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ABSTRACT

The Key School in Indianapolis, an experimental elementary school, was founded by eight experienced teachers who believed that schools can be enjoyable as well as rigorous. This report focuses on one feature of the school, the Flow Activities Room (FAR). The development of the FAR was based on the school's commitment to the theories of multiple intelligences. Three times a week, students engage in free activity in the FAR. Striking characteristics of the FAR include: (1) a prominent display, on bulletin boards, of themes relating to multiple intelligence theories; (2) orderliness; (3) the degree of choice afforded students; (4) a diversity of activities; (5) an atmosphere of challenge and concentration; and (6) a balance between respect for rules and student choice. Interviews and questionnaires assessing students' response to the FAR indicate that the FAR has a positive impact on students. It has been learned from the FAR that: (1) intensified play can be a learning experience; (2) the opportunity for choice helps students clarify their interests; (3) game playing provides opportunities for practicing process-oriented skills and developing sustained attention. A list of 17 references, and several students' drawings, are provided. Appendixes include a guide to the development of the FAR and sample pages and items from the questionnaire. (BC)

PUTTING FLOW THEORY INTO EDUCATIONAL PRACTICE

The Key School's Flow Activities Room

Report to the Benton Center For Curriculum and Instruction University of Chicago

May 1991

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INTRODUCTION

About twenty–five centuries ago Plato observed that the central task of education was to teach young people to find pleasure "in the right things." What he meant was that if children learned to enjoy useful, productive activities the task of education was completed, because from then on they would willingly seek out by themselves those things that were both useful and enjoyable. Ever since that time theorists have tried to find ways to make education intrinsically rewarding so that young people would spontaneously want to learn.

Unfortunately, we have not made much progress towards this goal in the intervening centuries. Formal schooling is usually experienced as something to be endured, and all too few students learn to enjoy the acquisition of knowledge for its own sake. Our present task is not to try explaining the historical, sociological, and psychological factors that have conspired to make a drudgery out of education. Instead, we shall endeavor to describe one of the attempts of a small group of determined and creative teachers have made in an attempt to restore joy to learning.

The Key School in Indianapolis was founded by eight experienced teachers who believed that schools can be enjoyable as well as rigorous. They sought out the best contemporary advice as to how to realize their dream. Now in its fourth year, the Key School appears to be an experiment that works, and that offers hope for all of us who believe that the early years of life, when so much learning takes place, should also be among the very best years.

In this report we will focus on one of the special features of the school: the Flow Activities Room. Although there are many unique aspects to the Key School experiment, the Flow Room is particularly intriguing, because it involves the boldest – and therefore also the most controversial – attempt to realize the Platonic concern for intrinsic motivation within a public school setting. Briefly, the Flow Room allows students to spend a few hours each week in a stimulating,

orderly, but unstructured environment where they can become freely involved in a variety of activities.

The Flow Room serves two main educational purposes. First, it allows students to explore various aspects of their intelligences, to experiment with different skills, and thus to develop potentialities that otherwise may never be tapped. Second, the free, enjoyable, but orderly activity in the Flow Room is expected to infuse the rest of the more structured classes with a halo of intrinsic motivation. In other words, it was hoped that if children learned that one part of their school experience can be rewarding, they might realize that all educational experiences could be equally enjoyable.

The rest of this report will try to describe how the Flow Room works, and how it is integrated into the rest of the school. It will also show its effects on the experience of the students, and how the Flow Room is evaluated within the context of the children's lives. It is too early to determine the long–range consequences of this exciting educational experiment. In the meantime, however, everyone concerned with the fate of our children can profit from knowing what the dedicated teachers of the Key School have done to make learning more enjoyable[1].

[1] The authors wish to thank the entire staff of the Key School, and especially Patricia Bolanos and Gwendolyn Staten, for their interest and indispensable cooperation during this research. We also thank the Benton Center for Curriculum and Instruction of the University of Chicago for its financial support of the project. The energy and insights of Kevin Rathunde and Maria Wong, also investigators in this project, are reflected in much of what is contained in this report. Last, but definitely not least, we thank the children of the Key School for just being themselves, and for sharing their thoughts, opinions and feelings so candidly.

MAKING A SPACE FOR CHALLENGING PLAY

The Key School is a small educational setting by the standards of most urban public elementary schools. With only 165 students, the task of describing its attempts to institutionalize intrinsic motivation did not seem beyond the reach of our small research team. An initial question, though, was to decide just where in the Key School to study intrinsic motivation. Many activities within the school were intriguing candidates for special attention – the POD or shared interest classes, the weekly teacher meetings with their collegial atmosphere, the use of school–wide curricular themes, and the development of student projects and video portfolios, to mention but a few. In the relatively brief time available for direct observation, however, it seemed best to begin our research in the setting most explicitly aligned with the theory of flow and intrinsic motivation – the "Flow Activities Room". This report will summarize some of what we learned about the Key School's attempt to incorporate challenging play into daily school learning.

The Flow Activities Room (FAR) has been a part of the Key School's curricular design from the school's inception. Three or four times each week, students spend 40 minutes with their classmates in a large room equipped with a varied array of books, board games and puzzles. Students also are encouraged to bring their own hobbies or interests, as long as they require concentration and fit within the bounds of available space. The only expectation during the flow period is that each child remain engaged in some activity that interests her, and that loud noise be avoided.

In broad terms, the inclusion of a free play area in the Key School's curricular design reflected a strong, shared conviction among the founding teachers that play is an essential ingredient of learning. The immediate impetus for developing the FAR, however, did not emerge explicitly from intrinsic motivation theory. Rather, it grew out of the teachers' commitment to Howard Gardner's Theory of Multiple Intelligences, and particularly to experimentation

with alternate methods and venues for assessing human abilities (Gardner, 1983).

A number of the teachers, it should be noted, were experienced art educators, dissatisfied with the low priority accorded the arts within the primary curriculum. They shared Gardner's conviction that traditional curricula foster too narrow a range of mental abilities, and address the primary mental aptitudes of too few students. As an alternative to such curricula, they proposed a plan of elementary studies giving equal weight to the seven general areas of mental competence proposed by Gardner (ie. logical–mathematical, musical, linguistic, kinesthetic, spatial, interpersonal, and intrapersonal intelligences). Further, they decided to pursue Gardner's speculation that the free play of young children in enriched environments can reveal much about their personal profile of mental strengths. Such environments, in his view, may offer invaluable opportunities for naturalistic assessments of diverse intellectual aptitudes, free from the decontextualized constraints and pressures of explicit testing[2].

Quite early in their new school's planning stage, then, the school's founding teachers had decided to build some regular interval for the unobtrusive assessment of intelligence into the main scheme of instruction. The primary educational function of this period was to provide unconstrained opportunities for special aptitudes to reveal themselves and to be reliably assessed, possibly through the medium of complex play. Implicit in this approach, as it is in Gardner's theory, is the intrinsic motivation of human beings to explore, exercise and fully realize their intellectual potential. This motivation was to be the driving force behind the diagnostic activity of the play assessment period. But the cultivation of intrinsic motivation as a more general and valuable educational outcome in its

[2] From Howard Gardner's FRAMES OF MIND (1983, p. 386):

"...it should prove possible to secure a contextually rich and reliable assessment of an individual's intellectual profile. The preferred route for assessment at this age is to involve children in activities which they themselves are likely to find motivating: they can then advance with little direct tutelage through the steps involved in mastering a particular problem or task. Puzzles, games, and other challenges couched in the symbol system of a single intelligence (or of a pair of intelligences) are particularly promising means for assessing the relevant intelligence...Such involvements in rich and provocative environments are also most likely to elicit 'markers' – those signs of early giftedness that are readily noticed by adults expert in a particular intellectual domain."

own right had not yet been articulated as a distinct educational objective of these diagnostic activities.

It was after reading Csikszentmihalyi's early work on the educational applications of flow theory that the school's planners began to explicate the potential motivational outcomes of a regular free play session (Csikszentmihalyi, 1975). This quickly led to a greater emphasis on the daily experiential "lessons" of challenging play, especially the development of powers of concentration and sustained involvement. Attention to the rewards of deep concentration in turn furnished a viable function for the Flow Room that was independent of the difficult practical task of interpreting game choices diagnostically. Reliable interpretation of game choices and refinement of Flow Room materials might take some time. But in learning to flow, it was hoped that the children could gain some control over the process of matching their interests and abilities, whatever those interests and aptitudes might be. From an implicit and secondary consideration, then, intrinsic motivation and the control of experience have gradually become a primary focus of daily activity in the FAR.

A current statement of the pedagogical mission of the Flow Activities Room is included under Appendix A. This summary was developed by the Flow Room teacher to introduce a recent conference of reform–oriented educators to the FAR's guiding principles (PHI DELTA KAPPAN/Key School Conference, March, 1990). As such, it gives a good sense of how the educational goals of the FAR were explained to our research group at the outset of this study. In particular, what comes through clearly is a sense of just how important motivational and general cognitive outcomes have become to the unfolding Flow Room concept. While the FAR is presented as an educational experiment, its development clearly expresses a strong faith in the transformative power of "semi–structured free play." Anticipated benefits include the enhancement of memory, mental acuity and strategic self–monitoring during problem–solving, the development of effective goal–setting, the establishment of self–confidence and the encouragement of experimentation, interest and conscious relaxation.

While the MI paradigm remains the ordering principle behind activity selection, references to the diagnosis of specific intelligences are notably muted in the statement.

Of course, the FAR is not the only setting within the Key School to incorporate play–like activities in the service of learning. An essential feature of the Key School day is its dedication to the proposition that learning can be and should be enjoyed. This commitment to the enjoyment of learning is plainly evident in the faculty's attempt to develop opportunities for playful experiences across a broad range of daily settings. In this sense among others, the entire Key School enterprise is well within the modern tradition of American educational progressivism, emphasizing the relevance of play–like learning to mature intellectual and social development (Dewey, 1913; Piaget, 1951; Bruner, 1972; Sutton–Smith, 1982).

What sets the Key School's approach apart from even its progressive peers, however, is its attempt to embed the daily enactment of play in a shared set of assumptions about human potential and the purposes of schooling. Based largely on a marriage of the Flow and Multiple Intelligence theories, these propositions form the basis of a school–wide culture which champions the rights of each person to the full expression and enjoyment of talent. Against this shared background, play ceases to be viewed as a technical means to otherwise "serious" ends. Instead, emphasis is shifted away from the opposition of play and work, and toward enthusiasm for the intense play of talent development.

Perhaps the chief role of the Flow Activities Room, as we see it, has been to initiate students into the skillful art of sustaining an intense but play–like concentration, the sort of concentration characteristic of flow experiences. Students then have the opportunity to deepen their flow skills in more complex and challenging settings, such as the POD interest groups, music lessons and the theme–based personal project. In this process, the notion of "flowing" has entered the daily parlance of Key School culture, and has begun to effect the educational expectations of students and teachers alike, beyond the confines of the

Flow Activities period. Below we will explore further what happens in the Flow Activities Room, and what about the FAR enhances the experience of intrinsic motivation.[3]

A TYPICAL DAY IN THE FLOW ACTIVITIES ROOM

As a research setting, the Flow Activities Room lent itself to a variety of methodological approaches. On–site observation of the class could be accomplished with a minimum of disruption. Because the children played either alone or in small groups, it also was possible to audiotape interviews and speak freely with the children without disturbing the entire class. Further, videotape cameras were positioned at times in stationary positions around the room, in order to study the dynamics of the FAR as a whole. The development of a working video record of the FAR was facilitated with the help of the school's full–time video specialist. In this section we summarize our impressions of how a typical Flow Room session works, based upon extended periods of observation and subsequent review of the video record.

The Flow Activities Period is an integral part of the normal academic schedule of the Key School. It is not preempted when time is required for special events, and the teaching staff support its presence in the curriculum. Each classroom is scheduled to visit the FAR three times each week. On assigned days, the teacher responsible for the previous class period escorts the children to the Flow Activities center.

Upon arriving, the children begin the Flow Activities period by arranging themselves into pre–assigned groups of five. The teacher who monitors the FAR

[3] As recent critics of school play have pointed out, distrust of play as a tool of education remains pervasive throughout American educational practice (Csikszentmihalyi, 1982; Block, 1984; Block & King, 1987). Free play activities are consigned almost exclusively to the pre–school and kindergarten, and disappear altogether from the classroom by the early elementary years (King, 1987). Where play does survive, its employment is largely instrumental and teacher–directed, made to secure the attention of students in activities that do not provoke interest in themselves. By the time of junior high, even these limited uses of play drop almost entirely from view (Everhart, 1987).

insists on order and quiet before proceeding, and the children seem well aware of her expectations. With order established, the children rise when their group is called and go to the storage area to select their activity for the period. A rotating selection schedule is maintained, so that all children and groups have frequent opportunity to select first. When activity preferences overlap, the teacher encourages sharing, and referees the resolution of conflicts. At any time during the period, children may exchange their activity for a new one, or join an already existing play group, if this is not disruptive.

The role of FAR teacher requires the exercise of considerable flexibility and sensitivity. Besides maintaining order, the FAR teacher circulates among the children, assisting them to understand the games, celebrating moments of skill and success, counseling in the face of failure or frustration, and arbitrating (but not preempting) conflict situations. In collaboration with the UC research team, the teacher also developed an observational protocol designed to assess the ability of the students to engage themselves in the activities that they selected. This protocol occupies about 10 minutes of the teacher's time during each period. The information gathered by the FAR teacher later is used to record the level of motivation and intellectual preferences of each student. These assessments are summarized in a separate section of the Key School's qualitative report card.

With five minutes remaining in the period, the teacher signals the children to stop. The students then reassemble their activity, return it to its place in the storage area, and sit quietly with the members of their assigned group. At the end of the period, the teacher of their next class arrives, and the children move in single file to their next class.

During the two years of our observations, the location of the Flow Activities period shifted once, to accommodate the addition of a pre-school program. While the FAR's first location was somewhat roomier than the present one, neither space would strike a first-time visitor as especially extraordinary or innovative. Some alterations have been made to the present site, including the addition of a loft area to enhance spaciousness and privacy. But both spaces

remained converted classrooms, complete with blackboards, chairs and tables, and no notable technical innovations to distinguish them.[4]

Yet there are a number of other characteristics of a Flow Room session that are indeed striking. Even before the session begins, for example, the observer would notice the prominent display of themes related to the Flow and Multiple Intelligence theories, on bulletin boards around the classroom. In fact, for the uninitiated visitor the messages on these boards might prove difficult to interpret. One board asks the children to think about their favorite flow activities, and displays illustrations and photos of activities available in the FAR, including books, chessmen and game boards. Another displays symbols for each intelligence with its label beneath, and poses the question, "Do you know your seven intelligences?".

These are clearly socializing devices, designed to draw the children's attention to the intended association between the "serious" play of Flow and the exploration of their abilities. Generally speaking, however, these messages are not a primary focus of attention or class process. Rather, they seem to function as a backdrop to activity, situating the Flow Room solidly within the discourse of interest, talent development and cooperative learning that integrates the otherwise diverse Key School day. The specialized language of flow and intelligence lends something of an aura to the "strategic" play of the FAR, effectively setting it apart from play in other settings. Our conversations with the children at play confirmed that they understood at least the outlines of the FAR's educational mission, and took its objectives seriously.

