minority (36.84%) of the students were able to adopt the information from the *Garlic Flakes* and *Candied Squash* modules. Table 9 shows the information that the respondents had adopted from *Hanep Gulay*.

Table 9: Information adopted by the students from *Hanep Gulay*

Information/Module	Frequency N = 19	Percentage %
Atsarang Papaya	11	57.89
Garlic Flakes	7	36.84
Candied Squash	7	36.84
Powdered Ginger	3	15.79
Atsarang Pipino	3	15.79
All Information	1	5.26
Introduction To Vegetable Processing	1	5.26

In the focus group discussion, five out of eight participants had adopted information in the *Atsarang Pipino* episode, while half of the participants said that they adopted the information from the *Garlic Flakes* episode. One of the participants adopted the information from all episodes, because the information from these episodes were useful information sources, saying (translated), “I was able to get important information from each episode, especially the ones about the nutritional content each episode or the nutritional facts on vegetable, I can share this information when there are studies being conducted.” Meanwhile some of them adopted the information concerning nutritional value. One participant said (translated), “It’s episode number 2, I adopted the preparation of garlic flakes, then, pickled cucumber because I can get vitamins B and C from it.” Another participant said (translated), “For me, it’s the creation of pickled cucumber. This is rich in Vitamin A.” Also, another participant said (translated), “Squash is rich in Vitamin A good for the eyes. Ginger is a medicine to stomach ache and is good for the voice.”

The information that the *Hanep Gulay* disseminates should be adaptable to local conditions as suggested by Librero (1976). It was also mentioned that the town concerned in the study (Majayjay) had an overproduction of vegetables, thus, enabling many of the students to use some of the information they learned from the programme, such as *Atsarang Papaya*, *Candied Squash* and *Garlic Flakes*. The results show that many of the students were able to adopt the information on *Atsarang Papaya*, *Candied Squash*, and *Garlic Flakes*, by directly applying or sharing the information of they learned from the module.

Suggestions to Improve Retention and Adoption

In the focus group discussion, the participants also gave recommendations on how they could remember more and use the information conveyed in the *Hanep Gulay* programme. These suggestions include follow-up visits, reviews, checking the audio component of the modules, speaking in a slower and clearer pace, and maintaining the programme on television. One participant suggested that the staff should leave a pamphlet or a handbook about the recent *Hanep Gulay* programmes, saying (translated), “I wish they would give us leaflets or a handbook about the recent school-on-the-air.” Another participant suggested (translated), “For me, review the lessons on television, and visit us and follow up on us so it won’t leave our minds.” Another participant suggested (translated), “Perhaps the teachers should study how they can make us understand the lessons they will be teaching, and then, ask the majority where they are interested to learn. Then, add more visual aids, and get a better known person to teach the lessons, like a celebrity.” Another participant suggested that the host/s should speak more clearly, saying (translated), “They need to speak clearly and not too much on television; volume should not be loud, very loud because it is deafening; that’s why they need to take it slow so we can understand what we are studying.” Some of the participants suggested maintaining the *Hanep Gulay* on television so they can remember more of the lessons and be able to use them. Follow-up visits would be costly, as one participant pointed out. In response to the high costs of following up on the students,

she suggested (translated), "If you're going to teach us and cannot follow up on us, then you can give us pamphlets, anything we can read through, or discs that would contain them."

Scriven's goal-free evaluation model looks at all the possible effects of a programme to its audience in order to further improve the programme (Scriven, 1991). Thus, the suggestions elicited from the students in the focus group could serve as a guide for further improvement of SOA programmes such as *Hanep Gulay*.

CONCLUSION

Hanep Gulay had an overall low to moderate effect in terms of retention and adoption of the information it conveyed. Many of the respondents were able to highly retain the information from the *Atsarang Papaya* episode. A minority of the respondents were able to retain the information from the Garlic Flakes episodes. Many of the students of the *Hanep Gulay* had a low level (59% below) of information retention. This result may be attributed to the respondents missing out on the discussions of the lessons because they arrived late to the watching area. Of the 19 students (70.37%) who had adopted the information, more than half (57.89%) of the respondents had adopted the information on the *Atsarang Papaya* episode. A minority (36.84%) of them was able to adopt the information on Garlic Flakes and the Candied Squash episodes. Some of the students adopted the information from the episodes because they were useful information sources that can be disseminated, such as the vegetables' nutritional value and benefits. The recommendations from the participants include follow up visits, review on television, clearer discussion of the topics, involvement of more popular hosts, and speaking in a slower pace. They also suggested that if the follow up visits is costly, modules in the form of pamphlets or compact discs could be left with them. The participants also suggested that the programme is maintained on television so that they could remember more information and be able to use what they have learned.

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