

Chapter III

Study of the Physical and Human Environment

3.1 ANISA Theory of Environment

Learning competence has been defined by Jordan (1973) as the conscious control over those processes which translate potentiality into actuality. The actualization of human psychological potential is achieved ultimately through the process curriculum, which must be informed by the content curriculum. It is in the content curriculum that a comprehensive, yet specific, definition of environment is indigenous to the ANISA model for learning.

The learner's interaction with the universe of content is not random, but rather it is structured or categorized into three specific domains. First the physical environment. This includes the classic categories of mineral, vegetable and animal, in other words, the totality of the material universe, except for humanity. Second the human environment, which includes all human beings with whom one comes into contact. Third the unknown environment, that is, all those mysteries of the universe for which a causality cannot be defined, but the existence of which the consciousness of man admits. A fourth environment called the Self is not awarded a specific category since it is subsumed under the three primary environments. Because man is a physical entity, of human dimensions, with unknown and unknowable potentialities, the unity of the three primary environments finds its totality particularized in the Self.

It is not enough, however, to define categorically the environmental dimension. The learner must negotiate an interaction with these

environments in a manner such that the content of each is assimilated, and potentialities are translated into human powers, i.e., psychomotor, affective, cognitive, volitional and perceptual powers. Mastery over each environment demands appropriate symbol systems which facilitate the learner's interaction. For the physical environment, the symbol system is mathematics; for the human environment, language; for the unknown environment, art. Again, actualization of the Self is mediated through all three primary symbol systems.

ANISA organization of the content curriculum through the primary environments and symbol systems is not unlike the classical arrangement of curriculum. Mathematics, the natural and physical sciences and more recently, technology, have traditionally been placed in similar categories. Likewise, language arts, communications, media, the social and behavioral sciences form a cohesive unit. While aesthetics, fine arts, philosophy and theology form still a third grouping. However, what distinguishes the ANISA model from traditional models is the multidimensional integration of all three categories. In addition to a vertical integration, as for example, mathematics and science, the ANISA model provides for a horizontal integration across divergent disciplines, for example, physical science and fine arts. This is achieved primarily through the emphasis on process. Once the learner assimilates content from one environment and masters the process for doing this he has, at the same time, mastered that process as it applies to other areas of the content curriculum. Thus, there is a genuine transfer of knowledge across disciplines.

Once the learner assimilates content through interaction with the environments, he begins to form value judgments about those environments and particularly about the relationship of Self with the total environment. The fusion of human potentiality with information about each of the primary environments results in the formation of a value system relative to each, with concomitant attitudes, opinions, interests, etc. Therefore, technological competence is learning competence based on the actualization of human potentiality as the learner interacts with his physical environment. Interaction with the human environment precipitates the formation of a social value system, encouraging the learner to moral competency. Interaction with the unknown environment forms the basis of the learner's religious values and spiritual competence. Finally, as the learner reflects on the relationship of Self to the total environment, and integrates the totality of his values and attitudes, the unifying results is Self-actualization and personal identity.

3.2 Extent of Implementation

Necessarily, the implementation of such a complex integration of the human dynamics of learning must occur gradually and systematically. One consideration must be the implementation of the macro-environment, that is the predetermined global aspects of all three environments within which the arrangement of micro-environments, for specific purposes, takes place. One initial focus of this implementation was on the overall design of the physical environment, particularly the learning space itself.

The introductory staff orientation sessions conducted during the Summer of '73 considered the following aspects: The architectural arrangement of the learning space, type and intensity of lighting, storage and display of materials used in the learning process, the elimination of both visual and audio distractors, the introduction of novelty into the environment, and the optimum visual angle for the display of materials for 3-6 year-olds.