A second, and initially surprising characteristic of Flow Room sessions is its orderliness. Given the degree of student control over their activities, there would seem to be great potential for disruption during the Flow period. But even among the youngest children this is usually not the case. Certainly the room can get noisy, especially when larger groups play competitively, causing the teacher to

[4] Early press reports made much of the presence of a small flight simulator in the first FAR (eg. OMNI magazine, April, 1990). Interestingly, though, the children appeared almost completely indifferent to this machine during our observations.

signal for quiet. For the most part, though, the continual hum of activity does not seem to break the concentration of the majority of children. The impact of this background hum, in fact, may actually be to facilitate concentration and the pursuit of interest. In any case, the Flow Period is not a source of discipline problems for the school at large. Indeed, even the school's most troublesome children seem to have less trouble attending to the rules in the FAR.

A third aspect of the Flow Room, one that sets it apart from most school play settings, is the degree of choice and control afforded to students. The exercise of choice is, of course, central to the experience of intrinsic motivation (DeCharms, 1976; Deci & Ryan, 1985). Yet it is more the exception than the rule throughout the typical American school day. Even when play is incorporated into the curriculum, those play situations controlled by students and teachers tend to remain sharply segregated (King, 1987). Classroom play is decidedly "instrumental" and teacher–directed, and functions most often to supplement the interest of activities that are otherwise dull or worrisome to children. "Recreational" play, on the other hand, is usually student–initiated, but is confined to the playground and the recess period, and accorded marginal educational status.[5]

Flow Room activities fit neither of these conventional molds. The majority of FAR time is spent on activities that the students have selected themselves, at a pace that they determine. The activities in turn do not serve an ulterior pedagogical purpose. Instead, the act of choosing is accorded an educational significance of its own, in terms of the Multiple Intelligence paradigm. Among the explicit roles of the FAR teacher is to note and record the activity choices that students make. These choices become part of the student's academic record and personal portfolio over time, and are seen as clues to the strengths and interests of that individual. At least in theory, the circle is completed as students themselves reflect on their choices and decide what they mean for themselves.

[5] King does identify one form of school play that is both initiated by students and located in the classroom – "illicit play". Here the rules also frame student choices, but in a negative way that contrasts sharply with the Flow Room under most circumstances.

their interests and their mix of abilities.

A fourth striking aspect of a Flow Room session is the diversity and complexity of its activities. Many Key School children come from non-affluent backgrounds, beginning formal education with limited experience of strategic games and complex symbolic play. By introducing children to such play, the FAR appears to be achieving one of its intended functions, that of providing children with opportunities to explore their personal mix of strengths in an intrinsically motivating setting.

Table 1 lists the activities and games mentioned by the fourth, fifth and sixth graders as among their three favorite. The list includes a number of 1212 challenging board games (chess, Pente, Othello), individualized activities (Legos, drawing, Blocks & Marbles, Simon), and competitive games for larger groups (Monopoly, Wildlife Adventure, Trivial Pursuit.) Also represented are a wide range of cognitive skills, including spatial, mathematical, musical and verbal abilities. The FAR's rotating selection procedure assures that each child gains considerable experience with many of these activities over time.

A fifth feature of the Flow Room, providing a counterpoint to the diversity of activity, is the atmosphere of challenge and concentration that prevails there. Table 2 reports the "top ten" popular games of the 60 children in the fourth through sixth grade. The left column records a simple count of votes for the game, while the right column is the same count, weighted by its frequency as a first, second or third favorite.

As in table 1, the list is diverse both in terms of content, format, and symbolic sophistication. Nonetheless, the fact that chess ranks highest in popularity gives some sense of the intensity of Flow Room play, and the enthusiasm of the children for activities requiring focused attention. Like chess, the majority of these activities emphasize skill rather than chance, and require a strategic outlook and intelligent anticipation. Further, all ten games incorporate sufficient complexity to remain challenging for even the most skillful players. As one fourth grade girl remarked, "Othello is easy to play but hard to beat. It takes

a long time to play and keeps your attention." Here is a succinct description of an "autotelic" (ie. self–directing) or flow activity (Csikszentmihalyi, 1990). Such activities lead people spontaneously to hone their skills, by framing "worlds" in which rules are clear, feedback to action is speedy and informative, and opportunities for action are well suited to current abilities.

Finally, there is a sixth dimension of the FAR that becomes evident only after more sustained experience with its everyday dynamics. This involves the unusually fluid balance maintained in the Flow Room between respect for rules and structure, and the exercise of student choice and control. As previously noted, mutually shared rules and procedures are an essential feature of any Flow Room session. The children know clearly what is expected of them before game selection can begin. And they understand the consequences of disrupting the general orderliness of the setting once play has started.

Yet it is equally evident to an observer, and we think to the children as well, that the rules do not exist as an end in themselves. Rather, a minimum of well articulated procedures serve to focus collective attention, in the process moving the group into the phases of choosing and gaming, as quickly and smoothly as possible. This accomplished, the teacher shifts her emphasis from supervision to participation, cuing in turn that the framework of rules may now recede into the background of consciousness[6]. Only when an individual's behavior or the general din threaten to undermine the concentration of others will the teacher draw the rules back into the foreground. This usually is accomplished swiftly and succinctly, with a minimum of intervention in the group process.

We call settings that function in this way "autotelic contexts", because their conditions conspire to focus individuals undividedly on the pursuit of interest and challenge. In this sense, the regulations and procedures of the Flow Room

[6] The Key School was fortunate in its selection of Gwen Staten to take on the position of Flow Activities teacher. Her approach to teaching combines an air of quiet authority with evident good humor and concern for the individual child. These attributes lend themselves admirably to the sort of flexibility demanded by the position.

function much like the rules and structures of the games that are played there. They are designed to function implicitly, deriving their authority not from threat, but rather from the energy that they release and channel into undivided concentration and involvement (Csikszentmihalyi 1990; Rathunde, 1989). This message is made explicit from time to time by the FAR teacher, of course. Indeed, the notion of a connection between discipline and enjoyment is considered by most staff members to be one of the primary lessons to be learned in the Flow Room. In our view, though, it is in *the everyday experience of confluence between an organized environment and the order within the flow activities pursued there* that the Flow Room may teach its most powerful lessons. With its impact on experience in mind, then, it may help at this point to take a closer look at the sorts of experiences that children report in the Flow Room. Is "flow" actually realized in the FAR? And how does the FAR compare experientially to other Key School settings?

EVIDENCE FOR OPTIMAL EXPERIENCE IN THE FLOW ROOM

Take an average group of school children and put them in a room full of games, and it will not be surprising to find that they report having "fun" there. But as prior research into optimal experience has shown, the objects and experiential content of fun can differ widely, across activities, settings and even individuals. The fun that most people associate with the company of friends, for example, varies in quality and intensity from the fun that others report in the course of rock climbing, writing, playing a game of chess, or cultivating a sustained friendship (Csikszentmihalyi, 1975, 1990). In assessing the fun that students have in the Flow Room, then, we wanted to know if it involves the total immersion and concentration, interesting challenge and serious play that are the hallmarks of the flow experience.

Two research tools were employed to investigate this possibility. During a number of visits to the Flow Room over a 12 month period, brief interviews

were conducted with children as individuals or in small groups, in which a range of research questions were piloted. Most interviews involved the use of both video and audio media, and occurred while the children were engaged in their selected activity. Questions focused on the reasons why children had chosen their activity, what it "felt like" to play a game, what helped games go well, how playing the game differed from other school activities, how the FAR differed from other Key School settings, and what the term "flow" meant to them. In later sessions, as major research issues were refined, questions centered more consistently on the immediate correlates of the play experience in the FAR.

Secondly, a self–report questionnaire was developed to assess the frequency of various dimensions of flow in the FAR, and to compare these frequencies with other instructional settings in the Key School (Appendix B). Questions elicited each student's favorite activity (in or out of school), the three favorite FAR activities, and the frequency of 12 affective states or task–related percepts relevant to quality of experience. Five items were worded negatively, six positively, and one ("challenging") is affectively ambiguous. These items and their abbreviated forms (for purposes of graphic display) appear in Appendix C. The questionnaire was administered to three classes (4th, 5th and 6th grades) by the first author during a special extended class period, followed by a videotaped interview with each group. Interviews built on the information provided on the questionnaire. They were designed to be a reflective experience for the students, as well as an opportunity to clarify the experiential significance of favorite and FAR activities.

In order to establish a standard against which to assess optimal experience in school, the questionnaire asked each child to list his/her favorite activity. This activity was then the first to be rated against the 12 experience measures. Table 3 lists these activities, organized by grade level. The list gives a potent sense of the contribution that the children make to the climate of interest at the Key School. Given what we already knew about the commitment to interest and challenge among most Key School parents, we were not surprised by the vigor and variety

of the children's favorite activities. More striking, though, was the focus, complexity and specificity of the majority of responses. Many of these pursuits demand skill, benefit from instruction, entail mastery of complex symbol systems, and in some cases participation in organized fields. In turn, the majority of these interests can find some venue for expression and development within the school's multi–disciplinary curriculum. In fact, for many children it was the curriculum that provided the initial spark of interest directly.

We were also surprised by the experiential insight that many of the children brought to their explanations of their favorite activities. Prior to the present research, investigation into the flow experience had been confined largely to adult and advanced adolescent populations (Csikszentmihalyi & Csikszentmihalyi, 1988). Lack of attention to younger children probably reflected an assumption that play comes naturally to them, and that flow is achieved relatively easily in childhood. No doubt, though, the adult focus of flow research also involved some doubts about the ability of children to differentiate and articulate the experiential dimensions of intrinsic motivation.

As Table 4 makes amply clear, however, many of the children were discriminating interpreters of their own experience. Almost all children who responded during the group sessions could go beyond generalities like "fun" or "interesting" in describing their experience of the activity. And a number were able to distinguish clearly between specific cognitive, affective and motivational aspects of their activities that made them so rewarding. For these children as for adults, favorite activities often are those that permit a close match between complexity and ability, provide clear guidelines to action, and prompt, informative feedback to the exercise of skill. Even more impressive, in some ways, is the "adultness" of some of the responses, especially around themes of anger, anxiety, and stress management. This was particularly prevalent among the sixth graders, many of whom were already experiencing puberty, with its deepening of reflective capacity, and attendant emotional and social complications. For them, the favorite activity permitted a degree of control over

attention that countered the "troubles" of managing increasingly volatile emotions and relationships.

When we compare perceptions of the favorite activity to the rewards reported by the same children in their favorite Flow Room activities (Table 5), similarities and differences are apparent. On the one hand, the immediate experiential feedback provided by favorite and FAR activities closely parallel one another. Flow Room games challenge abilities and "make you think." Yet experiences of control and success remain within the reach of effort. Further, the challenges and interest of many games are rich enough to keep pace with improving ability. In turn, competition is experienced as a part of the process of gaming rather than as a means to external ends. It is something that the children control, not something that controls them. Many children reported learning memorable lessons about self-control and the management of conflict from competitive games. Others enjoyed the chance to gauge their abilities against skillful opponents. In general, winning and losing remain things of the moment in the FAR, and are not a source of evident anxiety or tension.

On the other hand, it is interesting to note that references to the emotional significance of FAR activities are notably absent from Table 5. While most children were observably happy in their play, the emotional outcomes of play apparently are not as compelling to the children as the immediate rewards of the activities in themselves. This may represent a pedagogical advantage for the Flow Room, if its purpose is to focus attention specifically on the control of experience in the pursuit of challenge. Favorite activities, after all, are chosen and adapted by the children themselves to function as part of their entire lives. As such, they more deeply reflect individual psychic needs, and function in part ecologically to address (and perhaps even redress) sources of daily disorder. Participation in Flow Room activities, on the other hand, is a requirement of daily school life, and in that sense is somewhat less voluntary than favorite activities. Yet the structured participation of he Flow Room also frees the child from the need to budget her time between her hobbies and other responsibilities

like homework and chores. For many children, the Flow Room may provide time and space to focus their attention wholeheartedly and unreservedly, a freedom otherwise missing in their lives.

Further evidence of the positive experiential impact of favorite and FAR activities may be found in the questionnaire experience measures. Figure 1 summarizes the pattern of questionnaire ratings given to the favorite activity by the group of 60 children. From left to right, the chart is organized by frequency of reported experience, with each bar representing the mean response. Experiences such as boredom, anxiety, and apathy are rare with favorite activities, as are negative affect and attention to clock time. Those experiences typical of the flow experience, however, are highly frequent, including perceived clarity, intrinsic interest, happiness and self-efficacy. These, in turn, all exceed the mean incidence of challenge, which is nonetheless moderately frequent.

In short, figure 1 corroborates the interview reports of the children concerning the quality of experience afforded by their favorite activities. That is, the frequent incidence of challenge in these activities coincides with a highly ordered and positive psychic profile, one consistent with the flow pattern. Further, the response pattern of the favorite activity is the most autotelic of the five activity settings polled. As such, the ratings support the favorite activity as a fair experiential standard against which to assess optimal experience in the FAR and other Key School settings.

Table 6 summarizes the comparison of the questionnaire ratings of the favorite activity with those given to the Flow Room, PODs, traditional classroom time (Class), and television viewing. Figures 2 through 6 plot each comparison, using the frequency order of the questionnaire items for the favorite activity, reported in Figure 1. In general, the comparison reflects very well on the quality of experience in the FAR, as well as the PODs. Both Key School contexts follow the general response pattern of the favorite activity closely, and evidence more positive experience profiles than TV viewing. This is especially true of the Flow

Room, which is statistically almost indistinguishable from the favorite activity[7].

The response pattern for the traditional classroom, however, is markedly more erratic, and digresses most consistently from that of the favorite activity. Figure 5 indicates that aversive experiences like boredom or time consciousness are at least as likely as experiences associated with flow in the classroom. A number of flow dimensions also fall below challenge in reported frequency. This pattern gives some flavor of the experiential complication of the traditional classroom, for both teacher and student, even in the consciously progressive environment of the Key School. It is also consistent with the pattern of experience reported by high schoolers in class, and with the vast body of longitudinal evidence showing the decline in perceived ability and intrinsic interest over the elementary school years (Csikszentmihalyi & Larson, 1984; Deci & Ryan, 1985, for review).

Some further sense of the experiential isolation of classroom time can be gained by contrasting the pattern of correlations in Tables 7 and 8.[8] Three patterns are particularly intriguing. First, a strong pattern of positive associations exists between experience in the favorite activity, and quality of experience in the FAR, PODs, and to a lesser degree, TV viewing (Table 6). This may indicate individual differences in the ability to enjoy contexts in which the responsibility for choice and the development of personal interests lies largely with the children. Second, both tables bear out very little relation between classroom perceptions, and quality of experience in the intrinsically motivating settings. In fact, while the trend is mild, there is a tendency for children who dislike the traditional classroom to favor the POD's and FAR, and visa versa. Finally, the moderate to high correlations between the sense of apathy (DON'T CARE) across all settings may reflect individual differences in motivation that

[7] Paired T-Tests matching the scores for each item between contexts were used to ascertain statistical significance.

