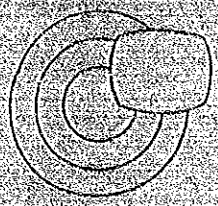

Project: CONTINUING EDUCATION FOR PRIMARY HEALTH CARE

REPORT

ON THE WORK OF THE EDUCATIONAL AND VIDEO GROUP

(April 1988 - June 1989)

Zagreb, July 1989

PROJECT: CONTINUING EDUCATION FOR PRIMARY HEALTH CARE

REPORT ON THE WORK OF THE EDUCATIONAL AND VIDEO GROUP

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The main task of the Educational group work is to develop educational process in the system of continuing education, following the targets of the Project as a whole, as contained in the "Master Plan" and "Plan of Implementation". This educational process is based on the identification of needs, determination of objectives, contents and priorities, selection of forms, modes and methodologies as well as on evaluation of implementation and effects of continuing education in primary health care using video and computerized technologies.

This Report includes activities in the period from April 1988 to June 1989, as follows:

1. Group studies of written and other materials in the field of innovation in medical continuing education - regular weekly meetings (heterogenous group-members)

2. Stimulation and motivation of authors - coordination between collaborators (experts from Medical School, policy makers, practicioners from the field, etc.)

3. Identification of needs, requests and demands - using formal and informal talks and written materials (see Table 1)

4. Regular production of video educational materials (programmes):
   Video Monthlies 3-4/88, 5-6/88, 7-8/88 and 1-2/89 - see Annex: Production of EMC and list of video issues produced in EMC

5. Coordination and support of the system in the field
   see Annex: Part of written feed-back material)

   5.1. Regular meetings with coordinators (every five months)

   5.2. Regular evaluation of organizational, professional and technical aspects in written and oral form

6. Other activities

TABLE 1

IMPORTANCE OF NEEDS AND CONTENTS IN CONTINUING EDUCATION FOR PRIMARY HEALTH CARE ACCORDING TO COORDINATORS' OPINION

Contents \ Scale		0	10	20	30	40	50	60	70	80	90	100
Assessment of working capacity (N=203)	N	-	2	5	8	13	14	18	24	31	38	50
	%	-	1.0	2.5	4.0	6.4	6.9	8.9	12.0	15.3	18.7	25.0
Relation physician-patient N= 210)	N	-	-	2	2	5	15	13	16	24	51	82
	%			0.95	0.95	2.4	7.1	6.2	7.6	11.4	24.3	39.1
Enforcement of legal acts (N=200)	N	-	4	15	13	17	35	25	14	34	20	23
	%		2.0	7.5	6.5	8.5	17.5	12.5	7.0	17.0	10.0	11.5
Organ transplantation (N=185)	N	12	32	30	28	15	16	19	9	11	5	8
	%	6.5	17.3	16.2	15.1	8.1	8.7	10.3	4.9	6.0	2.7	4.3
Team work (N=211)	N	-	-	1	2	5	17	10	20	36	50	70
	%			0.5	1.0	2.4	8.1	4.8	9.6	17.0	24.0	33.2
Chronic diseases (N=203)	N	-	-	-	4	2	10	15	30	30	64	48
	%				2.0	1.0	5.0	7.4	15.0	15.0	31.5	24.0
ECG interpretation (N=200)	N	5	2	10	13	12	21	24	17	38	28	30
	%	2,5	1.0	5.0	6.5	6.0	10.5	12.0	8.5	19.0	14.0	15.0
Show others one's own work (N=201)	N	1	4	11	9	7	40	29	19	26	27	28
	%	0.5	2.0	5.5	4.5	3.5	20.0	14.4	9.5	13.0	13.4	14.0
Standard health care measures (N=201)	N	1	-	2	5	9	25	31	30	37	37	24
	%	0.5		1.0	2.5	4.5	12.5	15.4	15.0	18.5	18.5	12.0
Relation towards specialists (N=202)	N	1	10	11	4	18	33	19	27	31	27	21
	%	0.5	5.0	5.5	2.0	9.0	16.3	9.4	13.4	15.4	13.4	10.4

ANNEX

LIST OF VIDEO ISSUES PRODUCED IN EMC

1.	Topographic anatomy: The Head	13 min.
2.	60th Anniversary of A. Štampar School of Public Health	20 min.
3.	Institute of Diabetes "Vuk Vrhovec" 60 year of existence	30 min.
4.	Bleeding and first aid	15 min.
5.	What is insulin? (Health educational material about treatment with insulin)	10 min.
6.	Insulin - instruction for diabetic patients	20 min.

