

ペルー遠隔教育中学校におけるテレビの 教育効果の調査報告

宇佐美 昇 三*、赤 堀 正 宜**、久保田 賢 一***、
アラベルト・パラシオス**、角 替 弘 規**¹

The Effects of Instructional Video in Distance Learning in Junior High Schools in Peru

Shozo USAMI*, Masayoshi AKAHORI**, Kenichi KUBOTA***,
Alberto PALACIOS**, Hiroki TSUNOGAE**

この報告は平成12年度～14年度科学研究補助金基盤研究(B)2(課題番号12571042、研究代表者：赤堀正宜・桐蔭横浜大学²)として実施した「ペルー遠隔中学校におけるテレビの教育効果研究」の主として宇佐美昇三担当部分である。これまで、科研費報告書(平成15年3月)をはじめ、日本教育メディア学会、日本映像学会で、各年次の調査結果を明らかにしたが、これだけをまとめたものはない。さいわい2003年9月4～7日、韓国ソウルで開かれたKAEIB(韓国教育情報・放送研究学会)と日本教育メディア学会の合同研究会で、口頭発表する機会を得たので、新資料を加えて、ここに新たに書き下ろした。ペルー現地での調査備忘録(邦文)を付し、今後、同様の調査される方のご参考とする。

ABSTRACT :

This paper outlines a pilot study of Peruvian distance learning in junior high schools (hereafter referred to as "DJHS") conducted in 2000-2002. Results of the study are as follows:

- 1) Multimedia lessons were effective in increased learning, especially in Mathematics.
- 2) Student reactions to the multimedia lessons included "interesting", "useful" and "could concentrate."
- 3) Through the daily watching of TV in school, student's visual comprehension skills improved significantly.

Key words : distance learning junior high school, multimedia, media literacy, Peru

¹ 駒沢女子大学*、桐蔭横浜大学**、関西大学***、

Komazawa Women's Univ.*, Tooin Univ. of Yokohama**, Kansai Univ.***

(This research was subsidized by the Japan Society for the Promotion of Science, Grant-in-aid for Science Research in a Foreign Country (B-2) #12571042, Akahori Masayoshi, scholar-in-charge.)

I. INTRODUCTION

1. Background

This research project was conceived in 1999, the year that Professor Masayoshi Akahori started working for the Japan International Cooperation Agency (JICA) as a supporting expert for a pilot project in distance learning for the Peruvian Ministry of Education. At this time, the authors obtained funds from the Japanese Ministry of Education to conduct an investigation into the effects of this project. During the first year in April (2000), Mr. Akahori's research team visited a training center near Lima to meet the prospective tutors for DJHS. About 120 tutors answered our questionnaire which asked them about their careers and the problems of education in their schools. For the second year (2001) we carried out a series of case studies in Piura State in cooperation with the Peruvian Ministry of Education (MOE). This included measuring the levels of

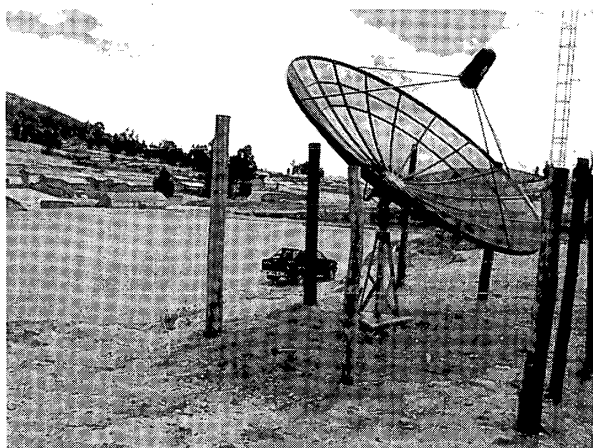


Photo 1 : An antenna receiving ETV programs was installed at the Canchapunco DJHS in Junin ; DJHSs in Junin were situated in the mountainous Andes area. Some schools' altitude was more than 4000 meters above sea.

achievement for distant junior high school students, their levels of motivation, and their visual literacy abilities. During the third year (2002), we visited Jurin State and tried to confirm the effects of the Huascarán Project, a new project which is being integrated with the original junior high school distance learning project.

Usami only participated in the year 2001 - 2002 surveys conducted with Mr. Akahori and other researchers. This paper is mainly written from the scope of his research.

2. Purpose

To measure the effects of multimedia instruction at DJHSs in Peru.

3. Method

3.1 The year 2001 surveys

- 1) Quasi-experimental methods were employed: there were a small number of students in their usual classrooms who were tested on their scholastic achievements.
- 2) Questionnaires were used to measure student motivation after they had watched the video.
- 3) A visual literacy test was given to measure the degree of DJHS students' recognition of visual information presented in instructional video programs. The visual literacy test was also administered in a regular junior high school in the city of Piura in order to discover any differences in visual literacy between students who were able to watch commercial TV and those who watched only instruc-

tional videos.

3.2. The year 2002 Surveys

In the year (2002), we administered the above types of tests in 10 DJHSs in Junin State in Peru, including one model DJHS in Huacrapuquio to which three tutors were assigned and more than ten computers were installed for students to access the Internet. A typical DJHSs had one or two tutors and only one computer installed for official use. This permitted checking the validity of the previous survey in 2001.

4. Other Surveys

Field surveys employing interviews and questionnaires administered to the tutors, parents, students and the officials in charge of the Huascarán Project were widely done by Akahori Kubota, Tsunogae and Paracioso. Video recording was also done. Those data compiled were reported in English and in Japanese (Akahori, 2003) *The Effects of Instructional Video in Distance Learning in Secondary Schools in Peru* (Report of Research, Grants - in Aid for Scientific Research, No. 12571042).

5. Limitations

As mentioned above, this was a pilot study based on quasi-experimental methods. The number of subjects employed was small (10 in La Islia and 19 in Limon). Therefore, the results of the survey cannot be universally applied to Peruvian DJHS students.

II. STUDENT ACHIEVEMENT SURVEY

1. Outline of the Research (Usami Participated)

1.1. When

August 13 through August 31, 2001, and September 3 through September 16, 2002.

1.2. Location

In 2001, two rural villages were selected: La Islia, representing a coastal area, and Limon, representing a mountainous area. Both villages were in Piura State, the northern-most state of Peru and the nearest to Ecuador. Commercial electrical power was limited in these villages and the students had not been exposed to commercial television programs. Each village had a DJHS project with appropriate number of students.

In 2002, ten DJHS in Junin State a hundred kilometers East of Lima City were surveyed. One of them was a model school under the Huascarán Project. The research team was separated after we visited the model school. Later Team P (Paracioso and Usami), visited 5 DJHSs and Team Q (Kubota, Tunogae and Rosemary (from the Peruvian MOE), assisted by an interpreter, tested 4 DJHSs.

