## 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 arrange-
ment 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 some-
thing 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 evalua-
tion 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 <u>Learner Perception Interview Schedule</u>
<u>(LPIS)</u>, attempted to measure the students perceptions of the learning en-
vironment. 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 environ-
ment, 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 comparative view of the LESPI data across sites appears to show congruence between the ANISA environment and the CONTROL group environment. This data appears in Tables 3.5.1 and 3.5.2. Items 2, 3, 4, 8, and 17 are the exception. All five relate to classroom management; the first four deal with the control of distraction, the last with the control of mess. The ANISA environment was perceived more positively on these items by the respondents than was the CONTROL environment by its staff. This result is not unexpected since great stress was placed on classroom management at the Suffield site this year.

An examination of the LESPI data at the ANISA site shows general agreement among the respondents on all items but one, #23. This item, dealing with the functional integration across age/grade levels reflects a definite polarity: 56% perceive this dimension as absent from the environment; while 39% rated it present some or all of the time; one individual failed to respond to this item. Obviously, a clearer definition of "functional integration" over age/grade levels needs to be articulated, and the ramifications of "function integration" for the ANISA model should be explored in greater depth. This is particularly critical as the ANISA model moves up through the grades at Suffield.

A comparison of the LESPI and LEORS data at the ANISA site shows remarkable agreement between an "outsider's" observation and the staff's perceptions. In general, the ANISA site reflects the model in terms of the physical environment quite definitely. There is a clear trend that classroom management via the arrangement of the learning space has been achieved to

## Table 3.5.1

### Summary of LECRS and LESPI: Suffield, ANISA

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

* One or more of the respondents omitted the item, or responded inappropriately.

**Table 3.5.2**

Summary of LEORS and LESPI: Suffield, CONTROL

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

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

a perceptible degree.

The data from the LPIS reported in Tables 3.5.3 and 3.5.4 support the above results to some extent. The ANISA children are conscious of the ground rules in the classroom, are self-directed to a certain degree, and are sensitive to the dimensions of the surrounding learning environment. However, only a slightly apparent difference shows up in the data between the ANISA and CONTROL group children. On items 4, 13, and 14 the CONTROL group showed a more positive trend, while on item 10 the ANISA children reflected a more positive outlook. On all other items the percentages are nearly identical for both groups. The response to item four suggests that the control group children were more aware of the penalties for breaking the ground rules than the ANISA children. This result is difficult to interpret as it may mean either that penalties were not enforced or that penalties were rarely justified in the ANISA school. Item 13 deals with the display of children's work in the learning space. Again the results are difficult to interpret. It may be that the control group school displayed an inappropriate amount of each child's work. The ANISA model suggests that teachers should be selective in choosing students' work for display, in order to control visual distraction and inspire excellence. The results for item 14 show that only 45% of the ANISA students felt they were free to retrieve materials as they needed or wanted them where as 75% of the control students felt they had this freedom. Finally the results for item 10 indicate the ANISA children had more opportunity to explore the plant world than the control children did.

# Table 3.5.3

Summary of Learner Perception Interview Schedule: Suffield, ANISA, Grade K

**Item Numbers**

| Response | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Boys (N = 5)** | | | | | | | | | | | | | | | | |
| Yes | 04 | 04 | 04 | 03 | 01 | 05 | 05 | 05 | 04 | 04 | 02 | 03 | 03 | 01 | 02 | 0 |
| No | 01 | 01 | 0 | 02 | 02 | 0 | 0 | 0 | 01 | 01 | 03 | 02 | 02 | 04 | 03 | 05 |
| Undecided | 0 | 0 | 01 | 0 | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Girls (N = 15)** | | | | | | | | | | | | | | | | |
| Yes | 11 | 13 | 10 | 06 | 03 | 15 | 13 | 14 | 13 | 15 | 07 | 07 | 10 | 08 | 08 | 02 |
| No | 01 | 0 | 04 | 08 | 08 | 0 | 02 | 01 | 02 | 0 | 08 | 08 | 05 | 07 | 07 | 13 |
| Undecided | 0 | 02 | 01 | 01 | 04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total (N = 20)** | | | | | | | | | | | | | | | | |
| Yes | 90% | 85% | 70% | 45% | 20% | 100% | 90% | 95% | 85% | 95% | 45% | 50% | 65% | 45% | 50% | 10% |
| No | 10 | 5 | 20 | 50 | 50 | 0 | 10 | 5 | 15 | 5 | 55 | 50 | 35 | 55 | 50 | 90 |
| Undecided | 0 | 10 | 10 | 5 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 3.5.4

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

Item Numbers

**Boys (N = 11)**

| Response | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yes | 11 | 11 | 09 | 11 | 01 | 11 | 10 | 11 | 11 | 07 | 08 | 07 | 10 | 07 | 09 | 0 |
| No | 0 | 0 | 02 | 0 | 07 | 0 | 01 | 0 | 0 | 03 | 03 | 03 | 01 | 04 | 02 | 11 |
| Undecided | 0 | 0 | 0 | 0 | 03 | 0 | 0 | 0 | 0 | 0 | 01 | 0 | 01* | 0 | 0 | 0 |

**Girls (N = 17)**

| Response | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yes | 15 | 13 | 12 | 17 | 05 | 17 | 16 | 17 | 15 | 07 | 09 | 10 | 17 | 11 | 09 | 01 |
| No | 02 | 02 | 05 | 0 | 06 | 0 | 01 | 0 | 02 | 10 | 08 | 07 | 0 | 03 | 08 | 16 |
| Undecided | 0 | 02 | 0 | 0 | 06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Total (N = 28)**

| Response | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yes | 92.8% | 85.7% | 75% | 100% | 21.4% | 100% | 92.8% | 100% | 92.8% | 50% | 60.7% | 60.7% | 96.4% | 75% | 64.3% | 3.6% |
| No | 7.2 | 7.2 | 25 | 0 | 46.4 | 0 | 7.2 | 0 | 7.2 | 46.4 | 39.3 | 35.7 | 3.6 | 25 | 35.7 | 96.4 |
| Undecided | 0 | 7.2 | 0 | 0 | 32.1 | 0 | 0 | 0 | 0 | 3.6 | 0 | 3.6 | 0 | 0 | 0 | 0 |

*Subject suffers hearing loss

## 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.