LIST OF VIDEO ISSUES IN THE COURSE OF PRODUCTION

A. Impuls 3-4/89

Forum - Doctor as a drug (zour answers and comments)

Topical issues - Computer in active units: How to use them?

Experience from practice - PHC and diabetic patients

Problem - Consultation of diabetic patients on diet

B. 1. Healthy teeth (health educational material for children)

2. Personal hygiene (health educational material for children)

3. Reanimation: Defibrilation

4. Fundus examination

5. Experience from work of self-help group - club laryngectomies

Part of written feed-back material

Table 1:

NUMBER OF HEALTH WORKERS IN PRIMARY HEALTH CARE WHO HAVE SEEN REPOTOR THE VIDEO-MONTHLY ISSUES

AREA	1 9 8 7			1 9 8 8		
	1-2/87	3-4/87	5-6/87	1-2/88	3-4/88	5-6/88
Zagreb and surroundings	514	697	316	237	166	-
Rijeka-Istra region	495	687	344	372	322	173
Slavonian region	251	622	546	465	129	100
Middle Croatia	485	531	335	331	209	212
Dalmatian region	565	289	101	105	63	79
TOTAL	2 310	2 816	1 642	1 510	889	564

Table 2:

ESTIMATION OF NEW EDUCATIONAL SYSTEM
IN ACCORDANCE WITH SIZE OF WORK ORGANIZATION
(BY OPINION OF COORDINATORS)

AREA	Size of work organization (No of health workers)	The system succeeded			TOTAL
		YES	PARTLY	NO	
Zagreb and surroundings	to 100	7	2	6	15
	100-500	8	4	3	13
	500 and more	-	-	-	-
	TOTAL	15	6	9	30
Rijeka-Istra region	to 100	11	2	4	17
	100-500	4	3	-	7
	500 and more	2	-	-	2
	TOTAL	17	5	4	26
Middle Croatia	to 100	7	3	2	12
	100-500	8	2	2	12
	500 and more	5	1	-	6
	TOTAL	20	6	4	30
Dalmatian region	to 100	6	1	10	17
	100-500	4	1	1	6
	500 and more	-	2	2	4
	TOTAL	10	4	13	27
Slavonian region	to 100	7	-	-	7
	100-500	6	3	-	9
	500 and more	3	-	-	3
	TOTAL	16	3	-	19
	to 100	38	8	22	68
	100-500	30	13	6	49
	500 and more	10	3	2	15
	TOTAL	78	24	30	132

(Table 2 - continued)

AREA	The system succeeded PARTLY		The system did NOT succeed	
	Number of reproductive units		Number of reproductive units	
	With equipment	Without equipment	With equipment	Without equipment
Zagreb and surroundings	2	4	1	8
Rijeka-Istra region	2	3	-	4
Middle Croatia	3	3	1	3
Dalmatia	3	1	3	10
Slavonia	2	1	-	-
T O T A L	12	12	5	25

*Total number of reproductive units with equipment in the Project = 49

Partly = 12

No = 5

Zagreb	= 12
Rijeka	= 10
Middle Croatia	= 11
Dalmatia	= 9
Slavonia	= 7
	49

Total number of reproductive units without equipment = 83

Partly = 5

No = 25

Zagreb	= 18
Rijeka	= 16
Middle Croatia	= 19
Dalmatia	= 18
Slavonia	= 12
	83

* Not included ACTIVE units by contents of work

TABLE 3

EVALUATION OF ALL VIDEO MONTHLIES (scale 1-5)