1.3. Subjects

There were a total of 29 first-year male and female students studying in these two DJHS, 10 first-year students in La Islia and 19 first-year students in Limon in 2001.

A total of 126 first-year male and female students were in ten DJHSs in Junin in 2002. The grand total of students actually tested

was 138 because of absentees.

1.4. Purpose

The aim of the survey was to measure the effects of multimedia lessons given to students in DJHS. None of the DJHS teachers specialized in all of the subjects being taught. Instead there was a tutor who supervised all the students to see that they attended regularly and followed a schedule for individual study, using texts, and workbooks. The tutor also gave the video lessons by playing the cassette of teaching materials as required by the schedule.

Our original 2001 plan was to try our research project on a small scale. Then in 2002, we would expand the project to a larger scale, to check the validity of the data at the various DJHSs with help from the Peruvian MOE. However, after 2002, the DJHS project was almost stopped. One reason was the Peruvian MOE started a new project, the Huascarán Project, and turned most energy to the new one but the scope was not clearly explained under the new regime. The supply of textbooks and video materials to DJHSs was discontinued after the middle of 2002, and tutors had to teach students directly, even though most of the subject matter was not their special areas.

1.5. Method

1.5.1 The year 2001

We used multiple-choice achievement tests to measure the effects of multimedia lessons in classes in Communication, Science and

Mathematics. As the number of participants was small and the time available for the research limited, it would be rather difficult to prove differences in the effects of multimedia versus ordinary instruction based upon a “between-types” design. Therefore we employed a three-group system of analysis incorporating a “within-types design.”

1.5.2 The year 2002

We changed the original plan and used similar achievement tests as in the year 2001 to measure the retention of knowledge of the previous semester. The target lessons were again Communication, Science and Mathematics. But Science tests were not administered because of the burden for the students who were supposed to receive three tests in a day. Also we had to visit ten DJHSs in a week or so in order to obtain as much data as possible outside the testing. We visited one school in one day only instead of ten days for one school in the previous year. So we divided the team into two and each team assumed 4 to 5 DJHSs.

The design was also changed : the “within-type” was employed in ten DJHSs and newly “between-type” design was added to compare the model school with rural schools and other schools, such as in a mining town.

1.6. Hypotheses

1.6.1. The year 2001

The low scorers would benefit more from the multimedia lessons than would the high scorers.

1.6.2. The year 2002

The model school students would benefit more from the Internet and other multimedia lessons than other students in DJHSs.

The higher scorers in visual literacy tests would achieve better scores in subject-matter tests.

2. Design

2.1. The year 2001

- 1) A pre-test was given to check basic student knowledge regarding the content of the lesson. An interim test, used only for Mathematics, was used to measure student achievement just before the video lesson. This interim test was used to measure the effects of just the video materials upon student achievement for that particular lesson.
- 2) A post-test was given after the video lesson. This test measured the results of the multimedia lesson. In most studies of this type, the effect of a lesson can be measured by comparing the results of the post-test minus the results of the pre-test.

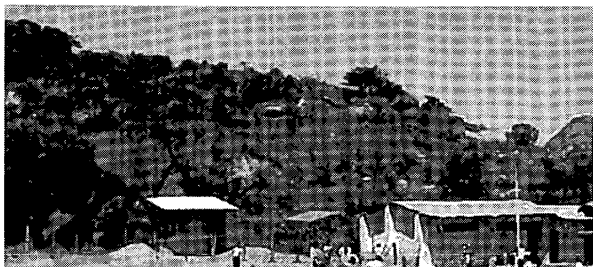


Photo 2 : The DJHS in Limon. From the left, there are an antenna, a house with decoders, a solar battery panel, and a classroom of the first year students. The students are playing soccer game .

- 3) A retention test was given to measure how many students had remembered the material administered after the lesson. This test was given 5 to 7 days after the other tests.

2.2 The year 2002

We compared the results of the achievement tests of the model school in Huacrapuquio with those of other DJHSs in 2002. By using cross tabulations, we compared the results of academic achievements and that of the visual literacy tests.

3. Procedure

3.1 The year 2001

1) Courses

Three typical academic subjects were selected: Communication, Science and Mathematics.

2) Subjects

Ten first - year DJHS students were selected in La Islia and 19 first-year students were selected in Limon. There were no significant gender differences in academic ability.

3) Equipment and Tests

The Peruvian Ministry of Education had already installed a TV set and a VCR, both powered by solar batteries in each DJHS. The test papers were prepared in Tokyo. Each test consisted of 5 to 10 multiple-choice questions. The same questions were used in the pre-test, interim test, post-test, and retention test. However, the order of the four choices for each question was randomized in

order to prevent participants being able to answer from memory.

4) Time Frame

The pre-test for the lesson in Communication was administered on Monday August 20, 2001. The post-test was given later the same day. The Science and Mathematics tests were given in a similar manner on August 21 and 22. The following Monday, the retention tests for all the three subjects were administered.

3.2. The year 2002

3.2.1. Courses

Three typical academic subjects were selected: Communication, Science and Mathematics.

3.2.2. Subjects

One hundred nine first-year DJHS students were tested in DJHSs, which were in Huacrapuquio, the model school, Huanchar, Casacancha, Canchapunco, Palta Rumi, Mantacra, Pucara, Corpacancha and Collpa. We disregarded the gender difference this year, as from previous year survey results.

3.2.3. Equipment and Tests

The test papers were prepared in Tokyo. Each test consisted of 20 multiple-choice questions. This time, the range of the test questions was selected from the previous semester's lessons for several weeks. Because of time constraints, 10 question items were actually used out of 20 prepared.

Since this year the research period was limited in a 10 days and visiting ten schools,

we could not use the "within design" using pretests and post-tests as we employed last year. Therefore, we used the results of the first semester as the standard (hereafter K-test) and the tests we prepared in Tokyo as the retention ones (hereafter A-Test). Unfortunately, there was a big change in the personnel of the Peruvian MOE in order to start the Huascarán Project., and those who knew the DJHS project and supported our research projects were changed. Though we sent all the test questions and sent a mission explaining the research design well in advance, the reactions from MOE were obtained after we arrived in Peru, and we had to start the survey after last minute alternations.

Yet, the Peruvian Ministry of Education recommended the Junin area, where each DJHS had already installed a TV set and a VCR, both powered by commercial electricity and relatively safe from anti-government guerilla movements.

3.2.4. Time Frame

Actual research was conducted on September 3rd to the 17th, 2002. This period is the first part of the second semester in the Peruvian high school system.