In terms of the human environment, the initial focus was basically oriented towards the "ground rules" operational in the learning space, and aimed at achieving moral competence. The staff orientation sessions explored the higher-order specification termed "cooperation" a value which, when developed would lead to a high degree of self-discipline in the classroom. This specification is multifaceted and pervasive. For example, no student should violate the learning time of another student by distracting him from his work. Or, since it is often necessary to share materials, students are encouraged to cooperate in the re-cycling process by always returning materials to their proper storage place when finished with them. Likewise, if he breaks something accidentally, he should report this so the next student to use the materials will not find them in disrepair.

3.3 Evaluation - Year I

Commensurate with the year-one-implementation, the year-one evaluation of environment was viewed as initial and tentative. The purpose of a three-year evaluation of the macro-environment, as is planned, is to expose aspects of the model that are not properly implemented and

perhaps identify some weaknesses of the model itself, so that the results of such an on-going evaluation may be used as a basis for further research and development of the model. Our work was not intended to provide a definitive affirmation or negation of ANISA as a pedagogically-sound learning theory.

With this firmly in mind then, we felt that Year One should be spent gathering and analyzing data from a variety of pertinent sources in order to derive a global measure of the reality under consideration. Therefore, we proposed a three-dimensional approach to the evaluation of environment.

1) Independent-Knowledge Observer Rating.

This consisted of an observation schedule, The Learning Environment Observer Rating Schedule (LEORS), dealing with the physical and human environments operational at the sites. The rating schedule was completed by judges not directly involved in the implementation process, but knowledgeable of the ANISA model, its goals, processes, pedagogy, etc.

2) Staff Perceptions.

Basically this was a questionnaire, The Learning Environment Staff Perception Index (LESPI), designed to tap staff perceptions of these environments and their degree of implementation at the sites. It was administered to as many staff members directly involved in the project as possible.

3) Learner's Perceptions.

Utilizing a structured interview technique, The Learner Perception Interview Schedule (LPIS), we attempted to have the children

involved in the project articulate their perceptions of the environment. Because of the inordinate amount of time required to interview every child in the project, appropriate means were devised to select a representative random sampling.

3.4 Instrumentation

The Learning Environment Observer Rating Schedule (LEORS) consisted of 31 items dealing with aspects of the physical environment reflected in the ANISA model. Observers not directly involved with ANISA implementation during Year I were instructed to respond to each item on a 4-point scale ranging from NO EVIDENCE of a particular behavior or dimension, to STRONG, FREQUENT EVIDENCE of a certain behavior or dimension. These same 31 items also formed the basis of the Learning Environment Staff Perception Index (LESPI). Staff members and administrators at each site were requested to respond to LESPI in terms of a description of what actually happened in their school situation during the current academic year. A similar 4-point scale was used. Copies of both instruments are presented in Appendix A.

The utilization of identical items on both the LEORS and the LESPI was viewed as advantageous for making cross-comparisons between an "outsider's" perception of the environment and the perception of those within the school milieu. It is not uncommon for those who operate within the context of the school environment day after day to develop a myopic eye, thus vitiating any degree of objectivity that might have been present.

In generating items for the LEORS and the LESPI consideration of the human, unknown and self-environments was omitted. The rationale for the

exclusion of these domains was linked to the fact that, during the Year I implementation of the ANISA model, exclusive emphasis was placed on the physical domain, and therefore, rightfully formed the framework for the evaluation of the environment. The following outline serves to highlight the structure of both instruments.

I. The Arrangement of the Physical Environment

A. As it related to classroom management

1. Through control of distractions (1-8)*
2. Through materials accessibility (9)
3. Through provisioning for basic psychological needs (10-12)
4. Through control of mess (13-17)

B. As it relates to individualizing the instruction (18-23)

C. As it relates to the efficient use of space (24-26)

II. "Ground Rules" of the Physical Environment

A. As they relate to classroom management

1. Through control of distraction (27-29)
2. Through control of mess (30)

B. As they relate to individualizing the instruction (31)

The third instrument used, the Learner Perception Interview Schedule (LPIS), attempted to measure the students perceptions of the learning environment. Sixteen items relating to the school environment were formulated into a structured interview. This approach was preferred over a paper-and-pencil method because of the ages of the children (4-6), and over a projective technique because of the complexity of interpreting projective scores. The items in the LPIS were of a general nature dealing with the arrangement

*Refers to item numbers in LEORS and LESPI

of the physical environment, "ground rules" aspects of the human environment, and a few of a pedagogical nature relative to individualizing the instruction. A copy of the instrument is presented in Appendix A.