No of video monthlies	3-4/87			5-6/87			1-2/88			3-4/88			5-6/88			TOTAL		
Profile of health workers	N	平均 $\bar{X}$	標準適差 SD	N	平均 $\bar{X}$	標準適差 SD	N	平均 $\bar{X}$	標準適差 SD	N	平均 $\bar{X}$	標準適差 SD	N	平均 $\bar{X}$	標準適差 SD	N	平均 $\bar{X}$	標準適差 SD
Physicians Contents	644	4.1	0.79	463	4.2	0.72	256	4.1	0.79	13	3.8	0.93	422	4.1	0.80	1 798	4.1	0.78
Physicians AV	637	4.1	0.79	456	4.1	0.84	254	4.0	0.83	13	3.1	0.80	414	3.9	0.87	1 774	4.0	0.83
Nurses Contents	928	4.3	0.76	390	4.3	0.69	262	4.2	0.81	39	4.1	0.82	342	4.2	0.82	1 961	4.3	0.77
Nurses AV	909	4.3	0.77	379	4.2	0.76	258	4.1	0.85	38	3.7	0.99	334	4.0	0.88	1 918	4.2	0.81
Dentists Contents	109	4.3	0.75	22	4.4	0.66	34	4.1	0.82	3	3.7	1.52	18	4.2	0.73	186	4.3	0.76
Dentists AV	105	4.3	0.83	20	4.0	0.94	35	4.2	0.71	3	2.0	1.00	18	3.8	0.88	181	4.1	0.88
Others Contents	19	4.1	0.83	26	4.5	0.63	5	4.0	0.71	4	3.5	1.73	78	4.5	0.68	132	4.3	0.67
Others AV	19	4.0	0.86	26	4.1	0.70	5	4.0	0.00	4	2.8	0.50	77	4.4	0.80	131	4.3	0.71
Total Contents	1 700	4.2	0.78	901	4.4	0.68	557	4.1	0.78	59	3.8	1.25	860	4.3	0.76	4 077	4.2	0.77
Total AV	1 670	4.2	0.81	881	4.1	0.81	552	4.1	0.80	58	2.9	0.82	843	4.0	0.86	4 004	4.1	0.83

TABLE 4

EVALUATION OF THE SECTION: TOPICAL ISSUES (scale 1-5)

	3-4/87			5-6/87			1-2/88			3-4/88			5-6/88					
Contents / Profile of health workers in PHC	Vaccination (epidemiology)			Polypragmation in drug prescription			The health services in restriction (health policy)			Black widow (epidemiology)			The work of A.Štampar (health policy)			TOTAL		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Physicians Contents	651	3.9	0.96	467	4.1	0.80	251	4.0	0.93	15	4.1	0.70	449	4.2	0.89	1833	4.0	0.91
Physicians AV qual.	640	4.0	0.89	455	4.0	0.89	248	3.9	0.93	15	3.5	0.83	441	3.9	0.90	1799	3.9	0.90
Nurses Contents	927	4.1	0.85	380	4.2	0.78	253	4.1	0.96	36	4.0	0.88	367	4.3	0.81	1963	4.2	0.85
Nurses AV qual.	912	4.1	0.85	375	4.1	0.81	247	4.0	0.98	36	3.7	0.83	361	3.9	0.95	1931	4.1	0.88
Dentists Contents	107	4.2	0.87	22	4.1	0.92	34	4.0	1.03	3	4.0	1.73	22	4.4	0.58	188	4.2	0.89
Dentists AV qual.	103	4.3	0.83	20	3.9	1.02	34	4.1	0.94	3	2.0	1.00	22	3.9	0.75	182	4.1	0.92
Others Contents	19	4.1	0.63	26	4.4	0.64	4	3.8	0.50	4	3.8	0.50	73	4.5	0.60	126	4.3	0.72
Others AV qual.	19	3.8	0.78	26	4.1	0.71	4	3.9	0.80	4	3.0	0.82	71	4.0	0.79	124	4.0	0.73
Total Contents	1704	4.1	0.83	895	4.2	0.79	542	4.0	0.86	58	3.9	1.26	911	4.4	0.72	4110	4.2	
Total AV qual.	1674	4.1	0.84	876	4.0	0.86	533	4.0	0.91	58	3.1	0.87	895	3.0	0.85	4036	4.0	

Table 5:

EVALUATION OF THE SECTION: EXPERIENCES FROM PRACTICE (scale 1-5)