4. Results of the Achievement Tests in 2001

We used ANOVA (Analysis of Variance) to examine the results of the achievement tests. There were no significant differences between the two areas, coastal and mountainous in the test scores for all three subjects. Neither were there any significant gender

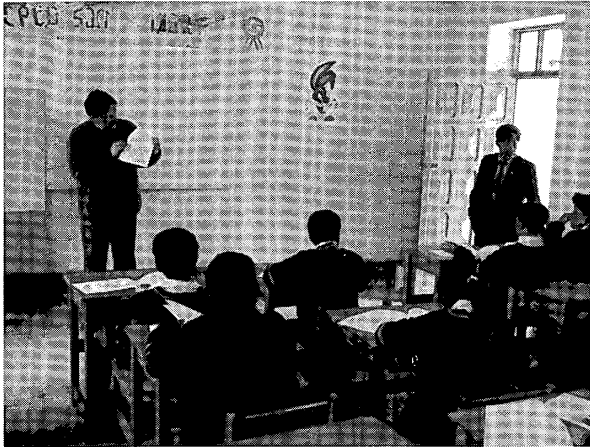


Photo 3 : Administering the achievement test to first year students at the Huacrapuquio DJHS. Dr. Paracious is explaining the multiple-choice system on the test paper.

differences between boys and girls. Because these area and gender differences were negligible, we divided all of the subjects into three groups based upon the pre-test results: higher, middle, and lower. The following examines the changes in these three groups after taking the multimedia lessons.

4.1. Communication Class Results

For all of the tables, T-1 is the pre-test, T-2 is the post-test and T-3 is the retention test. The maximum score for each test was ten. The Table 1 shows the average scores.

There was an interaction effect between the groups and the results of tests were at a 5% level. The results of the Analysis of Interaction were as follows :

- 1) For Test 1, there was a significant difference among the three groups at a 1% level.
- 2) For Tests 2 and 3, there were no significant differences among the three groups.
- 3) Multiple comparisons using the LSD (Least Significant Difference) method indicated the following:

- (1) The higher group showed no significant differences for Test 1, Test 2 or Test 3.
- (2) The middle group: There was a significant difference for the middle group at a 10% level. Test 2 was better than Test 1 at a 5% level. Test 2 and Test 3 were not significantly different from each other, as was the case between Test 1 and Test 3. The middle group learned a great deal right after the lesson, but from the results of the retention test, remembered less later on.
- (3) The lower group: As with the middle group, the results for the lower group for Test 2 were better than for Test 1. Test 2 and Test 3 were not significantly different but Test 3 was significantly better than Test 1 at a 5% level.

4.2. Science Class Results

Again, the maximum score of each test was ten. There was a significant interaction effect at a 1% level between the groups.

Table 1 Communication Class

(--) is Standard Deviation

Group	Number of students	T1	T2	T3
Higher	6 Persons	6.7(0.8)	7.7(1.0)	7.7(1.7)
Middle	9	5.0(0.0)	6.3(1.8)	6.2(2.2)
Lower	10	3.4(0.9)	6.2(1.7)	7.1(1.4)

Table 2 Science Class

(--) is Standard Deviation

Group	Number of students	T1	T2	T3
Higher	4 persons	8.0(0.0)	9.0(1.0)	7.5(2.2)
Middle	13	6.0(0.0)	8.2(1.8)	7.5(2.1)
Lower	10	2.8(1.6)	8.0(3.0)	7.2(2.7)

Table 3 Mathematics Class

(--) is Standard

Group	Number of Students	T-1	T-2	T-3	T-4
Higher	7 persons	6.3(0.7)	6.9(1.8)	8.0(1.5)	8.0(1.9)
Middle	11	4.0(0.0)	6.9(1.6)	6.2(2.0)	7.5(1.9)
Lower	9	2.0(0.0)	4.9(2.8)	5.6(3.4)	7.6(2.1)

4.2.1. Analysis of the Interaction Effect

The higher, middle and lower groups showed significant differences at a 1% level on Test 1. For Test 2 and for Test 3, however, there were no significant differences among the groups. The three groups reached almost the same levels of achievement after Tests 2 and 3. The middle group improved a bit, at a 10% level and the lower group made a remarkable improvement at a 1% significant level.

4.2.2. Analysis of the Three Groups

- 1) For the higher group there were no differences among Test 1, Test 2 and Test 3 scores. 10% level.
- 2) For the middle group, Test 2 was better than Test 1, but there was no significant difference between Test 2 and Test 3. Tests 1 and 3 also showed no significant difference
- 3) For the lower group, there was a significant difference among the three test scores at a 1% level. There was also a difference between Tests 1 and 3 at a 5% level. This

was very different compared with the middle group for which Tests 2 and 3 were not significantly different.

4.3. Mathematics Class Results

The Mathematics lesson was similar to the Communication lesson with the exception of giving an interim test (new Test 2) just before the video viewing. This made the post-test, Test 3, and the retention test, Test 4. Again, the maximum score of each test was ten.

For Test 1 there was a significant difference at a 1% level among the three groups.

- 1) For Tests 2 through 4 there were no differences among the three groups. However, the lower group did catch up with the higher and the middle groups after the multimedia lesson.
- 2) The higher group showed a small change, at a 10% level of significance. The middle group and the lower groups showed remarkable improvements at a 1% level of significance.

4.3.1. Multiple Comparisons Using LSD

- 1) For the higher group, there were no significant differences between Tests 1 and 2, Tests 2 and 3, or Tests 3 and 4. But there were significant differences at a 5% level between Tests 1 and 3 and between Tests 1 and 4.
- 2) The middle group, scored the lowest on Test 1. The results of Test 2 were not significantly different from either Test 3 or Test 4. Test 3 and Test 4 scores were not significantly different either.
- 3) For the lower group, Test 1 was the lowest among the tests. The score for Test 2 was the same as that for Test 3. Test 4 was significantly better than Test 2 or Test 3. The lower group's retention test scores showed the most significant improvement. The hypothesis was proven. The lower group improved and gained more on the tests than the other two groups. This is important for the Peruvian government as, for these under-achievers in rural areas, the need for such educational projects is more keenly felt than for the other groups.

5. Results of the Achievement Tests (A-test) in 2002

5.1. The Results of Communication Class :

Though Huacrapuquio was a model school, under the Huascarán Project, more than ten computers for student use were connected to the Internet, and while three tutors instead of usual two, the effects were not yet shown. From an additional survey on students by Mr. Tsunogae, the students' home labor had effects upon their achievements.

The lower scorers were generally used for labor at home for more than two hours every day. Boys were employed in farming and girls to help their mother taking care of babies.