[8] Because of the brief range of the response scale and the relatively large number of correlations reported here, the data are offered only as a provisional indicator of the experiential relationships between the five activity contexts.

stem from conditions outside the immediate control of the school.

Of course, many factors may converge to depress the quality of experience in the classroom. At the time of this data collection, classroom instruction in most of the academic disciplines (eg. math, language, reading) was probably the least innovative aspect of the Key School program. In contrast with the POD's and FAR, classroom instruction remained group–oriented and teacher–centered, with fewer opportunities for student initiative or individual pacing. With so many chances to choose and move about freely in other settings, it is not surprising that the children were less enthusiastic about the discipline of the traditional classroom.

It is also likely, though, that the aversiveness of classroom experience stems as much from the difficulties posed by complex symbolic domains as from classroom structure. In our interviews, for example, students regularly berated mathematics as the antithesis of their favorite and FAR activities. One avid 12 year–old dog trainer summed it up this way: "Dogs are gold, but math is dirt...I love animals, and in math you have to think more – you know, numbers." And for most students, in fact, the rewards of play with numbers and letters prove much more elusive than the immediate feedback provided by sports, animals, manual crafts and musical tones.

This difference may reflect the impact of unnecessary constraints in the math and reading curriculum, to some degree. But it also undoubtedly reflects the reality that abstract thinking and symbolic manipulation, while "natural" to the human species, are difficult skills to master (Gardner, 1984). In turn, the pedagogical skill of linking symbols closely to their concrete referents, so crucial to how students learn with symbols, is difficult to cultivate. Little wonder, then, that the settings in which symbolic manipulation are practiced seem less autotelic and more psychically taxing than the POD's or FAR.

Yet we should not close this section without noting that intrinsic rewards are still achieved in Key School classrooms. The classroom response pattern, while erratic, is not the mirror opposite of the favorite activity, and flow

experiences are by no means rare. The challenges of math may be vexing. But as a number of students noted, the rewards of cracking a difficult problem can be just as absorbing and fulfilling as those realized in the Flow Room.

CONCLUSION: SEEKING THE LESSONS OF FLOW ROOM PLAY

We began our investigation of the Flow Activities Room with the intention of addressing two basic research questions. First, we wanted to know if the experience of the FAR actually lives up to its billing. Second, we wanted to know if anything substantive was learned in the Flow Room, and if so, what those lessons might be. To pursue these issues, a three–pronged research strategy was employed, combining on–site observation, individual and group interviews, and a controlled psychometric instrument. It was hoped that the coordination of these techniques would yield a psychologically and contextually rich portrait of the Flow Activities Room and its educational outcomes.

While we regard this research as preliminary, strong evidence emerged indicating that flow is indeed a consistent experiential outcome of time in the Flow Room. The results of our questionnaire correlated strongly with our observational impressions and interview findings on this point. The quality of experience reported by students in their favorite games closely matched adult flow reports in pursuits as challenging as rock climbing, surgery, ocean sailing and tournament chess. In turn, the majority of activities available in the FAR featured sufficient balance between clear structure, choice, control and complexity to assure positive experiences of challenge and intrinsic interest. Whatever the educational impact of the Flow Room, it was clear that FAR play often achieved the confluence of concentration, intrinsic motivation, challenge and perceived competence that define the experience of "deep flow." Similar experiences were reported in other Key School settings, and most notably in the PODs, which also were designed with intrinsic motivation in mind. *On balance, our findings indicate that the experience of intrinsic motivation in challenging*

activities is a prominent dimension of the average Key School day.

But does the fact that Flow Room activities are experienced as intrinsically motivating mean that the Flow Room teaches such motivation, or that intrinsic motivation is learned there? If it is learned, do these lessons transfer beyond the Flow Room, into attitudes and behaviors that aid learning elsewhere? And to what degree has the Flow Room realized its diagnostic function, as well as the proposed link between intrinsic interest and the discovery of talent? The question of what may be learned in the Flow Room can not be addressed conclusively with the data gathered during this limited pilot study. On the other hand, the evidence that students could articulate their Flow Room experiences in terms aligned with the Optimal Experience paradigm allows some informed speculation about the "lessons" of challenging school play. We conclude by suggesting what some of those lessons might be.

Thinking of Learning as Intensified Play If by "lessons" we mean discursive knowledge, then it was clear that most students were aware of what the Flow Activities period was supposed to accomplish. Or at least, they seemed to have attended closely to how their teacher had explained the room's objectives. Many children told us that the FAR's purpose was to promote strategic thinking, enjoyable involvement and the ability to concentrate. Asked to explain the classroom's name, other children attributed a variety of meanings to the word "flow", including "fun", "something interesting", and "thinking." One student struggled valiantly to connect the idea of flow to the rhythmic movements of water, implying (as much with his hands as his words) that flowing was an easy and harmonious mode of thinking.

Among the older students there was also some awareness of how their game choices might reveal their intellectual propensities. Some students even had begun to formulate personal theories about the intellectual meaning of their game choices, interpreting them in MI terms. One able musician claimed to use his Flow time to exercise some of his "secondary talents", in games that challenged

his mathematical and verbal intelligences. Another sixth grader told us that his interest in the game Blocks–and–Marbles directly reflected his strong spatial and mathematical abilities. For most children, though, the lessons that they claimed to learn in the Flow Room were of a more generic and motivational nature – that thinking can be fun, that rules help people work toward common goals, and that improvement comes from learning to concentrate and adjust your efforts.

Most would agree, of course, that these are commendable and educationally desirable attitudes to inculcate among young children. Indeed, as a belief system, such attitudes work to knit the Flow Room into the fabric of the surrounding school, reinforcing a sense of its seriousness as a place of genuine learning. At the same time, though, we recognize that such statements, by themselves, can not fail but evoke a certain degree of skepticism. Barring outright deception, was it not possible that these children were repeating for visitors what they knew they were supposed to be learning? To what extent are these attitudes merely mimetic, and to what extent are they grounded in personal experiences of challenge, competence, cooperation and choice? Alternately, do Flow Room activities and procedures develop some set of skills with the potential for transfer to other learning processes?

We had neither the time nor in some respects the expertise to assess whether the inventory of cognitive, affective and motivational outcomes hoped for in Appendix A are actually being realized in the Flow Room. But we did find evidence for the development of a cluster of meta–skills that can greatly enhance the capacity to pursue lifelong learning. These meta–skills may be summarized under the rubric of two general meta–skills: the ability to clarify personal interests, and the ability to control attentional processes.

Learning to Clarify One's Interests Earlier we pointed to frequency of choice as one the distinguishing features of Flow Room experience. We emphasized the central role that experiences of choice can play in enhancing a student's perceptions of control, involvement and challenge. These are important

reasons to build opportunities for choice into the school day, especially in light of their absence from so much school learning. But as we all know, while having choices is almost always desirable, actually making choices can be exceedingly difficult. Choice evokes effort, and demands skill in the process of posing, focusing and acting upon the question, "What do I *really* want to do." In particular, it requires the ability to select, constrain, and prioritize the criteria by which to discriminate options that best match one's interests. Failure to develop these skills can leave the individual feeling confused, overwhelmed, and only too willing to abandon volition to the dictates of external authorities, whether they be friends, leaders or ideologies.

Because choice is built into each Flow Room session as a condition of participation, children are encouraged to actively assess their interests on at least two distinct levels of volition. For those who do not plan their activity prior to the session – and this was almost invariably true of the younger children – the initial selection procedure provides each child with an unpressured interval in which to search her interests. From what we observed, many of these children clearly found themselves in the proverbial situation of the child in the candy shop. That is, the imperative to choose from among so many attractive alternatives did require thoughtful effort. But the fact that the other children were restrained from intruding on this interval helped to exclude extrinsic considerations from each child's eventual selection. In any case, the work of making a decision was effort that most children seemed to enjoy exerting.

On a more advanced level of volition, it was clear that increasing numbers of the older children had begun to consider their activity preferences well before the selection period. In general, the older classes moved to their preferences more quickly, and evidenced less ambivalence during the selection period. Many children elected to bring a personal interest with them, and were busy at work as soon as they arrived. Others had pre–arranged a group game with classmates, and were ready to go as soon as it was chosen by one of their number. Many older children, that is, had begun to plan and think ahead, asserting a degree of

control over the selection process. They were anticipating the requirement to choose, and ordering circumstances to fit their interests and enhance the experience of interest during the relatively brief Flow Period. In the process, they were learning what is really the larger lesson of choice in the Flow Room – that the key to experiences of control, involvement and freedom lies within oneself, in the capacity to shape a fit between one's interests and the available means to fulfill them.

Keeping One's Head in the Game One of the ways in which games differ from everyday life, and are thus so potentially enjoyable, is the clarity and relative simplicity of their goals. The means of accomplishing the goals may be devilishly difficult to master. But unlike daily living, in which much energy is often required just to clarify what should be accomplished, the objectives of well–structured games are immediately available to authorize action.

From the point of view of information processing, this property of games has an immediate educational implication. It means that games provide opportunities for the sustained practice of process–oriented cognitive skills, free from the mental burden of monitoring and clarifying goal states. By process–oriented cognitive skills, we mean something more fundamental than the sorts of problem–solving skills listed in the Flow Room summary in Appendix A. These skills and strategies are important. But underlying them is the assumed capacity to selectively identify and monitor those sources of information in the immediate situation that are most relevant to the on–going resolution of the game. Such information is often difficult to clarify. Its sources are often disparate, and may include the actual disposition of a game's "hardware", as well as accruing knowledge of the behavior of opponents and one's own strengths and weaknesses.

To convert such information into useful feedback requires the ability to keep one's attention dynamically engaged in the action and direction of the game. This entails shifting flexibly between intensive and extensive allocations of attention, and the capacity to exclude from consciousness percepts irrelevant to

performance, whatever the source. It requires control over one's limited attentional resources. And it entails the confidence, anchored in experience, that the concentration of attention in challenging activities will yield to the sort of effortlessness and psychic clarity that are the signature characteristics of flow consciousness.

The evidence presented here certainly suggests that Flow Room games and activities provide experience with the sustained control and management of attention. Both the interview and questionnaire responses indicate that the children enjoy the variety of strategic challenges that FAR games pose. Moreover, they can describe the complexities of their favorite games in detail, understand their own strengths and weaknesses as players, and are aware of the degree to which they have improved. The pattern of game selection suggests that while most children vary their game choices periodically, many regularly return to one or two activities that they especially enjoy. After a year of regular play, not only are these children experts on their games (ie. discursively knowledgeable). They are visibly expert in the business of skillfully adjusting their moves and strategies to the current circumstances of play (ie. procedurally knowledgeable). In activities as varied as block–building, chess, and board games, we observed children considering their next moves thoughtfully, experimenting with alternate scenarios, projecting the outcomes of their actions, deciding on the basis of those projections, and evaluating mistakes.

What we would emphasize here especially are the lasting experiential implications of strategic reflection. That is, there is more to the strategic consideration of a problem than merely cognitive representations of problem states. It involves in addition the *imaginative feeling through* of alternative solutions, entailing the search for the best ways in which to deploy one's skills to overcome obstacles and find new challenges. Indeed, it is exactly this process of focusing and feeling through the complexities of a problem that precipitates the sustained involvement associated with flow experiences. Well–defined problems like those posed by games provide rich opportunities to develop facility in the

process of conceptualizing and matching challenges and skills. This facility, in turn, deepens the child's assurance about her ability to experience new problems as "real challenges" rather than as threats to self–worth. At this point we can say little about the actual transfer of specific game skills to other arenas of daily school learning. But the weight of flow research supports the view that the ability to identify challenges that activate but do not overwhelm skills is characteristic of effective learners across a wide spectrum of talents and interests.

To get a richer sense of just how powerful the nexus between interest and sustained concentration in the FAR can be, it will help to take a closer look at the Flow Room drawings of two remarkable boys. Both boys differed noticeably from their classmates in the single–mindedness and clarity of their interests. And both found the Flow Room an amenable place to focus and pursue their passions.

Josh's passion for architectural drawing was first sparked by his participation in a specialized architecture POD. He found that drawing buildings to precise scale brought out a pleasure in thinking that he had not previously suspected he might enjoy. He soon found himself drafting buildings at every opportunity, and taking increasing amounts of Flow Room time to perfect his skills. Figures 7 through 10 feature designs from Josh's sixth grade architecture notebook. All were completed in part during Flow Room sessions. They communicate quite effectively Josh's attention to detail, his insistence on scale, and the considerable extent of his knowledge of contemporary American architecture. In addition, they reveal Josh's willingness to challenge his drafting abilities by attempting a variety of styles. Not only is figure 9 an imaginative "who's who" of American buildings, but it evidences a capacity for perspective, sensitivity to design diversity, and perhaps even a touch of humor.

Something else happened in the Flow Room while Josh was drawing that strikes us as especially significant – his drawing sparked the interest of his classmates. In fact, during the year in which we observed Josh, a sort of interest circle developed spontaneously around architectural drafting. The circle was comprised of four or five male sixth graders, with Josh clearly at its center.

What seemed to fascinate these boys most was the precision and care of Josh's drawings. They vied with each other in the detail of their buildings, but also shared their techniques, and improved their own designs in the process. In turn, Josh, who tended to be quiet in class, appeared to enjoy the company as well as the critical interest of his classmates. From our viewpoint, the emergence of this group captured much of what was most exciting about the Flow Room – its nurturance of personal interest, its encouragement of attentional focus, its support for student autonomy, and its cultivation of an ethos of cooperation and critical appreciation.

In the startling progression of Ivan's work we witnessed an even more striking instance of how the freedom afforded by the Flow Room could assist the emergence of talent. Ivan first came to our attention as an unusually serious youngster with a passion for maps. In talking with Ivan as a fifth grader, we were impressed by the contrast between his normally quiet reserve, and his animated descriptions of the pleasures of map reading. He remembered that as a very young child, he would borrow maps from his uncles, who were truckers, just for the fascination of tracing the multifarious paths made by their mysterious lines. Later, he began to understand that these lines signified roads and cities, places that existed in the real world. Soon he was pestering his mother to help him make road signs for their house, and was beginning to imagine in detail the features and inhabitants of cities around the world. By fourth grade, when he entered the Key School, he had already begun to compile an extensive map collection.

Precocious sensitivity to a symbol system, voracious interest in a domain, and unusual single–mindedness in the pursuit of that interest – in retrospect, these were all cues that in Ivan we were encountering a person with a special talent for the symbolic representation of spatial relations (Feldman,1986). But it was not until Ivan showed us his mapping notebook during our second year of research that we began to realize the full extent of this talent. Ivan carried this notebook with him everywhere during his sixth grade year at the Key School. It contained

precise and often detailed studies of imaginary communities at various stages of development. He often used Flow Room sessions to focus on his urban designs, which were maturing noticeably in their scope and sophistication by the end of his stay at the Key School.