Profile of health worker	Contents	3-4/87 Work of nurses with obese girls (ZAGREB)			5-6/87 Overall programme of colorectal carcinoma control (OSIJEK)			1-2/88 Workers' health care: Alcoholism (SPLIT)			3-4/88 Catateriśation in patient's home (ISTRA)			5-6/88 Role of PHC in the education of medical students (ZAGREB)			TOTAL		
		N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
PHYSICIANS	Contents	648	4.0	0.93	468	4.3	0.75	260	3.9	1.00	17	4.3	0.85	431	4.1	0.83	1 824	4.1	0.88
	AV quality	635	4.0	0.86	455	4.1	0.86	256	3.6	1.11	17	3.7	0.77	423	4.0	0.89	1 786	4.0	0.92
NURSES	Contents	918	4.3	0.81	383	4.3	0.76	268	3.5	1.31	38	4.5	0.76	324	4.2	0.88	1 931	4.2	0,94
	AV quality	896	4.2	0.82	371	4.2	0.81	262	3.4	1.32	39	3.9	0.85	318	4.0	0.85	1 886	4.1	0.95
DENTISTS	Contents	101	4.3	0.79	21	4.0	0.80	35	4.2	0.89	3	4.0	1.73	19	3.9	0.71	179	4.2	0.82
	AV quality	94	4.3	0.76	20	3.9	0.88	35	4.2	0.77	3	2.0	1.00	19	3.9	0.66	171	4.1	0.83
OTHERS	Contents	29	4.2	0.65	25	4.6	0.64	5	4.2	0.84	4	4.3	0.50	65	4.2	0.78	128	4.4	0.64
	AV quality	19	4.2	0.64	25	4.2	0.79	4	4.0	0.00	4	4.0	0.82	62	4.1	0.81	114	4.3	0.65
TOTAL	Contents	1 696	4.2	0.80	897	4.3	0.74	568	4.0	1.01	62	4.3	0.96	839	4.1	0.80	4 062	4.3	0.84
	AV quality	1 644	4.2	0.77	871	4.1	0.84	557	3.8	0.80	63	3.4	0.86	822	4.0	0.80	3 957	4.1	0.81

TABLE 6

EVALUATION OF THE SECTION: PROBLEM/STANDARD PROCEDURES (scale 1-5)

Contents / Profile of health workers in PHC	3-4/87			5-6/87			1-2/88			3-4/88			5-6/88			TOTAL		
	Standard procedure: Emergency intervention			Problem: Painful lumbal syndrome			Standard procedure: Assessment of working			Problem: Physician as a medication			Standard procedure: Emergency intervention					
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Physicians Contents	660	4,3	0.82	462	4.3	0.77	268	4.4	0.81	15	3.9	0.92	425	4.1	0.86	1830	4.3	0.82
Physicians AV	648	4.2	0.80	456	4.1	0.87	264	4.3	0.82	15	3.5	0.73	416	3.9	0.98	1799	4.1	0.88
Nureses Contents	920	4.4	0.77	403	4.3	0.75	284	4.4	0.84	38	4.2	0.75	350	4.1	0.83	1955	4.3	0.79
Nureses AV	901	4.4	0.78	391	4.2	0.84	280	4.3	0.90	39	3.8	0.99	346	4.0	0.89	1957	4.3	0.85
Dentists Contents	105	4.4	0.73	21	4.4	0.74	36	4.2	0.81	3	3.7	1.53	23	4.2	0.67	188	4.3	0.76
Dentists AV	103	4.3	0.86	19	4.0	0.82	37	4.0	0.81	3	3.0	1.00	23	3.8	0.80	185	4.2	0.87
Others Contents	19	4.3	0.66	26	4.5	0.62	6	4.5	0.55	4	3.8	1.50	72	4.4	0.76	127	4.5	0.64
Others AV	19	4.1	0.64	26	4.1	0.60	6	4.2	0.75	4	3.0	0.82	70	4.2	0.82	125	4.3	0.67
Total Contents	1704	4.4	0.75	912	4.4	0.72	594	4.4	0.75	60	3.9	1.18	870	4.2	0.78	4140	4.3	0.80
Total AV	1671	4.3	0.77	892	4.1	0.78	587	4.2	0.82	61	3.3	0.89	855	4.0	0.87	4066	4.2	0.86

TABLE 7

EVALUATION OF THE EMC VIDEO MONTHLY BY
NUMBERS OF PRIMARY HEALTH WORKERS

(scale 1-5)