There was difference among 10 DJHSs at a 1% level of significance (**Table 5**). After LSD analysis (**Table 6**), the sign > means that a DJHS indicated vertical listing was better than a left one listed horizontally. The notation "ns" means there was no significance. Among the top group were Canchapunco DJHS (A4) and Huaylawichan (A9) which were better than other schools at a 5% level

Table 4 Communication Classes (The maximum score is 10)

A	DJHSs	Number of Students	Mean	S. D.	Research Teams
1	Huacrapuquio	17	6.3	1.5	P & Q
2	Huancha	13	5.0	1.6	P team
3	Casacancha	11	5.0	1.3	
4	Canchapunco	10	7.4	1.9	
5	Paltarumi	18	4.7	1.9	
6	Mantacra	12	4.6	1.4	
7	Collpa	8	5.9	1.1	Q team
8	Corpacancha	4	6.3	1.8	
9	Huaylawichan	10	6.7	2.4	
10	Pucara	6	5.5	1.3	

Table 5 ANOVA Table in Communication

=Analysis of Variance=				
S. V.	SS	df	MS	F
A	91.7454	9	10.1939	3.34**
Sub	302.0711	99	3.0512	
Total	393.8165	108	+p<.10 *p<.05 **p<.01	

Table 6 The results of LSD Analysis (Analyzed by JavaScript-STAR)

	A2	A3	A4	A5	A6	A7	A8	A9	A10
A1 Hua	A1>A2	ns	ns	A1>A5	A1>A6	ns	ns	ns	ns
A2 Hc		ns	A2<A4	ns	ns	ns	ns	A2<A9	ns
A3 Ca			A3<A4	ns	ns	ns	ns	A3<A9	ns
A4 Cp				A4>A5	A4>A6	ns	ns	ns	A4>A10
A5 Pt					ns	ns	ns	A5<A9	ns
A6 Mt						ns	ns	A6<A9	ns
A7 Cl							ns	ns	ns
A8 Cr								ns	ns
A9 Hc									ns

Table 7 The Math Class (The maximum score is 10)

	DJHSs	N. of students	Mean	S. D.	Date of survey in 2002
A1	Huacrapuquio	13	6.3	1.4	Sept. 6-7
A2	Huancha	13	6.2	1.5	Sept. 9
A3	Casacancha	11	5.8	1.1	Sept. 10
A4	Canchapunco	10	5.1	1.6	Sept. 11
A5	Paltarumi	18	5.1	1.5	Sept. 12
A6	Mantacra	12	4.6	2.3	Sept. 13
A7	Collpa	8	7.3	0.7	Sept. 9
A8	Corpacancha	4	7.8	1.5	Sept. 10
A9	Huaylawichan	10	6.4	1.4	Sept. 11
A10	Pucara	6	6.7	1.9	Sept. 12
A11	Sanfe de Uno	?	—	—	Sept. 13 Interview only

of significance, Huacrapuquio (A1) is on the second position by exceeding other three DJHSs at a 5% level.

5.2. The Results of the Math Class

The Math class was surveyed by the same team on the days as indicated in **Table 7**. The

Q-team visited Sanfe de Uno but because of the field trip there were no students, only parents.

As in Communication, Math also showed a 1% of level of significance.

After the LSD analysis, we found that Huacrapuquio, the model school, was better

Table 8 ANOVA Table in Mathematics

= Analysis of Variance =				
S. V	SS	df	MS	F
A	77.2910	9	8.5879	3.33**
Sub	244.8423	95	2.5773	
Total	322.1333	104	+p<.10 *p<.05 **p<.01	

Table 9 The results of LSD Analysis (Analyzed by JavaScript-STAR)

	A2	A3	A4	A5	A6	A7	A8	A9	A10
A1 Hua	ns	ns	ns	>	>	ns	ns	ns	ns
A2 Hc		ns	ns	ns	>	ns	ns	ns	ns
A3 Ca			ns	ns	ns	ns	<	ns	ns
A4 Cp				ns	ns	<	<	ns	ns
A5 Pt					ns	<	<	<	<
A6 Mt						<	<	<	<
A7 Cl							ns	ns	ns
A8 Cr								ns	ns
A9 Hc									ns

than Paltarumi (A5) and Mantacra (A6). But Huacrapuquio (A1) was not significantly different compared to Huancha (A2) and other six DJHSs. Corpacancha (A8) was higher than four DJHSs and average score was the highest as in **Table 7**.

5.3. Conclusion for hypothesis 1 in 2002

In Corpacancha the number of students tested were only four, so no generalization could be made from this result. Though we could see that the model school had many computers and three tutors, we did not assume that the best scores in Communication and Math would be achieved. So our hypothesis was not proved.

Yet this survey is important because when the new-type schools with computers for students will show advantage, one can decide



Photo 4 : The area we surveyed ranged from 3,400 - 4,400 meters. Snow covered peak can be seen in the center.

the starting point. So far, we have been doing a great many of surveys in Japan and abroad, so we have statistics to show where the beginning is: a value which is zero. For instance, the number of TV receivers at home. Suddenly, some years there were hun-

dreds of houses have a TV receiver, but we don't know when the first one was installed. Because there is no research.

6. Comparison of K-test and A-test

6.1 The result of Cross Tabulation (A-tests minus K-tests)

The K-tests were a kind of achievement test officially administered by the MOE for the all DJHSs in Peru. The highest possible score was 20. However, the test results compiled by MOE were not available to us. Some test results were not available even some of the DJHSs that we surveyed.

Anyway, we obtained K-test results from the surveyed DJHSs. Since Communication and Math results showed a similar tendency,

we added the scores of the two subjects, and assumed it represents students' synthetic achievements. We doubled the score of the A-test, because its original full mark was 10, and used the results as retention tests' scores. We subtracted the results of the K-test score from the A-test score and divided the students into three groups: higher retainers, middle and lower retainers respectively.

Then we divided the students according to the location: the model school students, Group-P, in which students were mainly from rural areas, and Group Q in which students were from the mining towns and dairy (those that raise sheep and cattle) villages.

As may be seen in **Table 10**, in (a) the Group-P showed a greater number among

Table 10 The result of Cross Tabulation
(Each cell shows number of students)

Group	Total	A-K test results		
		Lower-rate Retention 32 Students	Middle-rate Retention 26 Students	Higher-rate Retention 20 Students
Model school	8	1	4	3
P-Group (Rural)	50	27(a)	14	9
Q-group (Mining, etc)	26	4	8	8(b)
Boys	32	18	15	11
Girls	42	14	11	9
TV set at home	54	23	18	13,
No TV at home	24	9	8	7
Heavy labor at home	14	4	6	4
Rather heavy labor	32	16(c)	11	5
Less heavy	20	8	5	7(d)
None	12	4	4	4
More than 2 hours	37	18(e)	11	8
Less than 2 hours	41	14	15	12(f)
Higher Visual Literacy	26	6	12(g)	8
Middle V. L.	26	12	9	5
Lower V. L.	26	14(h)	5	7

the lower group. Among 32 students in the lower group, Group-P students were 84.4 per cent of the 32 students. (of course, the number of each cell was small but we hope to indicate that if this research is done on a larger scale, the results will be just as valid. It is hoped that this will be a goal of a larger research study in the future.)

Thus (b) out of 20 higher-rated retainers, 8 students were from Group-Q, which achieved better scores than the model school. The also remarkable cells are from (g) to (h). We will explain.