3.5 Results

A comparison of the ANISA and CONTROL group data on the LESPI reported in Tables 3.5.1 and 3.5.2 shows no substantial differences. Items 4 and 29 are the exception. The former deals with carpeting in the quiet work areas of the learning space. It is interesting to note that the only rooms of the CONTROL school, where there was no carpeting, were the Kindergarten and First Grade rooms. The latter item deals with the sound level of the learning space. Both items are somewhat related insofar as carpeting does help to improve the quality of the sound level in the classroom. As would be expected, the ANISA environment was perceived more positively on both items.

A comparative view of the LESPI and LEORS data of the ANISA site reflects a high degree of congruence. Items 7, 16, 18, 23, and 31 are the exceptions. However, since only one observer supplied LEORS data, it would be unwarranted to draw any strong inferences from these differences.

In itself, the LESPI data displays a large amount of agreement among the respondents. Items 16, 17, 28, and 31 do reflect a slight polarity. However, at least for the first two items any difference probably stems from the respondents' varying definitions of what constitutes "mess" rather than any inherent failure to implement the ANISA model.

The LPIS data for grade K, presented in Table 3.5.3 and 3.5.5 shows considerable differences between the ANISA children and the CONTROL group. On items 3, 4, 9, 10, 11, 14, and 15 the ANISA group rated their environment more positively than did the CONTROL children. At the ANISA site the K children were far more conscious of the "ground rules" operating in the classroom

Table 3.5.1

Summary of LECRS and LESPI: Hampden, ANISA

Item	Response Frequencies							
	LESPI (N = 9)				LECRS (N = 1)			
	1	2	3	4	1	2	3	4
1	0	0	3	6	0	0	0	1
2	0	0	5	4	0	0	1	0
3	0	0	3	6	0	0	1	0
4	0	0	0	9	0	0	0	1
5	0	1	1	7	0	0	0	1
6	0	0	2	7	0	0	1	0
7	0	0	5	4	0	1	0	0
8	0	0	3	6	0	0	1	0
9	0	0	3	6	0	0	0	1
10	0	2	2	5	0	0	0	1
11	0	0	2	7	0	0	0	1
12	0	0	1	8	0	0	0	1
13	3	4	2	0	0	1	0	0
14	0	0	7	2 *	0	0	1	0
15	0	0	6	2	0	0	0	1
16	1	3	2	3	0	1	0	0
17	0	3	2	4	0	0	0	1
18	0	0	3	6	0	1	0	0
19	0	0	5	4	0	0	0	1
20	1	0	6	2	0	0	0	1
21	0	1	5	3	0	0	1	0
22	0	1	5	3 *	0	0	1	0
23	1	5	0	2 *	0	0	0	1
24	1	4	1	0 *	0	1	0	0
25	0	0	5	4	0	0	1	0
26	0	0	2	7	0	0	0	1
27	0	1	2	6	0	0	0	1
28	0	3	2	4	0	0	1	0
29	0	0	5	4	0	0	0	1
30	0	0	4	5	0	0	1	0
31	2	3	0	4	0	0	0	1

* One or more of the respondents felt that the item was inappropriate for the situation, and therefore did not respond to it.