Video monthly / No. primary h. workers	3 - 4/87			5 - 6/87			1 - 2/87			3 - 4/88			5 - 6/88			TOTAL		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
< 100	290	4.4	0.67	235	4.3	0.69	64	4.3	0.59	47	3.9	0.99	149	4.5	0.63	785	4.4	0.70
100 -500	740	4.2	0.73	426	4.1	0.67	288	4.2	0.66	12	4.2	0.71	338	4.1	0.74	1804	4.2	0.70
500 +	670	3.5	0.62	240	4.2	0.70	205	4.2	0.89	-	-	-	373	4.1	0.83	1488	4.0	0.78

TABLE 8

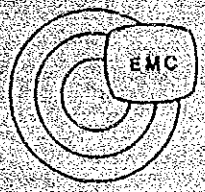
EVALUATION OF THE EMC VIDEO - MONTHLY (scale 1-5)

Video-monthly contents / Age	3 - 4/87			5 - 6/87			1 - 2/87			3 - 4/88			5 - 6/88			TOTAL		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
20 - 29	420	4.3	0.78	286	4.3	0.68	144	4.1	0.79	15	4.1	0.96	270	4.2	0.75	1135	4.2	0.75
30 - 39	661	4.2	0.75	344	4.2	0.71	224	4.2	0.75	24	4.1	0.68	328	4.2	0.79	1581	4.2	0.74
40 - 49	467	4.2	0.84	193	4.3	0.70	135	4.1	0.94	17	3.9	1.11	192	4.1	0.91	1004	4.2	0.84
50 - 59	130	4.2	0.82	60	4.3	0.73	49	4.1	0.67	3	3.0	1.73	64	4.3	0.70	306	4.2	0.77
60 +	22	3.9	0.53	18	4.1	0.96	5	4.0	0.75	-	-	-	6	4.3	0.82	51	4.0	0.75

TABLE 9

EVALUATION OF THE EMC VIDEO MONTHLY BY HEALTH WORKERS IN THE FIELD (scale 1-5)

Regions / Video monthly	3-4/87			5-6/87			1-2/88			3-4/88			5-6/88			TOTAL		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
Middle Croatia — Contents	366	4.2	0.80	200	4.3	0.70	100	4.4	0.67	12	4.2	0.72	248	4.2	0.76	926	4.3	0.75
Middle Croatia — AV quality	366	4.3	0.78	193	4.2	0.74	100	4.3	0.82	11	4.2	0.75	241	4.0	0.85	911	4.2	0.80
Zagreb and its surroundings — Contents	394	4.2	0.81	114	4.0	0.76	28	4.5	0.84	-	-	-	52	4.2	0.80	588	4.2	0.80
Zagreb and its surroundings — AV quality	379	4.2	0.85	113	3.7	0.98	27	4.0	0.94	-	-	-	52	3.6	0.91	571	4.0	0.91
Dalmatian region — Contents	82	4.5	0.67	94	4.3	0.69	58	4.1	0.74	29	3.8	1.08	85	4.4	0.72	348	4.3	0.76
Dalmatian region — AV quality	80	4.4	0.79	91	4.2	0.74	56	4.1	0.59	29	3.6	0.68	84	4.5	0.70	340	4.3	0.75
Region of Rijeka & Istra — Contents	454	4.2	0.79	212	4.2	0.72	161	4.3	0.74	18	4.2	0.86	249	4.2	0.85	1094	4.2	0.78
Region of Rijeka & Istra — AV quality	447	4.2	0.80	207	4.1	0.82	162	4.1	0.75	18	2.7	1.14	241	4.0	0.89	1075	4.1	0.85
Slavonian region — Contents	404	4.2	0.72	281	4.3	0.67	210	3.9	0.86	-	-	-	226	4.1	0.80	1121	4.2	0.76
Slavonian region — AV quality	398	4.2	0.73	277	4.3	0.74	207	3.8	0.88	-	-	-	225	3.9	0.87	1107	4.1	0.81



Project: "CONTINUING EDUCATION FOR PRIMARY HEALTH CARE"

Educational Multimedial Centre (EMC)

REPORT

ON THE WORK OF THE COMPUTER GROUP
(April 1988 - November 1989)

Zagreb, November 1989

Project: CONTINUOUS EDUCATION FOR PRIMARY HEALTH CARE

REPORT OF THE COMPUTER GROUP FOR THE PERIOD APRIL'88 - NOVEMBER'89

The work has been performed according to the program of a three years work (for the years 1986/87, 1987/88 and 1988/89 adopted in May 1987 and reconfirmed in April 1988.