6.2 Conclusion :

We found that the higher visual literacy scorers were also higher in retention test results. Since the students had little chance to watch commercial TV, the effect of attaining higher visual skills could be attributed to the multimedia lessons at DJHSs. The more the students attain higher visual skills, the higher their academic achievement; and the reverse is true in regard to both factors. We could not conclude anything definite at this stage, but there was some relationship between the two.

“Visual Literacy” in the year 2002 has been explained above. We conducted the same survey we conducted in Piura in 2001. The results were not better than in Piura, except in some schools.

Again the model school was no better than other DJHSs. But we should wait one or two more years so that these students have a chance to get acquainted with visual instruc-

tional materials, and then examine their achievement levels.

The year 2002 result shows that the model school students were equal to students in other schools and, so to speak, they provide a good example for researchers because one can compare them with other students easily since they began from the same starting point as students in other locations. If the model school students had been too high in academic achievement and the visual literacy tests, the comparison study would have been rather difficult, if not impossible to make sense of it.

III. LEARNING MOTIVATION SURVEY

1. Procedure

We conducted a motivation-learning survey in Limon and La Islia parallel with the above achievement tests. Right after the students watched one of the videotapes, they were given questionnaires composed of eight pairs of Osgood-type Attitude Yardstick Measures. We used an ANOVA to analyze the students' motivation and applied three categories : district, subject matter, and the questionnaire items.

2. ANOVA Results

1) On the whole, there were no differences between districts. Furthermore, there were no differences among the three subjects. No interaction effect was observed, but there was a significant difference between Questions 1 through 8 at a 1% level.

2) A first group was formed from Q1 (Interesting), Q3 (Concentration) and Q6 (Usefulness). There were no differences among these three and they were rated higher than the others were. Furthermore, these were very favorable evaluations from a production staff's point of view. A second group was formed from Q2 (Understandable), and Q4 (I want to watch more video). The third group was Q5 (Learning is easy) and Q7 (Tired). Q8 (Time passed quickly), by itself, formed the fourth group.

3) There was a significant difference between the first and second groups at a 5% level but there were no differences between the second and the third groups. And while there was a significant difference between the second and the fourth groups at a 5% level, again there were none between the third and the fourth groups.

IV. VISUAL LITERACY RESULTS

1. Purpose

The purpose of this part of the study was to measure student perception and understanding of videocassette learning materials. The subjects for this study were from two specific groups. One group was from a city where the students had prior experience with TV. The second group lived in a rural area where, except when they were in school, opportunities to view TV were rare. The city group consisted of 46 first-year junior high school students and the rural group area had 38 first-year and second-year DJHS students.

2. Schools

The rural school was the Limon DJHS in Frias and the city school was the La Alborado Junior High School with regular facilities and curriculum in Piura.

3. Method

Students in both groups watched a video and were then asked to fill out a questionnaire.

4. The Video

The theme of the video was communicating with others and was based on Peru's multicultural and multilingual society. There are many different ethnic Indian groups in Peru and the video showed variations in languages and customs.

5. Questionnaire Format

There were ten questions in the questionnaire. Some of the questions were:

Question 2 : The boy from the jungle area likes music and dance. Who do you think taught him this? (The aim of this question was to measure visual recall.)

Question 5 : What does this picture mean? (The picture showed Francesco Pizarro, a conquistador. The aim of this question was to test recognition.)

Question 9 : In the beginning of this video you saw four scenes from the seashore, the city, the jungle and a lake. What do these scenes mean to you? (The aim of this question was to measure the students' understanding of the theme of the video.)

6. Hypothesis

The visual skills of students in rural areas are weaker than are those of students in urban areas.

7. Administration

The video was shown and the questionnaire administered on August 25, 2001.

8. Results

The maximum score for each test was 10. The results for each question are shown in Table 4 and those for each group in Table 5. From the LSD analysis, we obtained the following :

- 1) There were no significant differences between the first-year city students and the second-year rural students.
- 2) In the rural school, the second-year students had better scores than did the first-year students, significant at a 5% level.
- 3) The city first-year students had better scores than did the rural first-year students, again at a 5% level of significance.

These results only partially proved our hypothesis because there were no differences in ability between the first-year students in the city and the second-year students in the rural area.

9. Analysis

Student understanding of the main theme of the video was tested in Questions 8 and Question 10. For Question 10, which was designed to elicit free responses, (which were then quantified by 3 members of the research team), the second-year students in the rural school scored 8 out of a possible 10. The first-year rural students scored 7.1 out of 10 and the first-year city students scored the lowest 6.7 out of 10. One reason for this may be that the rural students watched TV more carefully and did not view it as entertainment. Therefore, they paid greater attention to the TV while the city students, who had seen more TV were less intent in the way they viewed the program.

Table 4 Visual Literacy Survey Results

Question School	Year	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Average
La Alborado	1	9.2	9.6	10.0	8.0	7.8	5.8	3.9	7.6	5.9	6.7	7.5
Limon	2	3.7	7.9	8.9	8.9	6.8	4.8	6.8	8.9	6.6	8.0	7.2
Limon	1	3.2	8.4	6.8	3.7	6.3	3.3	4.2	5.8	5.4	7.1	5.4

Table 5 Correct Answers by Category.

School	Year	Relationships	Recall	Cognition	Reasoning	Judgment	Theme
La Alborado	1	7.5	9.2	7.8	3.9	7.6	7.2
Limon	2	4.3	8.6	6.8	6.8	8.9	8.5
Limon	1	3.3	6.3	6.3	4.2	5.8	6.5

- 1) Questions 3, 4 and 5 measured recall. All three classes answered most of them correctly, but the first-year rural students scored lowest. The reason for this may be that they have had less experiences watching TV than had the other classes. They had been in school for only four months at the time of the survey.
- 2) Visual relationships and recall were measured in Questions 1 and 6. The students were shown three sets of pictures and asked to connect them with lines. The pictures showed speakers and festivals as well as different parts of the country. The first-year rural students exhibited the lowest level of ability.
- 3) In Question 7, which asked students to relate language with another form of communication, we found the average score of the first-year city students was the lowest, while the first-year and the second-year rural students scored better than city students did. We feel that once the rural first-year students have a chance to spend more time viewing TV, by the time they are promoted to the second year they will catch up with the other groups.

10. Conclusion from the Visual Literacy Study

It was natural for students from the rural school to have a lower visual ability than that of the city students. However, from our research we found that by watching TV in school every day, visual comprehension skills and an ability to understand visual informa-

tion as well as to understand the main theme of a video, participants developed and increased their visual literacy.

V. IN CLOSING

In closing, in this report, based upon the above conclusions we would like to make the following recommendations:

- 1) Gender differences should be a part of any future study. We did not include an analysis of gender differences in this study, but we feel that this should be a topic for future research.
- 2) We came to the conclusion that student contact with TV and visual input at school is essential in developing an ability to learn from visual materials. Visual skills are an important part of modern life and even in areas where there is no electricity it is possible through the use of alternative forms of power, such as solar panels, to allow students to develop these skills. We hope that in our forthcoming research, we will be able to better clarify these issues. For now, however, we feel that this pilot study was a step in the right direction towards understanding the use of visual learning materials in distance education.