Table 3.5.2

Summary of LEORS and LESPI: Hampden, CONTROL

Item	Response Frequencies								
	LESPI (N = 2)				LEORS (N = 2)				
	1	2	3	4	1	2	3	4	
1	0	0	1	1	0	1	0	1	
2	0	0	2	0	1	1	0	0	
3	0	0	2	0	1	0	1	0	
4	2	0	0	0	1	1	0	0	
5	0	0	1	1	1	1	0	0	
6	0	0	0	2	0	0	0	2	
7	0	0	2	0	0	1	0	1	
8	0	0	1	1	1	1	0	0	
9	0	0	0	2	0	0	1	1	
10	0	1	0	1	0	0	0	2	
11	0	0	1	1	0	0	2	0	
12	0	1	0	1	0	0	1	1	
13	1	1	0	0	0	0	2	0	
14	0	0	1	1	0	2	0	0	
15	0	0	0	2	0	0	2	0	
16	0	1	0	1	0	0	1	1	
17	0	0	1	1	0	2	0	0	
18	0	0	1	1	1	1	0	0	
19	0	0	1	1	0	0	1	1	
20	0	0	1	1	0	0	2	0	
21	0	0	1	1	0	1	1	0	
22	0	0	2	0	0	2	0	0	
23	0	1	1	0	0	0	0	2	
24	1	1	0	0	0	0	2	0	
25	0	0	2	0	1	1	0	0	
26	0	0	2	0	0	2	0	0	
27	0	0	1	1	0	1	0	0	*
28	0	0	2	0	0	1	0	0	*
29	0	2	0	0	0	0	2	0	
30	0	1	0	1	0	0	2	0	
31	2	0	0	0	0	1	0	0	*

* One observer felt that the item was inappropriate for the situation, and therefore did not respond to it.

Table 3.5.3

Summary of Learner Perception Interview Schedule: Hampden, ANISA, Grade X

		Item Numbers															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Response		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
		Boys (N = 10)															
Yes		10	10	09	09	05	09	08	09	08	09	06	03	10	08	05	04
No		0	0	0	01	04	0	01	0	02	01	04	07	0	02	05	06
Undecided		0	0	01	0	01	01	01	01	0	0	0	0	0	0	0	0
		Girls (N = 10)															
Yes		10	08	09	10	04	08	10	10	06	10	06	04	09	09	04	03
No		0	0	0	0	04	02	0	0	04	0	04	06	01	01	06	07
Undecided		0	02	01	0	02	0	0	0	0	0	0	0	0	0	0	0
		Total (N = 20)															
Yes		100%	90%	90%	95%	45%	85%	90%	95%	70%	95%	60%	35%	95%	85%	45%	35%
No		0	0	0	5	40	10	5	0	30	5	40	65	5	15	55	65
Undecided		0	10	10	0	15	5	5	5	0	0	0	0	0	0	0	0

Table 3.5.5

Summary of Learner Perception Interview Schedule: Hampden, CONTROL, Grade K

		Item Numbers															
Response		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
		Boys (N = 13)															
Yes		12	11	07	08	08	13	13	13	06	07	01	10	12	05	0	07
No		01	01	05	02	03	0	0	0	07	06	12	03	01	06	13	04
Undecided		0	01	01	03	02	0	0	0	0	0	0	0	0	02	0	02
		Girls (N = 8)															
Yes		07	07	03	02	03	07	07	08	04	02	0	08	08	05	01	04
No		01	0	02	04	01	01	01	0	04	06	08	0	0	03	06	04
Undecided		0	01	03	02	04	0	0	0	0	0	0	0	0	0	01	0
		Total (N = 21)															
Yes		90.5%	85.7%	47.6%	47.6%	52.4%	95.2%	95.2%	100%	47.6%	42.8%	4.8%	65.7%	95.2%	47.6%	4.8%	52.4%
No		9.5	4.8	33.3	28.6	19.0	4.8	4.8	0	52.4	57.1	95.2	14.3	4.8	42.8	90.5	38.1
Undecided		0	9.5	19.0	23.8	28.6	0	0	0	0	0	0	0	0	9.5	4.8	9.5

(items 3 and 4), of the surrounding environment and its varying dimensions (items 9, 10, 11), and were far more self-directed in terms of selecting tasks and managing their time (item 14, 15). On the other hand, the CONTROL K group enjoyed more freedom in selection of task group (item 6). One discrepancy in the data is apparent in item 12. Only 35% of the ANISA children perceived the sound level of the classroom of such quality that they were able to hear and be heard, while 86% of the CONTROL group responded similarly. This seems to be at odds with the observers' ratings of good sound quality only 50% of the time at the CONTROL school, and 100% of the time at the ANISA site. This can be explained in one of two ways: either the item was misunderstood by the children during the interview; or, the CONTROL children have acquired a greater facility for screening out auditory interference and thus have become insensitive to noise around them.