The program for 1988/89 enclosed following activities:

1) Development of CAI courseware development systems

2) Preparation of CAI courseware

3) Implementation of developed software and courseware in project's active units

4) Development of Information Management System for the Project

The program has been accomplished in collaboration of experts from Japan (Prof. T. Akatsuka, Prof. M. Hori, Prof. T. Kubo, Dr. T. Murai, Dr. S. Shigemitsu) and Yugoslavia (J. Božikov, M.Sc., Prof. Gj. Deželić, Dr. N. Henigsberg, J. Kern, M.Sc., Dr. F. Šantek). In April 1988 Prof. Akatsuka and Dr. Shigemitsu arrived to Zagreb. Prof. Akatsuka took part in the discussions on the project activities and in planning their continuation. Dr. Shigemitsu spent a month in Zagreb working on parts 1) and 2) of the program and visited the active units in Rijeka and Split. Mr. Kern spent five weeks in Japan (from end of October to beginning of December 1988). Dr. Murai was in Zagreb for one month in January and February 1989.

The work on the CAI courseware development systems has been accomplished by developing three products:

- Program AUTHOR-1, developed by J. Božikov in IBM BASIC language;

- Program AUTHOR-2, developed by F. Šantek in QuickBASIC language;

- Authoring System, developed by Software House in Japan, implemented in Zagreb by S. Shigemitsu.

The main features of these authoring systems are to enable authors, medical doctors and other health professionals without and special computer knowledge and skill to implement CAI courseware by themselves in an easy way, to enable execution of such materials by a unique executing module, and to support monitoring of CAI courseware use. So far the program AUTHOR-1 has been distributed to active units to be used by authors in the network for courseware development. The program AUTHOR-2 is under revision. In order to make it more applicable it is to be recoded into dBASE III+ language.

Several CAI courseware products have been prepared and distributed to active units for use in the network. The following products have been distributed to the network:

1) Acute abdominal pain (S. Fukao, T. Akatsuka, T. Kubo, M. Hori, S. Shigemitsu)

2) Contraception for adolescents (M. Džepina, A. Beluhan, D. Štampar, J. Božikov)

3) Lumbago in a 21-year old man (I. Jajić, F. Šantek)

4) Recognition of AIDS in dentistry (M. Valentić, A. Cekić-Arambašin, J. Božikov)

5) Cardiac tamponade (H. Maeta, T. Murai, O. Matsumoto, S. Shigemitsu)

6) Diagnostic of lumbago in PHC (M. Vujičić, N. Henigsberg)

Several new courseware products are under development now. The courseware "Treatment of Acute Poisoning of Children by Organophosphoric Insecticides" (B. Ficnar

and N. Henigsberg) is in its final phase of development. Some of courseware products are planning to use the new computer graphic hardware and software acquired during the summer months. Work started on a courseware development proposed by Prof. M. Valentić-Peruzović (in collaboration with N. Henigsberg) under the title " The Role of anatomic, biological and topographic factors in planning and producing partial dental protheses".

The implementation of all these products has been made in all active units. The total number of these units is now 9, some of the units started to attract authors to develop CAI courseware and all of them organized sessions for using courseware by PHC practitioners.

An epidemiological simulation program has been developed for use with microcomputers (J. Božikov, Gj Deželić). This has been done by using the Lotus 1-2-3 Spreadsheet System, and now in testing for use in the project.

A database has been developed for the purposes of information management on project's activity. The software has been written by F. Šantek in dBASE III+ language. This database is capable to track the video and computer production in the project, and supports as well their use and evaluation. The system also submits information on project coordinators and their activity.

Some of the planned activities could not be fulfilled because of the lack of resources and had to be postponed for future work. This concerns the work on CAI by using data analysis (statistical) software packages and the introduction of laser video disk technology. The data analysis work has been planned to be accomplished by using the GENSTAT package which has not been received yet. The video disk technology could not be acquired so far due to the problems to find appropriate equipment suited to be used with PAL video. These two activities had to be postponed to the future.

Several papers have been written on CAI development and presented at medical informatics symposia:

1) F. Šantek, J. Božikov, J. Kern and Gj. Deželić: Use of a Personal Computer in Continuing Education of Health Professionals (original in Croatian), Zdravstvo 30:282-286, 1988.

2) F. Šantek, J. Božikov, J. Kern and Gj. Deželić: (original in Croatian, Lij. vjesnik (in press).