Submitted Aug. 14th 2003, by Shozo USAMI imasu77@tbd.t-com.ne.jp
--

2002年度ペルー調査備忘録

9月3日（火曜日）

成田空港に調査チーム集合、15時成田発：現地時間で18時に中継地点の北米グラス発、真夜中、ペルー・リマ着、先発のパラショウスさんが出迎えてくださる。

4日（水曜日）

午前1時ホテル着。日系人のゲンマさんが来訪、リマやワンカイヨの話しを聞く。午後、ペルー教育省へゆき、打ち合わせ。教育省に人事異動があり、マルガリータさんが調査地域へ同行決定。レオさんから調査地域近況を聞く。夜、ホテルで、今野ビクトル・：日系人副会長に会う。

5日（木曜日）

朝6時起き、7時リマ発、高速バスでワンカイヨに向かう。途中アンデス山脈の険しい禿山で海拔4800メートルを越える。雪山あり（写真4）。途中ポトシを偲ばせる銀鉱山、精錬所あり。ホテル到着後（海拔3490m）、通訳やパラショウスさんの従兄弟の中央大学学長（武装ガードマン付き）と夕食。私は高山病で頭痛に悩む。

6日（金曜日）

午前7時。ワンカイヨ省教育事務所にゆく。所長代理、小学科指導主事、地域担当チューターと18キロ離れた Huacrapuquio の教育実験校へ。ここが今年度の第1調査校である。付近は広々とした荒地で畑もある。作物は年に3ヶ月しか育たない。その真ん中の学校で周囲は禿山が東側にも西側にも続く。学校は昨年訪問したフレヤス山地の遠隔中学校より規模が大きい。中学校は3教室、2年生用教室を間仕切りして2・3年生が使い、最後の部屋がパソコン教室

である。

この教室を詳述すると、東側出入口のある長辺10メートルの壁面（高さ3メートル）にACER（台湾製）パソコンが4台ある。1番2番はマウス付、3番はマウス+ステレオスピーカ付、4番は唯一マウス+スピーカー+プリンター付である。北側の短辺8メートルの壁面はプロジェクター用スクリーンとステレオラジカセがあり、テレビ受像機が箱に収められている。VCRはない。この箱の上にカラオケ付カセットがある。西側長辺には6台のACERがマウス付である。教室中央部には教師用のACER（ヘッドセット付）があり、プロジェクターに繋がっている。11台は室内LANと衛星アンテナに連絡し、生徒は好みのサイトのアクセスしたり、互いに連絡しあえる。南側の短辺には韓国（SUNMUNG）のデスクトップ型パソコン（キーボードのみ）が5台併設されていたが電源につながっていなかった。ここでは太陽電池は使っていない。

空地に米国製の直径3メートルはあるKTIとかいた衛星テレビ放送受信用パラボラアンテナがある。そばの機器を納めた小屋の屋上に直径1メートルのパラボラアンテナがインターネットの送受信用である。また紅白に塗り分けられた30メートル以上の通信アンテナが直立し、地域の一般家庭用テレビの再送信設備である。

中学校1年生20人【欠席3人】は個人用机が19本、テーブルが一本。2年生18人は個人用12本、3年生21人は9本+ベッドとテレビ+VCRである。生徒は計59人である。

チューターは男性2人と女性1人。1年担当の若い男性チューター、ファンさんと打合せ、彼はかなり緊張した面持ちである。この調査について充分知らされていなかったのか、中央教

育省の役人（マルガリータさん）や地域の教育指導者が、4人も来たためである。

結局、理科を除く国語、数学の20問中10問と「生徒調査」、「ビジュアル・リテラシー・テスト」を実施することで了承してもらう。久保田さんは保護者の聴き取り調査をする。その他は短時間だが生徒と遊び、写真を撮り、とうもろこしを食べて、自然な関係を作り上げる。

7日（土曜日）7時、朝食、私の頭痛はかなくなったが、角替氏が高山病と風邪で、大事を取って休養してもらう。専門官と通訳、移動チューターが相次いでホテルに到着し、昨日の Huacrapuquio 校へ20分のドライブ。2日目で、若いチューター、ファンさんも親しみを増し、数学テスト終了。この間、久保田氏は3人のチューターの面接を終える。パソコン授業のデモあり。インターネットでメキシコやスペインのサイトを生徒は思い思いに、眺めている。しかし、何か課題を与えられて、共同で解決するというのではなさそうだ（写真5）。

村長が来訪、彼にも拳銃武装のボーディガードがつきそう。生徒に折紙細工を教え、大人も生徒も打ち解けて、よい雰囲気になった。

お別れになると、生徒たちが手に手にアイスクリームの心棒で苦心して作った筆立てなど、彼らの作品をくれて別れを惜しんでくれる。車の後を追ってくる子もいる。

15時パラショウスさんと久保田さんと小生の3人で今後の調査地点への目印になる寺院を見に行く。ここへ道路の舗装は良い。水量の豊富な川があり、これを利用して広大な鱒養魚場がある。このあたりは緑が多く、一概に乾燥地帯とはいえないことがわかる。

今度は久保田氏が高山病にかかる。運転手がユーカリの枝を折り取ってくれ、寝室に置くと

気分が良くなるという。私も一枝貰って休養。ホテルのテレビは「NHK ちびっ子のど自慢」を受信していた。

8日（日曜日）

午前8時、5人でホテル付属食堂で5人でチーズバーガーで朝食。昨夜半整理した Huacrapuquio のデータをもとに今後の調査方法の検討会をする。下町で朝市を見る。パラショウスさんの親類一同と立派なクラブハウスで昼食会。

16時、久保田、角替、マルガリータ、通訳 Perez 氏の Q 班が次の高地調査へ出発。電話は無い地域、持参した無線機でも連絡ができない遠距離なので、しばしの別れである。私はようやく調子を取り戻す。

9日（月曜日）

午前7時15分、女性チューター、Lucida Trigos さんが来訪。市内に住んでいる。普段はバスで学校に通うという。コンセプション町教育事務所へ。女性所長との打ちあわせが長く感じたが、結局、公用車を使わせてくださる。男性専門官 Alabardo Chavaz Abenio Carratera) の同乗で、林に囲まれたワンチャ遠隔中学校（2校目）へ向かう。

もとクラブハウスだそうで、建物はしっかりしている。アンテナは衛星テレビ用の大型と高い塔に八木アンテナがついている。再送信用だ。幼稚園と併設。直ちに生徒調査+数学、教師調査に入る。