The data presented in Tables 3.5.4 and 3.5.6 demonstrate that as we move up to grade 1 the differences between ANISA and CONTROL all but disappear. Items 2, 3, 4, 5, and 11 show some differences but in general, the perceptions of the children at both sites is uniform. Items 3 and 4 refer to the "ground rules" operational in the learning space. Since "ground rules" were a major part of the ANISA implementation, it is to be expected that the children in this program would perceive their environment more consciously in this dimension. Items 2 and 5 indicate that the ANISA students exhibited a more pronounced tendency to perceive their teachers as liking school and as not favoring any child or group of children. The response to item 11 indicates the ANISA children received more encouragement to explore the animal world that the CONTROL group did.

Table 3.5.4
Summary of Learner Perception Interview Schedule: Hampden, ANISA, Grade 1

Response	Item Numbers															
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Boys (N = 14)																
Yes	13	14	13	13	05	12	14	14	07	08	07	08	13	07	02	04
No	01	0	01	01	08	02	0	0	07	05	07	06	01	07	11	10
Undecided	0	0	0	0	01	0	0	0	0	01	0	0	0	0	01	0
Girls (N = 6)																
Yes	05	06	06	06	0	06	06	06	04	03	03	02	05	02	01	03
No	01	0	0	0	04	0	0	0	02	03	03	04	01	04	05	03
Undecided	0	0	0	0	02	0	0	0	0	0	0	0	0	0	0	0
Total (N = 20)																
Yes	90%	100%	95%	95%	25%	90%	100%	100%	55%	55%	50%	50%	90%	45%	15%	35%
No	10	0	5	5	60	10	0	0	45	40	50	50	10	55	80	65
Undecided	0	0	0	0	15	0	0	0	0	5	0	0	0	0	5	0

Table 3.5.6
 Summary of Learner Perception Interview Schedule: Hampden, CONTROL, Grade 1

		Item Numbers															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
		Boys (N = 13)															
Yes		10	09	04	09	06	11	11	13	06	06	0	06	10	06	04	05
No		03	03	05	03	06	02	02	0	07	07	13	07	02	07	09	07
Undecided		0	01	04	01	01	0	0	0	0	0	0	0	01	0	0	01
		Girls (N = 7)															
Yes		06	04	03	05	05	06	06	07	05	03	0	05	07	02	01	02
No		01	02	02	0	0	01	01	0	02	04	07	02	0	04	04	04
Undecided		0	01	02	02	02	0	0	0	0	0	0	0	0	01	02	01
		Total (N = 20)															
Yes		80%	65%	35%	70%	55%	85%	85%	100%	55%	45%	0%	55%	85%	40%	25%	35%
No		20	25	35	15	30	15	15	0	45	55	100	45	10	55	65	55
Undecided		0	10	30	15	15	0	0	0	0	0	0	0	5	5	10	10

3.6 Future Considerations

The environmental evaluation of Year One merely scratches the surface and points the direction for further exploration in Years Two and Three. While a properly articulated physical environment may be a necessary condition for learning, it quite certainly is not a sufficient condition. In future evaluations far more emphasis must be placed on measuring the psychological climate of the ANISA sites, as well as seeking answers to the more painful pedagogical questions which in reality form the warp and woof of any meaningful learning experience.

Some critical personality dimensions of the children need to be looked at pre- and posttreatment, as well as some thorough research in the area of aptitude-treatment interactions.