Figures 11 through 17 reproduce a few pages from Ivan's elaborate plans for one of his more recent communities, "Burlington, New Mexico." Figures 13, 14 and 15 convey the remarkable imaginativeness and attention to detail that Ivan brings to all his mapping projects. Ivan tries to make his creations as realistic as possible, and is determined to leave little if anything to chance. He reads continually about cities of all kinds, and has broadened his scope over time to include the minutiae of city government, private enterprise and popular culture. While Ivan's drawings sometimes include touches of humor and parody, these are never allowed to undermine the sense of authenticity that Ivan strives to evoke in his designs.

Figures 11, 12, 16, and 17 document a further development in Ivan's drafting talent during the sixth grade – the emergence of three–dimensional perspective. Prior to sixth grade, most of Ivan's sketches were of the two–dimensional, "aerial" variety found in figures 11 and 12. With sixth grade, though, he developed the capacity to "zoom in" and depict details from these aerial maps using depth and perspective. An additional strength of figures 16 and 17 is the sense of direction and movement that they convey. If developed, this dynamic facility with perspective could prove a great advantage in channeling Ivan's interests into a fully developed adult talent. Already as a seventh grader his talents have drawn the attention of his middle school teachers. Earlier this year, they encouraged him to submit a metropolitan redistricting design to the Indianapolis City/County Commission. Of the plans submitted by the general public, his is currently one of few receiving serious consideration for actual implementation.

For both Josh and Ivan, the Flow Activities Room was only one of many places where they could take time to work on their drawings and ideas. Both

boys received valuable feedback about their work as members of the school's architecture POD. And both kept extensive notebooks that occupied their time at home as well as in free moments during school. What the boys did find in the Flow Room, though, was an atmosphere unusually receptive to the free yet focused exploration of their most pressing interests. Here were forty minutes in which to focus undividedly on what they loved to do, working at their own pace and under their own direction. Even if the rest of the school day had been difficult or troubling, Flow time brought chances to regroup, relax, and re–experience the pursuit of something that truly mattered to them.

It is our sense that the interest and freedom of the Flow Activities Room filled a special niche for Josh and Ivan, and indeed for most of the children we observed. Few students use the FAR to explore talents as well defined as those of Ivan and Josh. But as one facet of the highly diverse and challenging Key School day, the Flow Room provides all students a time in which the rewards of focused attention are within each child's reach, and the connections between concentration and enjoyment are at each child's fingertips. In future research, we hope to broaden our understanding of the niche occupied by the Flow Room, to encompass its contributions to the ecology of intrinsic motivation at the Key School as a whole.

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Tables, Figures, & Appendices

Table 1

36 FAVORITE FLOWROOM ACTIVITIES
(GRADES FOUR THROUGH SIX; 60 CHILDREN COUNTED)

BATTLESHIP	BLOCKS AND MARBLES	BOGGLE
CANDYLAND	CAT'S EYE	CHECKERS
CHESS	DRAWING	CONNECT-4
COPYCAT	GHOSTS	HI Q
HEAD OF THE CLASS	IT'S NOT EASY	LEGOS
MASTERMIND	MILTON	MONOPOLY
MUSIC BINGO	MONKEYS IN THE BARREL	OTHELLO
PENTE	PICTIONARY	RHYME TIME
RACE TO THE ROOF	RIDDLE RACE	SIMON
RIDDLES & RHYMES	SNEAKY SNAKE	SORRY
TROUBLE	TWISTER	TOPPLE
TRIVIAL PURSUIT	WILDLIFE ADVENTURE	UNO

Table 2

TOP-TEN PREFERRED GAMES IN FLOW ACTIVITIES ROOM IN ORDER OF FREQUENCY OF MENTION AMONG 60 OLDER STUDENTS (GRADES 4-6)

GAME	#MENTIONS	SCORE
1. Chess	16	36
2. Blocks & Marbles	15	30
3. Wildlife Adventure	10	24
4. Othello	10	20
5. MasterMind	9	17
6. Race to the Roof	9	15
7. Battleship	8	19
8. Twister	8	18
9. Cat's Eye	8	15
10. Pente	7	15

Table 3

SAMPLING OF FAVORITE ACTIVITIES ORDERED BY SCHOOL GRADE

GRADE FOUR

Drawing	Piano Playing	Swimming
Camping	Running	Electronics
Art	Nintendo	Football
Acting	Singing	Riding ATV
Baseball	Playing w/ Friends	Finding Snakes

GRADE FIVE

Go to Beach	Ride Bike	See Movie w/ Aunt
Baby Sitting	Running	Play Piano
Gymnastics	Swimming	Singing
Play Clarinet	Baseball	Track
Riding Horses	Eating	Stay Overnight w/ Friend
Ride Four-Wheeler	Reading About Cities	
Learning About Space		

GRADE SIX

Riding Horse	Reading	Caring For Animals
Drawing Buildings	Play Saxaphone	Raising Dogs
Shopping w/ Friends	Baby Sitting	Theatre
Model Building	Singing	Play Piano
Dancing	Designing Clothing	Visiting Grandparents

Table 4

The Intrinsic Rewards of Favorite Activities
Reports of Fifth and Sixth Graders at the Key School

Gaining Control Over Experience:

I feel real free, and I don't have any troubles to worry about.
(Horseback Riding, Girl, Grade 6)

On a hot day, you get into the cool water and feel relieved. And sometimes all my stress kind of releases. When I'm angry I can swim as fast or as hard as I can, to lose that. **(Swimming, Girl, Grade 6)**

When I'm playing piano, I'm really concentrated with it. I don't have to think about all the rest of the troubles that are going on. And I like getting applause.
(Playing Piano, Boy, Grade 6)

The reason that I like singing is that it calms me down. **(Singing, Girl, Grade 6)**

I like to read because I understand more why people in the class act the way they do. You read books and then see someone doing something, and it may be because of something that happened at home. And then you don't want to punch them anymore.
(Reading, Girl, Grade 6)

Interest and the Rewards of Challenge:

When I draw buildings, it makes me think, and I like to think. It may not appear that way, but I do. I start from the bottom, and work up. Then I work out a scale, and start doing the measurements. **(Drawing Buildings, Boy, Grade 6)**

I like to look through the water. I think things under water look interesting. I might want to be a Marine Biologist. **(Swimming, Girl, Grade 6)**

First you try and do something that you've never done before. Then once you've done it for a while, it gets easy. **(Gymnastics, Girl, Grade 6)**

I like to read information and think up a problem for myself. Then I try to solve the problem. I look at some of the streets, and I imagine how the intersections look.
(Reading Maps, Boy, Grade 5).

I like songing faster songs. I think about other things more when I sing a slow song. I think a little about slow songs, but also a bit about what's going on around me.
(Singing, Boy, Grade 6)

Table 4 (continued)

The Intrinsic Rewards of Favorite Activities

Clear Goals and the Means to Achieve Them:

When I'm in theatre, I know exactly what I'm supposed to do, and I can do a good job at it. I feel like doing the best I can do. You have to have your lines memorized, and that's hard sometimes. **(Acting, Girl, Grade 6)**

When You're doing a sport and having fun, it usually goes by fast. You track your mind on what you're doing, and nothing else. You're not looking at the clock, but at what you're supposed to be doing. **(Sports, Boy, Grade 5)**

Chances for Self-Expression:

I do this for myself, and I started when I was young. What I design is my own thing, and no one can take it from me. The clothes express the way I feel about things. I think, "What should I put in? Should I put beads on this dress? Should it be flesh color or cloth? How should the cuts be made? "
(Dress Making, Girl, Grade 6)

When I do dances that other people try to teach me, I feel real stiff and tight because I'm not creating them. But if I create them, then I can get them to do what I want them to do....When I'm dancing at home, I feel free.
(Free-Form Dancing, Girl, Grade 6)

Table 5

How Students Experience Their Favorite Flow Activities

Fourth Grade Boy: *Hi-Q*

Because it looked hard and it took me a long time to get it done and it was the first game I played in the Key School.

Fifth Grade Girl: *Bingo*

It has lots of skill to it. When you have a chance to talk to others that you haven't talked to in a long time.

Fifth Grade Boy: *Sweet Valley High*

Sweet Valley High is my favorite because you get to be a girl. The best thing I like about SUH is changing boyfriends.

Fourth Grade Girl: *Trivial Pursuit*

Trivial Pursuit is a neat game. I like it because its a challenge to see if you can get the questions right; also, to see if you can get all the colored triangles in.

Fourth Grade Boy: *Trouble*

I like it because you have to do lots of things in this game, and I like playing against somebody.

Fourth Grade Girl: *Othello*

Othello is easy to play but hard to beat. It takes a long time to play but keeps your attention.

Sixth Grade Girl: *Labyrinth*

Because its different and it makes you think about what you're doing. It can take more than one person. You can control it yourself. You can make the ball do what you want it to. When you win you can keep on going. When it falls in the hole it can come right back out by itself.

Table 6

HOW OFTEN DO CHILDREN EXPERIENCE FLOW
IN MAJOR KEY SCHOOL SETTINGS?
Some Comparisons With the Child's Favorite Activity

Flow Measure	FAV	CLASS	POD	FLOWR	TV
FEEL SAD	1.25	2.36***	1.49*	1.44*	1.75***
FEEL HAPPY	3.70	2.22***	3.38**	3.52	3.10***
WISH NOT STOP	3.41	1.81***	2.83***	3.48	2.90**
TIME DRAGS	1.57	2.90***	1.95*	1.54	2.10***
INTERESTED	3.70	2.23***	3.25***	3.50*	3.08***
WORRIED	1.39	2.22***	1.54	1.25	1.51
DOING WELL	3.79	2.87***	3.52	3.44	3.16***
IN CONTROL	3.62	2.21***	3.23*	3.41	3.20**
CLEAR GOALS	3.80	3.08***	3.61	3.77	3.56
FEEL BORED	1.26	2.72***	1.61**	1.31	2.02***
CHALLENGING	2.80	2.74	2.60	2.87	1.62***
DON'T CARE	1.43	2.08***	1.54	1.48	1.98***
FEEL POSITIVE	3.56	2.46***	3.22*	3.43	3.40
FEEL NEGATIVE	1.39	2.46***	1.48	1.41	1.88

(* p < .05) (** p < .01) (*** p < .001)

Note: Mean values in chart are calculated from responses to the following four-point scale:

1 = Almost Never
2 = Sometimes
3 = Often
4 = Almost Always

Table 7

HOW STRONGLY RELATED ARE FLOW MEASURES IN FAVORITE ACTIVITY TO THE SAME MEASURES IN OTHER ACTIVITY SETTINGS?
A Correlational Comparison (N=60)

	Corresponding Flow Measure			
Favorite Activity Flow Measure	CLASS	POD	FLOWR	TV
FEEL SAD	02	17	33**	23
FEEL HAPPY	20	28*	33**	48***
WISH NOT STOP	-09	41***	47***	13
TIME DRAGS	-13	32*	42***	48***
INTERESTED	-12	38**	50***	47***
WORRIED	14	40**	12	26*
DOING WELL	23	20	27*	06
IN CONTROL	19	05	10	14
CLEAR GOALS	12	01	28*	-01
FEEL BORED	09	12	05	14
CHALLENGING	12	38**	45***	33**
DON'T CARE	34**	53***	90***	36**
FEEL POSITIVE	-05	44***	53***	13
FEEL NEGATIVE	07	61***	51***	39***

(* p < .05) (** p < .01) (*** p < .001)

Note: Mean values in chart are calculated from responses to the following four-point scale:

1 = Almost Never
2 = Sometimes
3 = Often
4 = Almost Always

Table 8

HOW STRONGLY RELATED ARE FLOW MEASURES IN CLASSROOM TO THE SAME MEASURES IN OTHER ACTIVITY SETTINGS?
A Correlational Comparison (N=60)

	Corresponding Flow Measure			
Classroom Flow Measure	FAV	POD	FLOWR	TV
FEEL SAD	02	11	-10	01
FEEL HAPPY	20	-24	12	-03
WISH NOT STOP	-09	-30*	-07	-13
TIME DRAGS	-13	-20	-14	-20
INTERESTED	-12	03	-01	-08
WORRIED	14	-14	-09	-16
DOING WELL	23	29*	20	-01
IN CONTROL	19	20	11	-16
CLEAR GOALS	12	12	31*	-09
FEEL BORED	09	-01	-23	-03
CHALLENGING	12	18	30*	19
DON'T CARE	34**	28*	27*	-01
FEEL POSITIVE	23	-03	-03	05
FEEL NEGATIVE	07	-11	-01	-18

(* $p < .05$) (** $p < .01$) (*** $p < .001$)

Note: Mean values in chart are calculated from responses to the following four-point scale:

1 = Almost Never
2 = Sometimes
3 = Often
4 = Almost Always

Figure 1

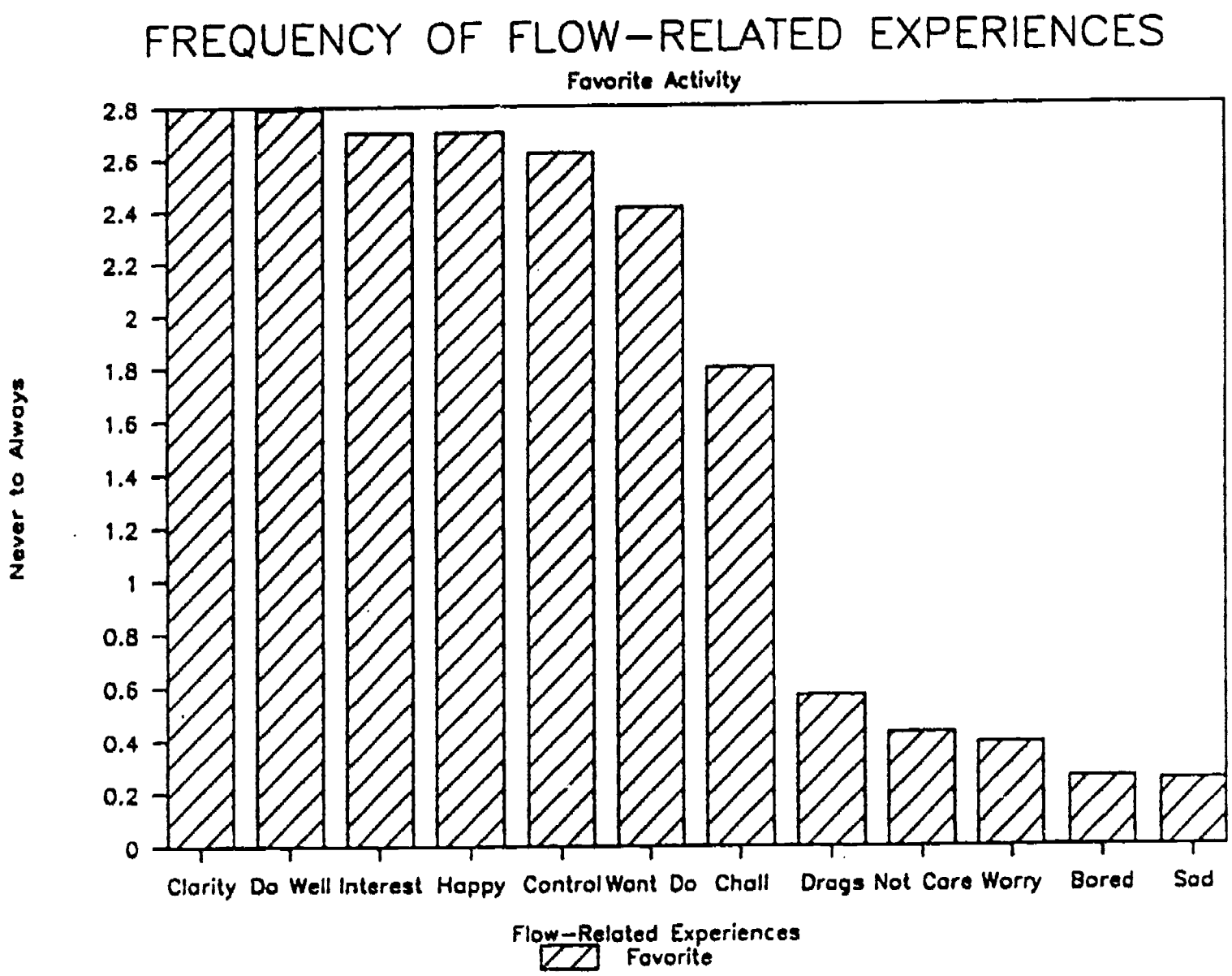

FREQUENCY OF FLOW-RELATED EXPERIENCES
Favorite Activity
Never to Always
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Clarity
Do Well
Interest
Happy
Control
Want Do
Chall
Drags
Not Care
Worry
Bored
Sad
Flow-Related Experiences
Favorite