休憩時間に父親代表と対談：せっかく良いと思ひ、娘の友達もさそってニューメディアのある遠隔中学校に娘を上げたが2年生の後半から教材がこない。政府の朝令暮改的教育成策のせいだ。机や黒板は自分たちが寄付したのに、行き先不安である。しかしすべり出しは素晴らし

かった。普通中学から転校した生徒もいたくらいで、成績でも負けなかった。村は2地域に区分され、下のほうは川辺で年中作物が収穫できる。この辺は雨季だけ、現金収入を目指した換金作物の栽培をするが、市場価格に左右される。豊かとはいえない。1戸建1家族で子供は5人ぐらい、若い世代の両親には教育によって子供に将来の機会を増やそうという傾向がある。

2年生には、折り紙教室を開く。

ホテルに戻り、回答のチェック整理。日系人のゲンマさんがパートナーの建築家 Julian Contreras とワンカイヨに出張してきて、われわれと同じホテルに泊まる。われわれへの心遣いもあるのだろう。Julian は母親（英語教師）が彼に BBC を聞かせ育てたので、綺麗な英国英語を話す。

10日（火曜日）

午前7時、女性所長のお迎え。昨日のアラバルド専門官が同行する。運転手はベテランの昨日の人。3校目の調査は山の中のカサカンチャ遠隔中学校 (Casacancha) である。高地で小雨のため寒い。

日曜日に見た修道院や鱒の養殖場を通して、舗装の無い急坂の山道に入る。リモンよりも道幅が遙かに狭く、右は絶壁で深い谷間に落ち込んでいる。やがて道は消え、草原を低速で戦車のようにでこぼこを超えつつ進む。遙かに岡の上に城砦のように校舎が見える。放牧の牛馬、ロバ、羊がいて迂回しつつ学校へ接近する。

駐車地点から崖の小道をなんとか攀じ登って校門につく。高い土塀に囲まれた要塞のような校地でLの字型に校舎がある。東に土壁の建物廃墟が2棟あり、北側で民族衣装のお母さん8人が炊事をしている。【のちにこのお母さんたちが我々の為に昼食を用意してくださっていると判る】

生徒全員が整列して、級長が3人きちんと歓迎の挨拶を述べてくれる。9:00調査開始。1年生はLの字型校舎の短辺にあり、女性6人男性4人：昨日の中学校専門官が、生徒がお互いに答を見ないようにさっさと座席机を離して座らせる。座席は椅子と机が一体型である（これは、やや珍しい）。教室は北側が6メートル、東が入り口を含め10メートルある。テレビは北東隅に設置されていた。

中学2年生は正方形に近い個人机が9本。東側にホワイトボード。テレビ付きVCRが南西隅にある。2年生に隣接して教員オフィスがあり、受信設備やパソコンがある。ここは南北にやや狭く、ダンボールの物置でもある。東側最後の3年生は（2年生と合同授業中）で四角い個人机を対面式に7本つつ置いている。

各教室前に、これまでの学校と同じく、わずかに花が咲く花壇がある。アンテナは校門の外にあり、高い再送信用の紅白の鉄塔とパラボラ。ただし衛星受信装置は故障のまま修理されない。トイレはなく、急な崖道を下って乾燥した川端へ下りてゆく。樹木が多く人目を避けられるが、女性は難儀なことだろう。水道は水が出ない。それでも民家には八木アンテナが林立し、全家庭に電力とテレビが普及している。ただし、テレビ電波は満足に来ていない。

調査終了後、ビデオで東京学芸大学世田谷中学校の授業風景を見せる。今後、単に観光でない旅では、こうした日本紹介のビデオを持参することも大切だ。

休み時間に手品や折り紙をする。母親の心づくしの民族料理が出る。豚皮とジャガイモとキャベツを煮たもので、ジャガイモは大きくてうまいが量が非常に多い。他の人も残していた。香辛料が強い。デザートは芋科植物の砂糖煮で、

少したべたが後がどうにも食べられない。せっかく作ってくださったのに気の毒である。

帰ってデータ整理。パラショウスさんは学校に寄付する文房具の見積もりや連絡、明日の打ち合わせ。昨日貰い損なった資料の受け取りに奔走する。

11日（水曜日）

ワンチャの女性チューターが連絡に来る。スマートな青年夫婦の運転する自家用車でハウファ町の事務所へ行く。日本から送った昨年の調査結果はこの地域まで降りてこないらしい。中央の教育省内でもなかなか、依頼した関係先に廻らないようであると実態を説明。（久保田さんはインターネットのサイトに日英スペイン語で公開している）年配男性の遠隔教育担当者と川を越え、山道を行く。地球の肋骨のようなアンデス山脈を見る。山頂から麓まで深い谷状の崖崩れが等間隔で連続して発生している。道の左右の斜面は落石と露出した岩の風化で西瓜畑のように石ころだらけ。石垣で平面を作って石を食い止めているが、その石垣も山なす石塊で崩れかけている。

4校目の Canchapunco 遠隔中学校は村の中の広場を四角に建物で囲った西側の一辺にある。平家の落人村といった感じだ。東は古典的な住宅で、北が今のぼって来た低地に向かい、かなたにアンデス山脈、南に教会と公共建築がある。

校舎は珍しく2階建てで下が小学校、上が遠隔中学校だ。1年生の教室は天井が低い。ボール紙のようなボードで仮天井を作っている。中学2年3年は合同教室である。ひざ掛け毛布を我々に配られる。それほど高地は肌寒い。標本室は地元の植物、動物、土壌見本がある。この標本室だけ天井が無く、萱葺き屋根の裏側がじかに見える。女性チューターの1人、ナンシー先生が英語を話す。私の生徒へのお話は終戦後、

物資不足の日本での「ある先生と白墨」の思い出である。学生時代、子ども会をした経験が生きた。

調査は理科まで3教科ができる。村の長老をはじめ、大人が集まってきて、この村の由来。神父を殺した人の隠れ里だったという。食事はモルモットのような鼠「クイ」の焼肉で結構おいしい。米はインディカ米でソースと混ぜて食べる。ジャガイモも本場なのでおいしい。村長の挨拶あり。「始めて村を訪問した異国人」ということでサイン帖に感想を書かされる。

12日（木曜日）

午前2時からデータ作成作業をして朝となる。6時パラショウスさんから電話で「移動チューターのカルロスさんが、今日の学校は遠い所なので、すぐ出発するように助言している」という。がたがたのタクシーで、市内の遠距離タクシーの車庫へ行き、より状態のよい車を交渉して出してもらう。移動チューターのカルロスさん、パラショウスさん、私で出発する。

天候は小雨。アンデス山脈は1万メートル彼方に連峰がつらなり、中間は深い谷にまた幾重にも山脈がある。見上げる峰はぎざぎざの岩山がち並び、すぎまじい景色だ。太平洋の大波を山のようなと形容するが、アンデスは荒海のような山なみといたい。日本から持参の乾パンの缶詰を空けて分ける。積乱雲が風に吹き付けられ山肌に沿って絶ち上がり、垂直面のほうが平らになっている。巨人の手のひらを立てたようだ。