3) Gj. Deželić, T. Akatsuka, J. Božikov, M. Hori, J. Kern, T. Kubo and F. Šantek: Computer Assisted Instruction in Continuing Education for Primary Health Care: Project Concepts and Development (accepted for presentation and publication at the MEDINFO'89 Congress in Beijin 1989).

4) J. Božikov, F. Šantek, T. Akatsuka, Gj. Deželić, J. Kern T. Kubo: Authoring System for Easy Design and Implementation of Microcomputer-Based Patient Simulations (accepted for presentation and publication at the MEDINFO'89 Congress in Beijin 1989).

Project Continuing Education for Primary Health Care

E D U C A T I O N A L S T R A T E G Y

(Theses for further discussions)

Ž. Jakšić, February 1986

1. The basic function of the system of continuing education, a Project that should be developed, is not a distribution of information from one center, but communication among health units. The system is not consequently following the traditional "school" model, but is based on collecting, summarizing and spreading of experiences from real life.

   It is not possible to apply this sort of orientation successfully at once. The new way should primarily find its way in the practice and thus present its advantages. Time will be needed (at least during the Project) to consolidate the new system and to have it accepted in practice. During that period, the educational strategy will comprize both approaches, but with a clear orientation towards the new way.

   So far it has become obvious, that it is very easy to "slip" away from the basic postulate of the Project into the traditional pattern. This is true out of the following reasons :

   - the primary health care practitioners themselves seem to consider receiving ready-made recipies the most useful aspect of the whole thing (being the system recipients). For example, in opinion polls they point that out.
   - the professionals and teachers who are to be included (or already have been included) into the system, mainly think in the traditional manner.
   - very often, people tend not to rely upon their own experience (this is a well known phenomenon in psychology), whereas standard rules and opinion of authorities offer a feeling of being secure.
   - the new approach insists upon GREATER efforts, both when analysing and creativity are concerned ; this also refers to various actions, like the ones connected with field-work, organization of recor-

dings, repetitions, operational evaluation, etc.

Although the new system of continuing education as the basic strategy has been generally accepted within the Project, there are many concrete decitions which reveal a common approach and to some extent even hesitation to rely upon the possibilities offered by the new approach.

2. The experiences in preparing educational materials gathered so far, show four different types of teaching units. Each one has its characteristic features. They are :

a. "PROBLEMS" (ITEMS). This is potentially the most successful, but also the most difficult, the most original and therefore not well known form of education. It is appropriate for video and computer technology. Four elements seem to be essential for it to be successful :

- the problem should be picked up from practical experience - this would make sure that it is true, real and relevant according to the criteria of those who are supposed to solve it ;
- the possibility of the viewer's identification with the presented item ; the problem should be seen "by his eyes" in conditions that remind of practice ;
- the problem should be adequately limited - the questions ought to be clear and the number of elements which could direct attention to less important matters should be reduced.

In order to achieve this, the author should have enough freedom and a lot of courage to make the concept of the problem. The material should be prepred in such a way, that real life can be felt through it. For example, during video recordings, the scenes which were half-way between natural and acted, achieved astoundingly good effects. The role of creative editing will potentially be very important as soon as video and computer technical prerequisites allow it.

Further investigations are required, since there is a number of unanswered questions : how to limit the problem, so that it at the same time remains "true"?
how to make sure that you get feed-back?
how do various groups of recipients react?

is it possible to present one and the same problem at different levels (for example, for various primary health care professionals)?

Some more "PROBLEM" projects should start relatively soon, because the number of authors will be small. The authors would perhaps feel more secure, if there were more of them. The greatest difficulty in creating is artificial and false presentation of one`s own experience. This is true both of the video and computer technology.

b. "EXAMPLES". These are presentations from the practice, suitable almost only for video technology. Potentially, this is also a specific, important and successful video educational approach. Our experience reveals the following elements as important :

- conciseness
- directness
-"imperfectness"