Figure 2

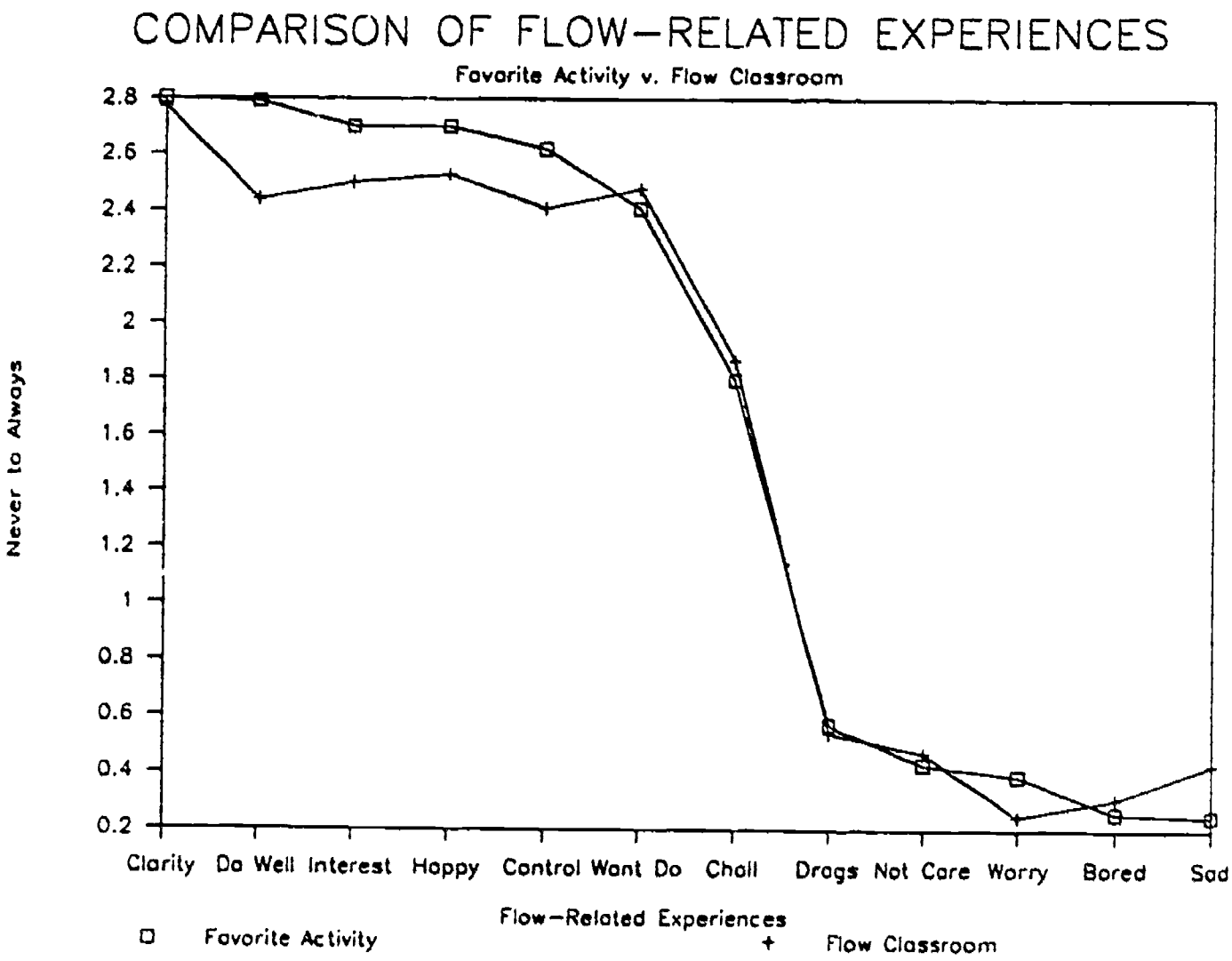

COMPARISON OF FLOW–RELATED EXPERIENCES
Favorite Activity v. Flow Classroom
Never to Always
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
Clarity
Do Well
Interest
Happy
Control
Want Do
Chall
Drags
Not Care
Worry
Bored
Sad
Flow–Related Experiences
Favorite Activity
Flow Classroom

Figure 3

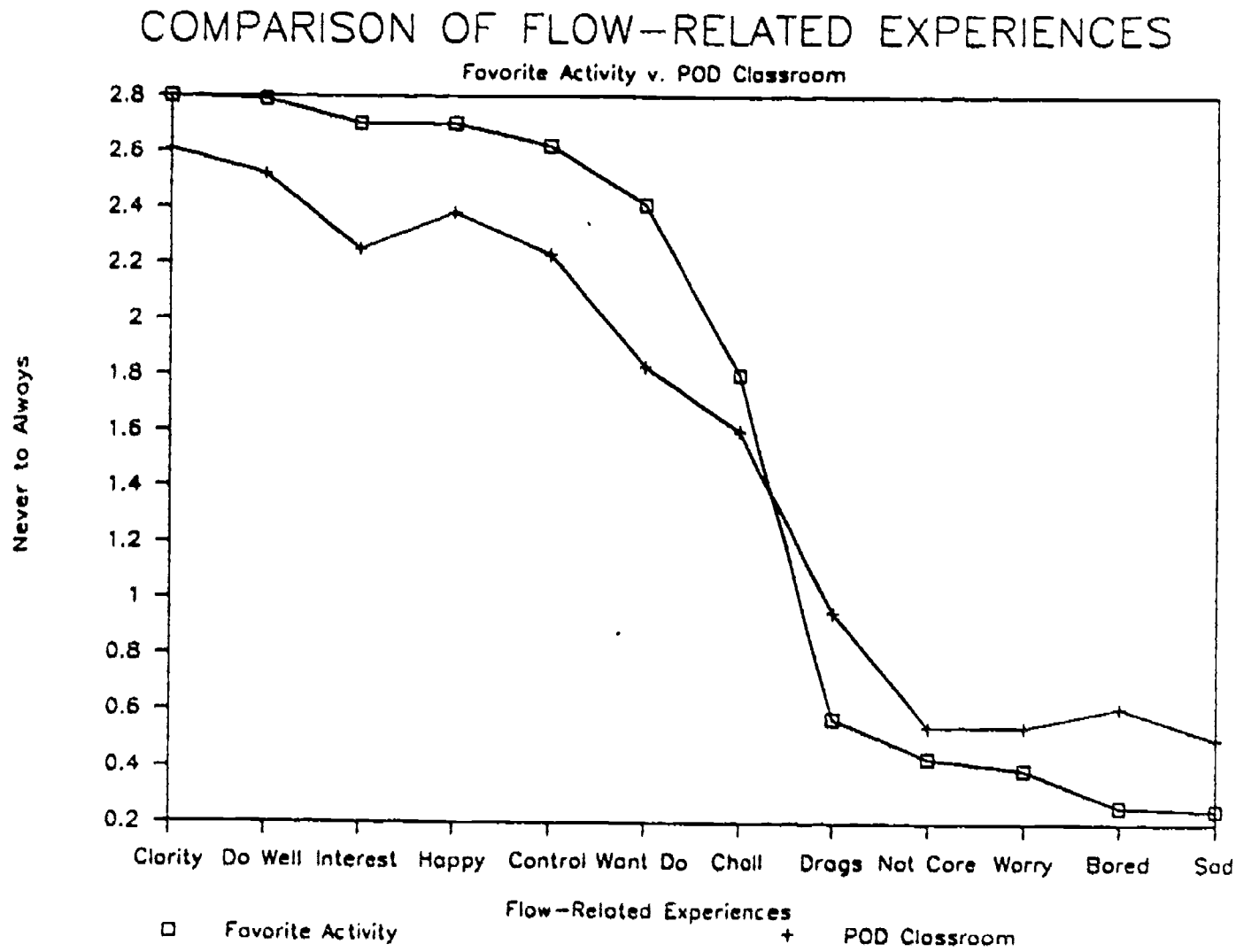

COMPARISON OF FLOW-RELATED EXPERIENCES
Favorite Activity v. POD Classroom
Never to Always
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
Clarity
Do Well
Interest
Happy
Control
Want Do
Chall
Drags
Not Care
Worry
Bored
Sad
Flow-Related Experiences
Favorite Activity
POD Classroom

Figure 4

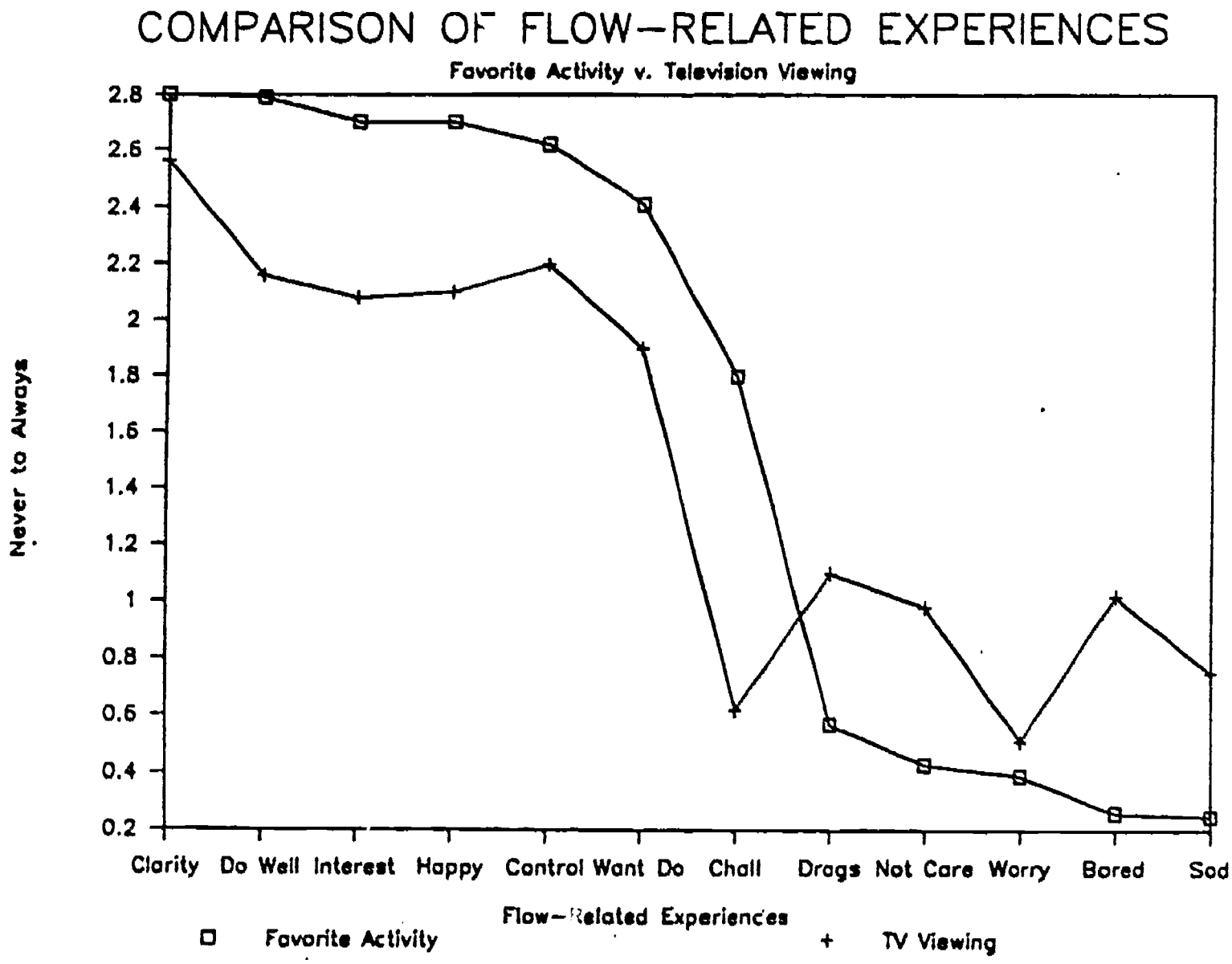

COMPARISON OF FLOW-RELATED EXPERIENCES
Favorite Activity v. Television Viewing
Never to Always
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
Clarity
Do Well
Interest
Happy
Control
Want Do
Chall
Drags
Not Care
Worry
Bored
Sad
Flow-Related Experiences
Favorite Activity
TV Viewing