2時間後ようやくパンパスに到着。立派な町である。Juaja 教育省で中等教育専門家とディレクターにあう。2人とも好紳士なり。とても普通の自動車では無理らしく、4輪駆動のピックアップを手配してくれる。茶色の良いジャンパーを着た年配のドライバーがピックアップで

パルタルミ遠隔隔中学校（5校目）へ。ここもなるほど、ぼこん、ぼこん、ひどい山道である。

廃墟の教会の後方に校舎がある。やや凄惨な印象。男先生、女先生がいる。

よくぞ、いらっしやいましたとパンやチーズで接待される。1年生は個人机を4つ合わせてグループを作っている。校舎は北向き。床がぎしぎし音を立てる。天井は床から2メートルで、はねて歩くと頭部がぶつかりそうである。2・3年生合同クラスで「ドイツ少年の形見のペン」の物語をする。外へ出て、生徒と銭かくしや空き缶おとしをして親睦を深める。教室では手品や折紙、ゲームをする。年配の専門官が快く「よいドン」の係りを引きうけてくれた。

女性チューターが、喧騒を避けて我々の自動車内に座ってアンケートに記入する。前学期の成績一覧表はコピー機が無いので、ビデオカメラで撮影する。ビデオはすぐ、写り具合を確認できるので、フィルムの写真機のように現像してみたら、ピンボケや露出不足で困ることがない。チューターの口頭説明も一緒に記録できて便利だ。

帰り始めると生徒たちがめいめい胸の記章を外して記念に呉れる。車が動き出せば、走ってついて来ていつまでも手を振る。

パンパスの町に帰り着き、教育事務所長らと郊外の鱒のレストランへ行くが閉鎖中。近くの丘でゲリラ活動があったという。教育事務所前のレストランで16時の遅い昼食。目玉焼きがうまい。

移動チューターのカルロスさんは明日の実験校の打ち合わせで忙しい。

この町で教師たちの運動会があり、明日の学校のチューターも偶然来ていたのだ。運動会の結果判定に不満があると負けたチームの教師たちが所長に早口に訴えている。暗くなってワンカイヨに帰着。移動チューターのカルロスさ

んとパラショウスさんは、学校へお礼に持参する文房具を調べに店を回る。マーケット街は多くの店が閉鎖して、治安が悪いとのことで、私はホテルで待機する。テストのデータは理科以外、記入を完成。

13日（金曜日）

朝、ホテル付属食堂で、サンドイッチとコーヒー、同じホテルにカルロス、運転手も宿泊して、すぐに出発。今朝は温かい地域である。アンデスの山道は相変わらず、すれ違いが怖い。対向車の巻き上げるもうもうたる砂煙のなかですれ違う。もし続けて2台目の対向車がくれば砂埃の煙幕のなかで正面衝突だ。山道で屈曲が多いから、はるか彼方から対向車が走ってくるのが見えるので大丈夫だが、警音器や速度計はおおかた壊れている。

昨年のリモンで乗った車は、時にフロントガラスが蜘蛛の巣のように罅割れし穴だらけだったが、この車は幸いフロントガラス健全で、銃痕もない。リモンを思わせる街道の両側の村、人口は百人、山手をいれて3百人という。1軒の雑貨屋がインカコーラからショールまですべて売っている。バスやトラックが着くと、旅人や貨物を雑貨屋に運びこむ。放し飼いの犬、牛馬、鶏が多い。マンタクラ遠隔中学校（Mantacra：6校目）はここから50メートル上の山の中とあり、つづら折りの道を登る。青年村長が同情して私の荷物を持ってくれる。サボテン類が多い。「サボテンには見えなくても棘があるからご用心」と村長が注意してくれる。学校は見晴らしがいい。すぐ回りまで急斜面の畑である。ここでも昨日同様、衛星テレビ受信装置が故障したまま9ヶ月ほど放置されている。

今日は、休校日だが、カルロスさんが、チューターに依頼して、家が近い生徒を集めておいてくれた。みなさんがとても協力的で助かる。

カルロスさんが昨日で慣れて1年生のテスト監督をやってくれるので、パラショウスさんと私は2・3年生相手に日本講座、生徒の寸劇やゲームに興ずる風景をビデオに撮って、学校のVHSカセットにコピーして置いて来る。なにか、先方の喜ぶことをしてあげると、調査がうまく行く。チューター調査も終わる。

女性チューターが赤ちゃんを抱いて途中まで便乗、移動チューターのカルロスさんを車中取材する。彼は教師経験がそれほどないが研修を受けた。1か月に3〜4校を巡回訪問する。1回の学校訪問で4〜5日は現場にいる。ホテルのない村では、学校に宿泊する。駐在チューターの話の聞いたり、教材や評価のデータを届けたり、産休や研修で先生不在の学校では、カルロスが授業を代行する。給料や交通費などは不十分だが、やりがいはあるという。

夕方、ワンカイヨに帰着。ラ・オロヤ方面などを巡回調査していた久保田、角替班も無事に帰還して、ほっとする。学校まで片道5時間という日もあったそうだ。4千メートル地域で宿替えもあり、最初は私たちが行く予定を、久保田さんたちが自発的に交代してくれたのだ。

ロビーでパラショウス大学学長やチューターのナンシーさん、ファンさんがお別れの挨拶に来る。久保田さんたちは文房具店へ、中学生への贈り物を買に行く。夕食はマルガリーター教育省担当官、通訳のペレッツさん、ナンシー、ファンさんも参加して久しぶりに大人数でレストランへ。ペルーの皆さんは女性も良く食べる。23時、バスターミナルから遠距離バスでリマ市に向う。リクライニング・シートを倒して思いきり眠る。

14日（土曜日）

6時、うすぐらいリマ市に到着。雨が降っている。馴染みの運転手はパラショウス家に少年

時代からかわいがられていた。先日、タクシー強盗にあって、営業車を強奪されたという。今は他人から車を借りている。早朝ホテル着。部屋に入れたので9時まで寝る。昼食はパラショウス家に御招待される。午後は荷物、データの整理。

15日（日曜日）

11時、ゲンマさん、ジュリアンさんが来る。彼らの案内で翻訳者への謝物を買に出かける。ミラーフローレスの住宅街や太平洋を望むショッピング、レストラン街をみる。初めて都会らしい景色にふれる。ゲンマさんたちは建築デザイン事務所を経営している。とてもセンスが良く、感じがいい。

21時ホテルを出発してリマ空港へ。きびしい荷物検査があり。私は無事通過。

16日（月曜日）

午前1時リマ発、グラス午前8時着。11時（日本時間17日午前3時）同空港発、成田へ17日の日本時間15時到着、空港での待ちをいければ空の旅は26時間以上になった。

（おわり）



Photo 5：教室でパソコンを操作する中学1年生。