In order to achieve that, creative improvization is needed. Experience shows that too extensive work out and technical perfection sometimes negatively influence the final effect. The effect of incompleteness and the feeling "that something is missing", especially if it is possible to create the atmosphere of spontaneity, seem to be better. In order to achieve that, one should maybe try recording without the previous notice, with smaller team. "Perfect" examples should by all means be avoided. Difficulties, motives and human, not organizational aspect of activities should be insisted upon. Incompleteness and imperfectness are important for accepting other people`s examples. Finding out the disadvantages of the particular example should be made possible, because this initiates discussion and acceptance. This is however related to the ethical problems. A larger number of examples should diminish the sensitivity of those showed in them. Besides, the examples that refer to a smaller part of the entire work tend to be accepted, remembered and compared more easily. Examples of some better organizations can be fractioned in series. The span of institutions presented should be large. Several questions have remained unsolved, like the following :

how to emphasize the main message?
how to present negative experience and behaviour?
how to make sure that we get discussion and feed-back?
how to solve legal aspects (who is the author and what is his relation to those he presents?)
is it possible (and to which extent) that some groups record presentations of themselves?

True work should be presented as much as possible; manifestations and celebrations should by all means be avoided. It should be aimed at viewing the institution with the eyes of those for whom the presentation is intended. People from the practice and recipients (students, etc.) could formally serve as interviewers and reporters.

c. "PRESENTATIONS" (DEMONSTRATIONS). These are materials which present procedures and relations (useful models for the practice) by means of video technology. In computer technology, relatively simple decisions and analyses of schematic situations should be exercised. Emergency states, relationship between the physician and the patient, physical therapy, diagnostic procedures which can be seen, etc. are very suitable for video materials, whereas emergencies, diagnostic procedures, drug choice etc, are suitable for computer technology. Although we have no experience, we suppose that no greater problems should occur, if the preparations (script), recording and elaboration are done well enough and in a professional manner. Script writing (professional and pedagogic work out) require here full attention.

d. "LESSONS" (INSTRUCTIONS) are materials with the similar task as the previously mentioned ones, although the possibilities of direct illustration are not simple. It is mostly a transfer of knowledge and information, according to the system of programmed education. Video materials will mostly depend on the recorded spoken message. Authorities and practitioners should here deal with the same topics. Repetitions and illustrations by means of pictures, schemes and animation are supposed to go along with the presentations. Being clear is very important. Accompanying texts with the tape are also important. Computer materials are of the CAI type.

The team has practically no experiences with the last two types of work. Although no greater difficulties are expected, small projects should serve for gaining experience. There is a considerable number of practical problems :

- length of a unit,
- dividing from the rest within the monthly (how do people react to "STOP" during one disc?)
- how much is enough during one application (differences between individual and group application) ;
- combination of speech and written text on video screen, i.e. of written texts and schemes in computer technique ;
- the use of jokes and similar forms of expression, etc.

A lot could be learned from the already existing commercial tapes and discs within educational TV programmes. Linking of the computer and video technology is a real challenge.

3. The experiences gathered so far, which can be considered rules already, are the following :

3.1. The amount of material within one teachnig unit is very limited. Therefore, one should : proceed directly towards the target, avoid too much playing with details and side-effects.

3.2. The level of presentation should be high, regarding the contents (as high as possible). The authors should feel free, but also responsible. They should be the top-people in their branches. Facts which have not been proved and repetition of generally known phrases and stereotypes can by no means be allowed.

3.3. The described types of teaching units (problems, examples, presentations and lessons) can be mixed, but only if necessary. There is a great danger in wishing to say everything (problem, presentation, example and lesson), because the result is often - nothing.

3.4. Active participants are the most valuable people for the Project. Video and computer possibilities should be provided for the interested professionals and potential authors to gather. Collecting of opinions expressed by passive participants by means of opinion polls is of limited validity, although it is necessary in the process of elaboration of the materials.

3.5. Scientific approach, as described in the Project materials, is an integral part of the procedure,not something special. That is why every member of the team must be well acquainted with all of the Project targets (and they are indeed ambitious). The following hypotheses are now important :

- possibilities of group continuing education "on distance" ;
- on the theories of specific contents of work in primary health care ;
- on the characteristics of video medium in education
- on expert system, "jewel digging" methods in the experience of experts ;
- on the methods of evaluation.

In this regard, the teams cannot be divided into the ones who think and the ones who operate. The theoretical background must be mutual for all the participants in the project, for all the experts.

3.6. In the beginning of the Project, the "exit towards the outside world" is very important; regarding the field work, gathering of experts, communication with the widest spans of public, etc. It should be well coordinated. To the greatest possible extent one should take into consideration the Project as a whole and its prestige.