Figure 5

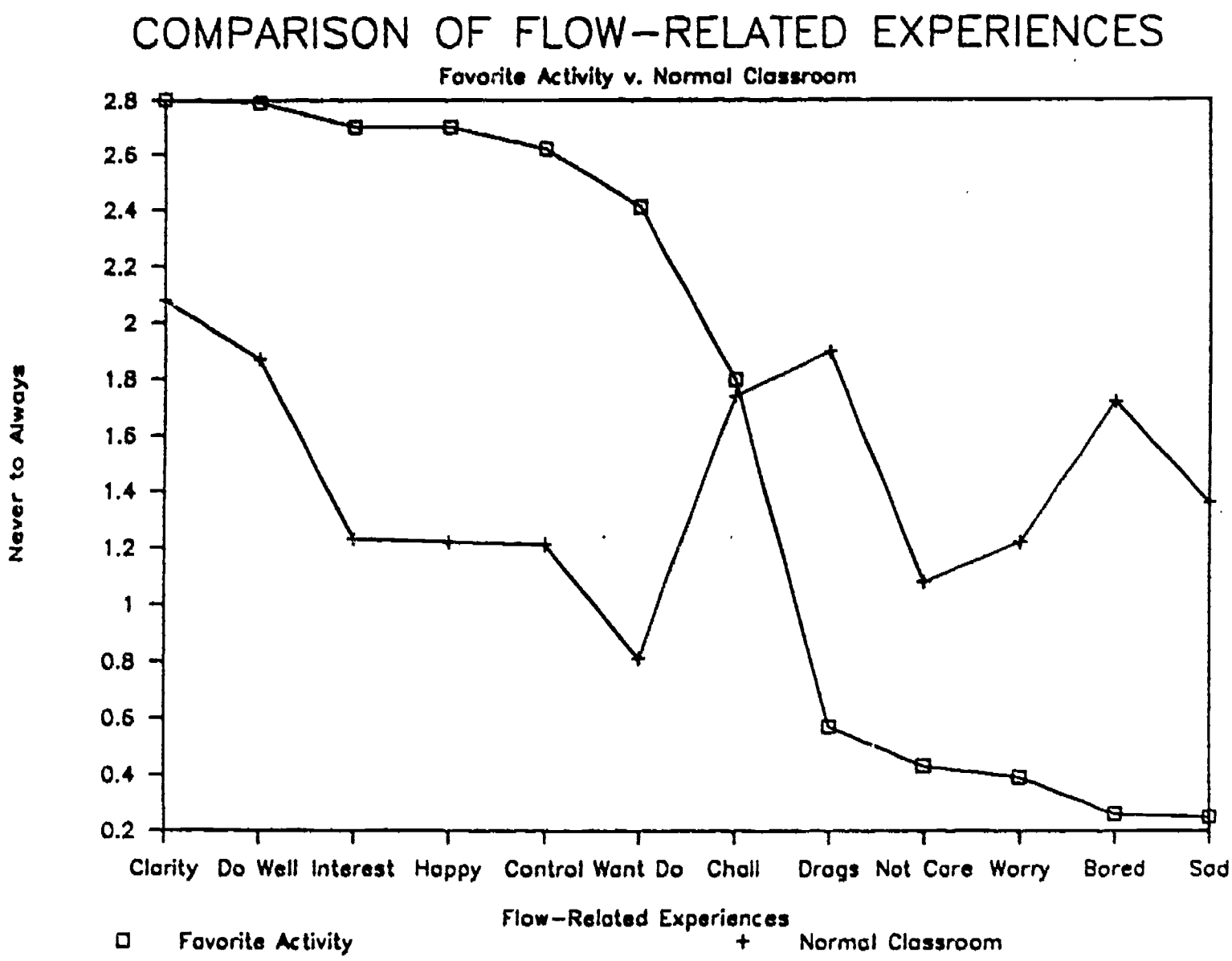

COMPARISON OF FLOW-RELATED EXPERIENCES
Favorite Activity v. Normal Classroom
Never to Always
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
Clarity
Do Well
Interest
Happy
Control
Want Do
Chall
Drags
Not Care
Worry
Bored
Sad
Flow-Related Experiences
Favorite Activity
Normal Classroom

Figure 6

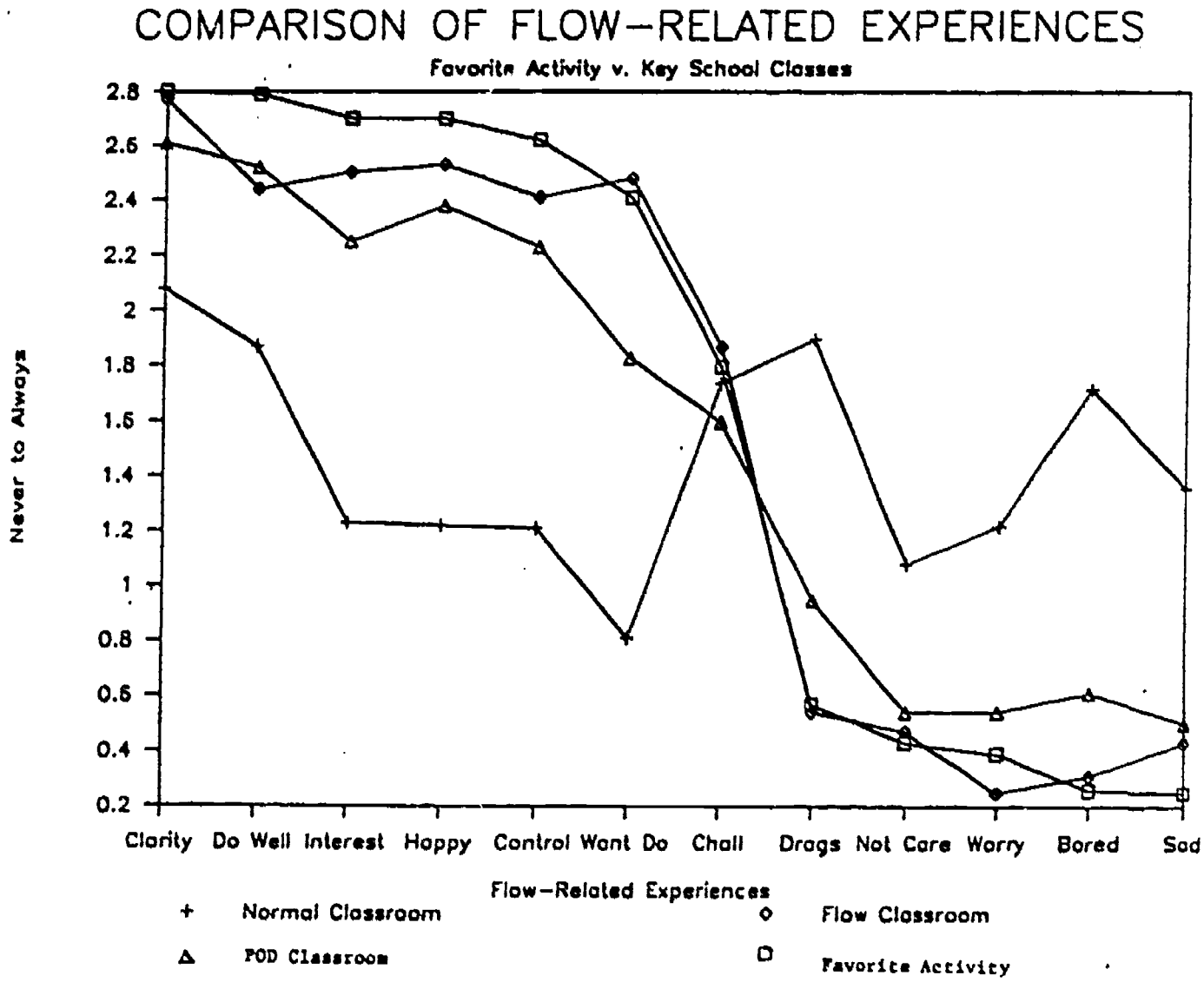
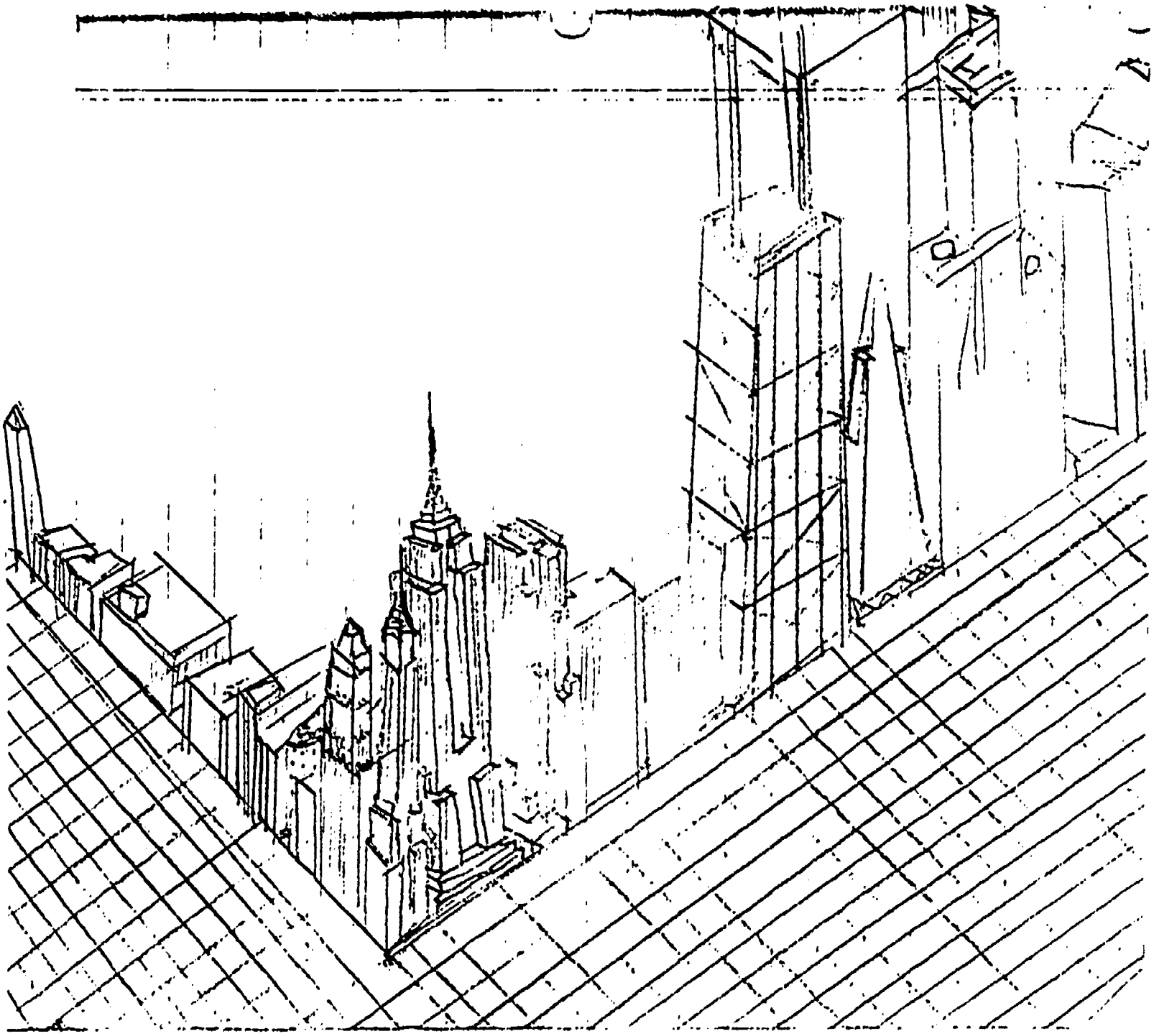

COMPARISON OF FLOW-RELATED EXPERIENCES
Favorite Activity v. Key School Classes
Never to Always
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
Clarity
Do Well
Interest
Happy
Control
Want Do
Chall
Drags
Not Care
Worry
Bored
Sad
Flow-Related Experiences
+ Normal Classroom
◇ Flow Classroom
△ POD Classroom
□ Favorite Activity

Figure 7
Example of Josh's
Flow Room Drawings



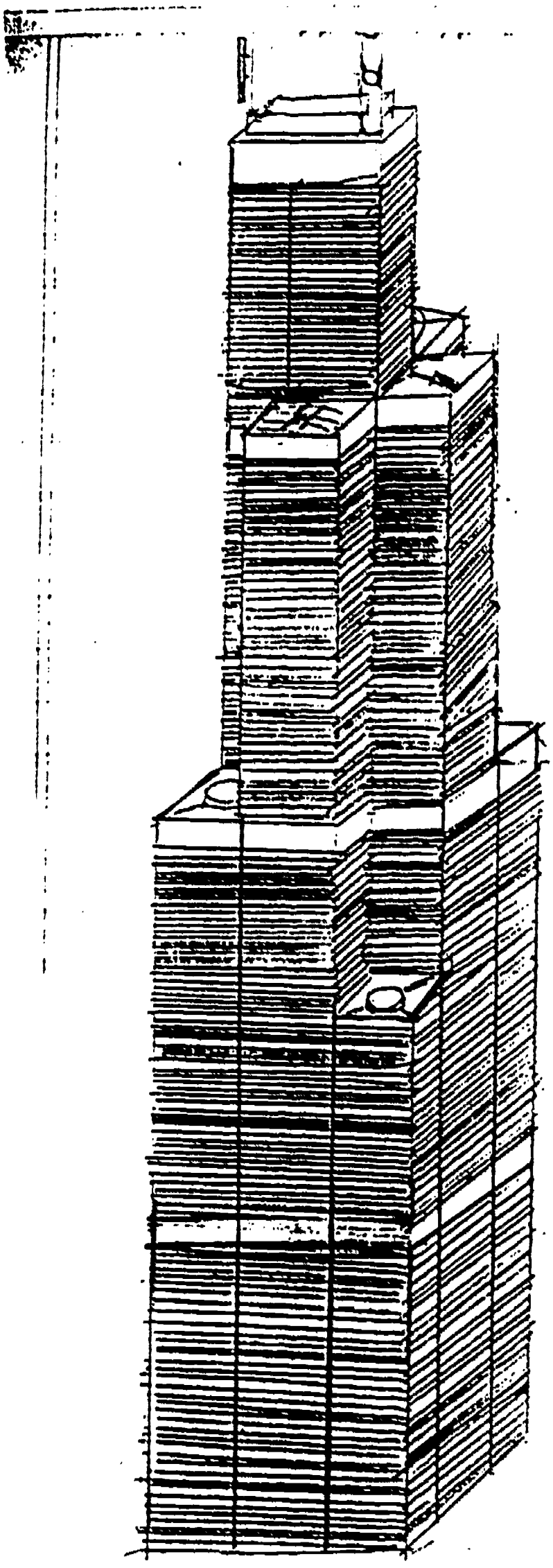


Figure 8
Example of Josh's Flow Room Drawings

Figure 9
Example of Josh's
Flow Room Drawings

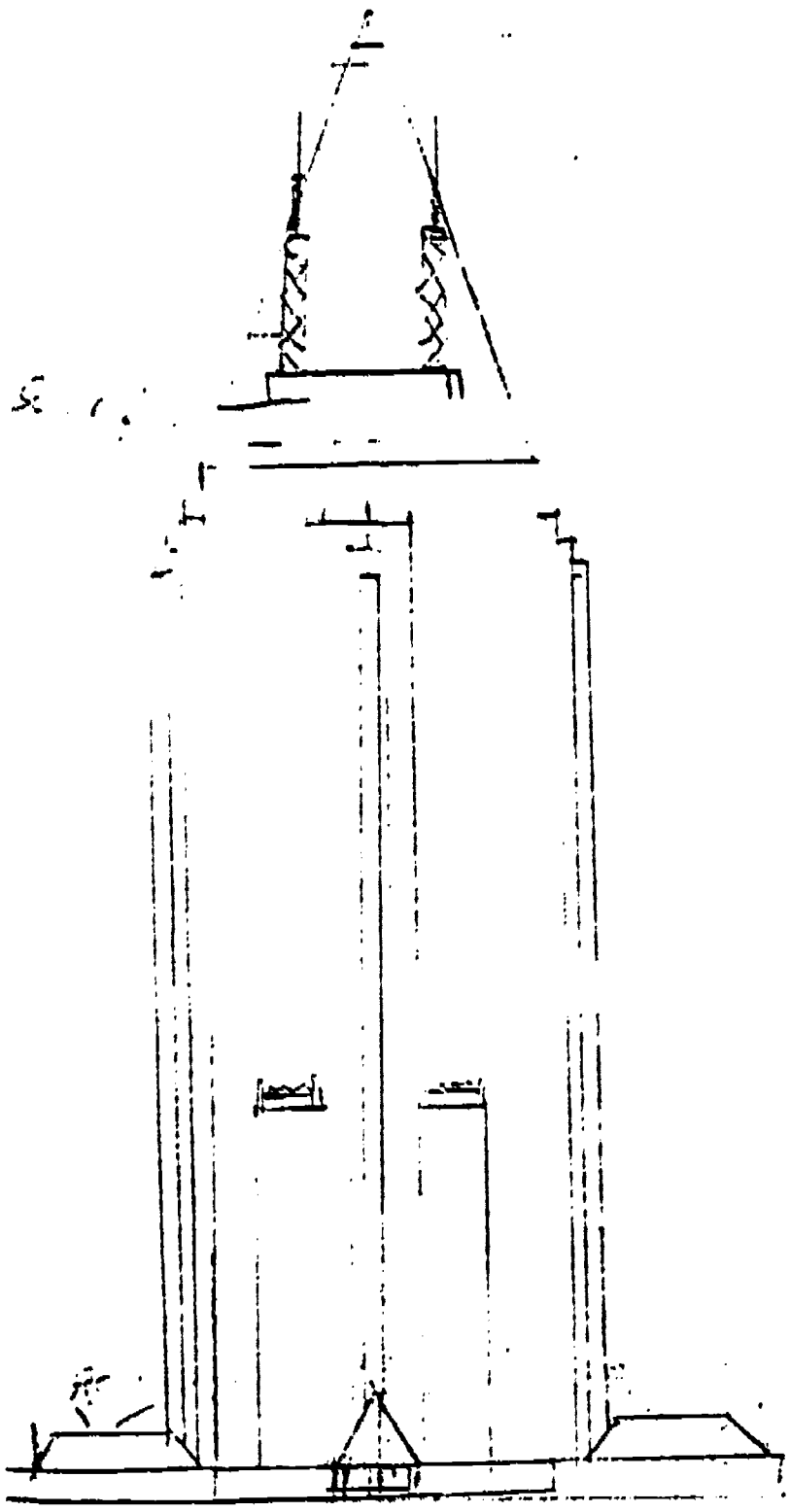


Figure 10
Example of Josh's Flow Room Drawings

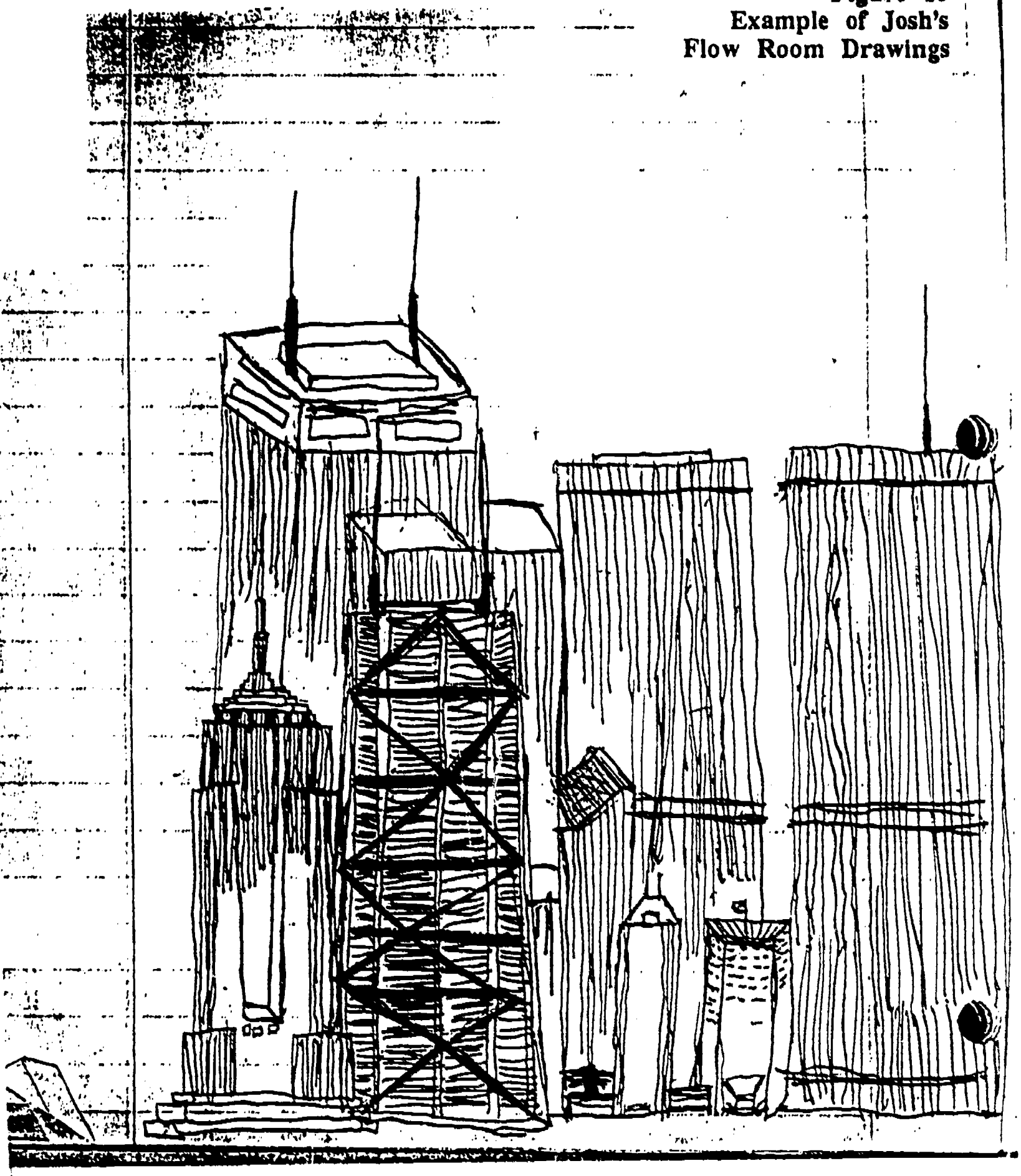


Figure 11
Example of Ivan's Flow Room Drawings

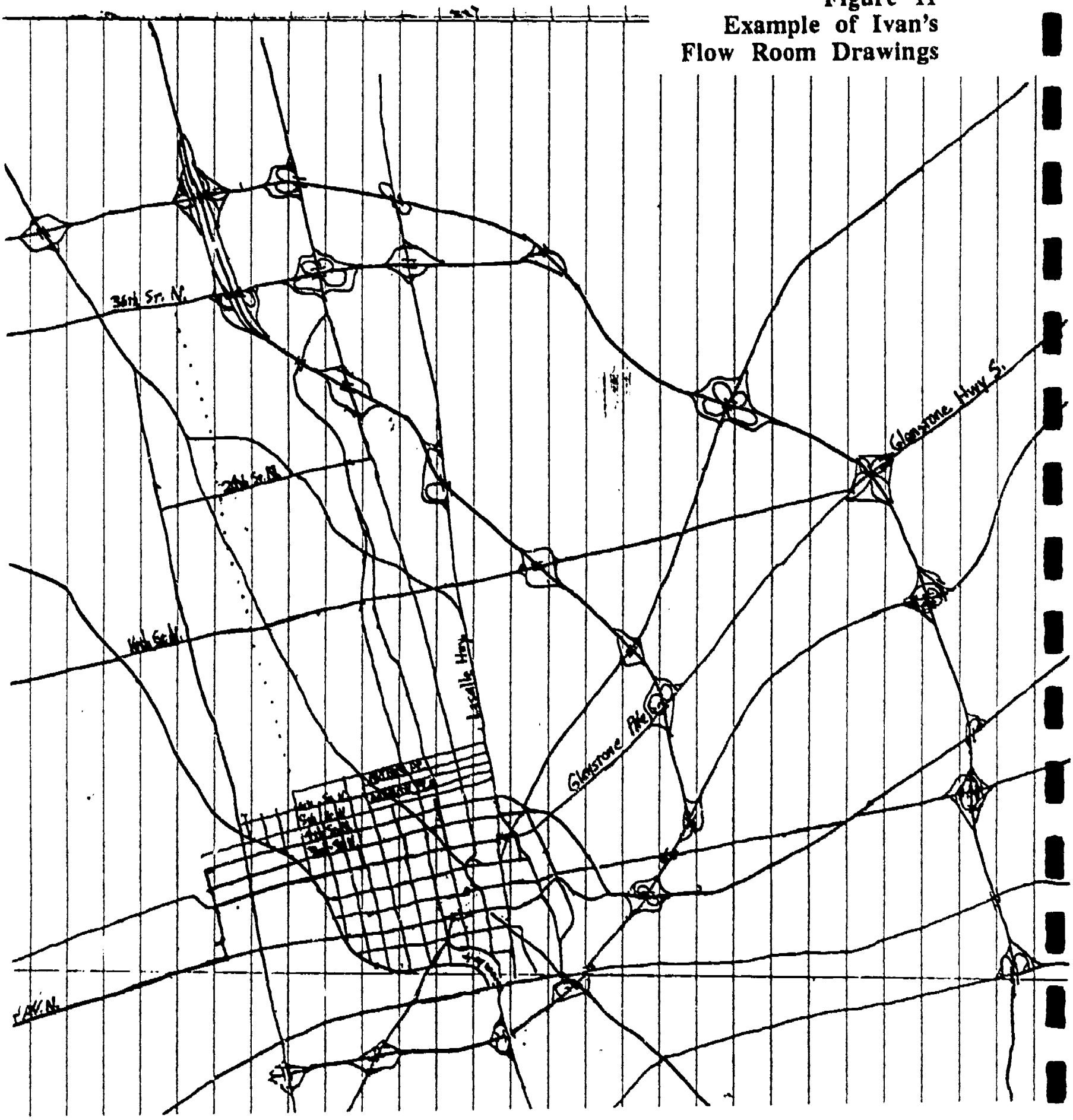
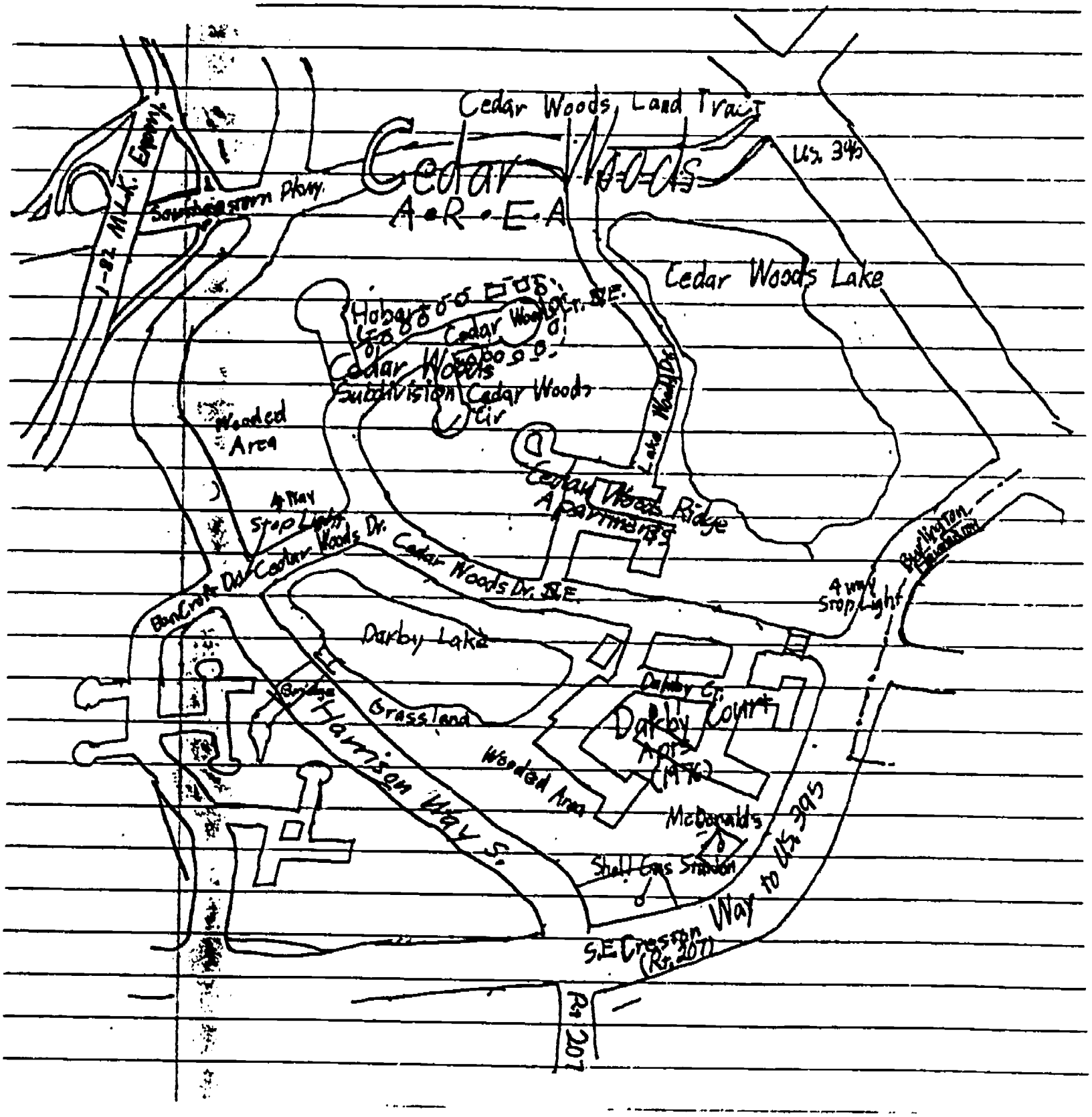
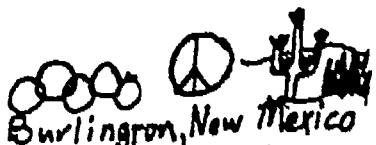


Figure 12
Example of Ivan's
Flow Room Drawings





Burlington City Almanac
1990-91

Figure 13
Example of Ivan's
Flow Room Drawings

Population: 193,480 (1986 E) City Manager: Joseph Logan (Term ends June 1990)
Population Municipal Area: 210,880 Assn't City Manager: Marian St. James (Term ends June 1991)

Sources of Communication and Utilites
Pacific Bell @ Dyer \ Hayden
Electric, Hamilton Water Co. Municipal
Water, and Sunbelt Gas Authority
Sunbelt Communications.

Recration: 41 parks, 63 playgrounds, 28 swimming pools, the arts, and summer programs for all ages. 19 sites for peace olympics.

Number of T.V. stations: 7
Number of Radio stations: 12

T.V. stations
WLKY (fox) Burlington
WCLA (C.B.S.) Burlington
(Sunbelt communications) Burlington
WYNZ (N.B.C.) Burlington / Las Cruses
WNKY (Privately Owned) Burlington / Las Cruses
WBLY (P.B.S.) Burlington
WSKL (A.B.C.) Burlington

Industry: Procter & Gamble (Western Division), Heinz Inc. (Western Division), and 19 business parks, and 68 other business (larger c.

Area/Size of City: 296 sq mi, 104 neighborhoods (subdivisions) Harrison Ave divides east and west, and California Bl. divides north and South.

Transportation
Sunbelt Transit Authority Inc. (bus service)
fare is 55 all the time
transfers .05, and yearly passes are $35.00
3 trucking firms, Norfolk Western, and Conrail, and Burlington Northern, and a series of navigatable waterways, also a industral and pubilc transport system under construction. Scheduled Completion 1990 (Dec)

Figure 14
Example of Ivan's
Flow Room Drawings

Burlington Land Tracts and Zip Codes
1990 - 91

First Three Digits

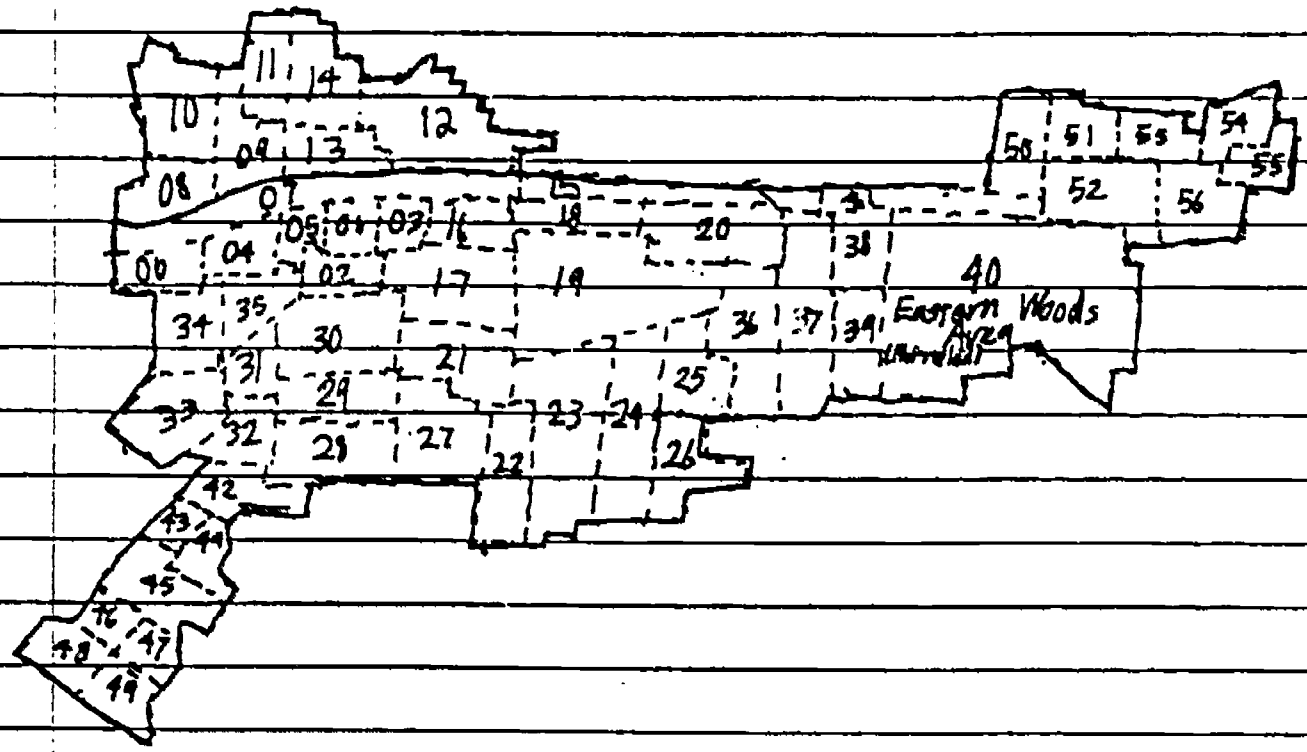


Figure 15
Example of Ivan's
Flow Room Drawings

Tall Buildings in Burlington, Utah

	stories	feet
1. Utah State Bank	24	499
2. Jefferson National Insurance	22	480
3. American United Life of Utah	19	471
4. Marketplace Tower of Burlington	20	466
5. Cadillac City Relators	17	439
6. Century 21 real estate	15	420
7. Graves Relators	16	411
8. Haas Publishing Companies	16	409
9. Nabisco Tower	14	397
10. Hyatt Regency Hotel of Burlington	13	385
11. Omni-Taylor Hotel	12	364
12. Holiday Inn Downtown	11	361
13. Young Corporate Square	9	350

Figure 16
Example of Ivan's
Flow Room Drawings

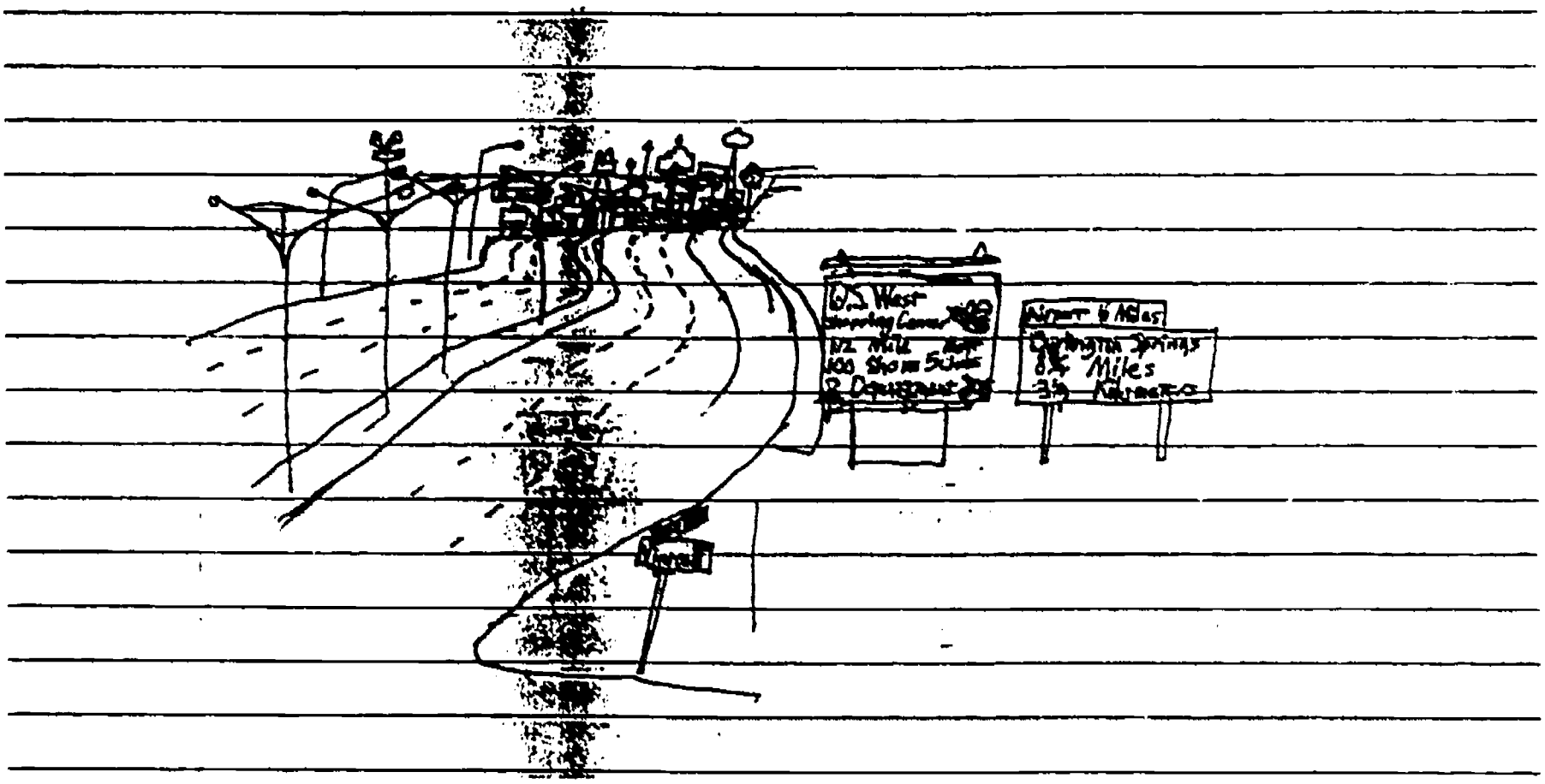
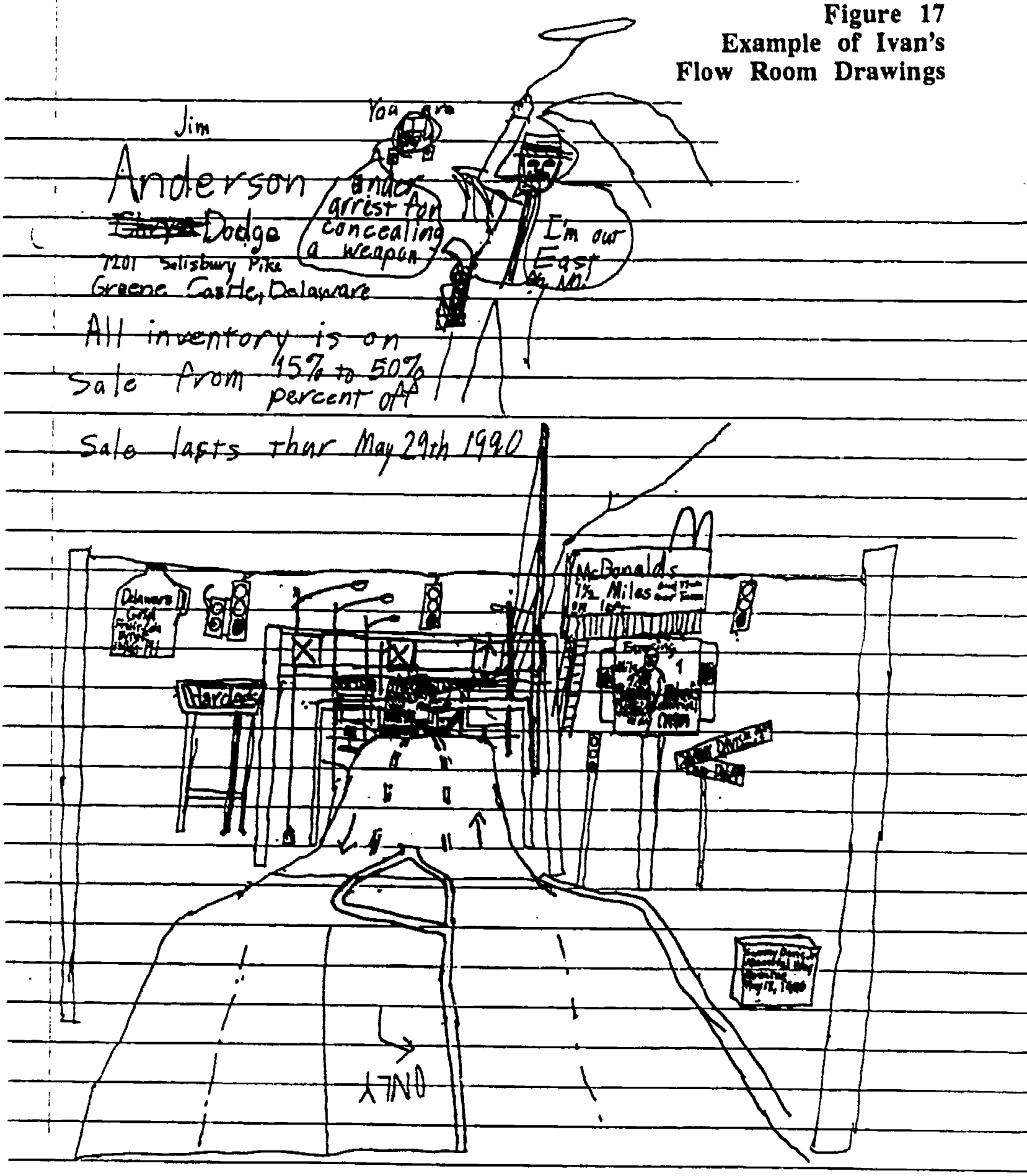


Figure 17
Example of Ivan's
Flow Room Drawings



Appendix A (page 1)

GUIDE TO THE DEVELOPMENT
OF
THE FLOW ACTIVITY CENTER

The Flow Activicy Center is designed to offer students selected activities in each of the seven intelligences, which are: Spatial, Linguistic, Logical-Mathematical, Bodily-Kinesthetic, Musical, Interpersonal, and Intrapersonal. In the center we hope to insure full participation, full enjoyment and maximum learning benefits and to show that manipulative objects, games, puzzles, etc. are important learning tools.

Children in all cultures depend on sight, sound, and hands-on experiences for learning. When all the intelligences are working well, learning experiences are facilitated and deepened. The opportunity to learn through all of these intelligences is vital for the development of all students.

The Flow Center is organized to provide a semi-structured type of free-play where puzzles, games, and manipulative objects are used by the students to explore in various ways. Being able to explore, with the least amount of restrictions, is an incredible morale and confidence builder, especially for those students who are withdrawn and non-expressive. The activities in the Flow Center give a student confidence in himself/herself as an independent person. After having solved some of the problems involved in the activities of the center, he/she acquires some certainty of his/her problem-solving skills. These skills include: visualizing the problem, organizing the sequence of steps to solve the problem, formulating the plan, moving through the plan, making connections and corrections on the way, and thus

Appendix A (page 2)

resolving the problem.

During the "Flow" period even though it is semi-structured, students should be in complete control of their actions, having a sense of freedom, but aware of his/her actions and not of the awareness itself.

- Flow occurs when the tasks are within one's ability to perform. Enjoyable activities, no matter how different or how many times they use the same activity, provide a common experience. Each child learns--at times he/she may learn little that is new--but he/she reinforces information that is partially assimilated into the learning bank. When a student gains a tiny piece of information, he/she benefits from it.

The benefits, skills, and developments we hope the students will gain from the Flow Center are: self-motivation, self-testing, self-confidence, experimentation, problem-solving, planning, sequencing, listening skills, ability to follow rules, memorization, rapid recall, integration of thought and action (quick reaction to directions) imagination, manipulative imagery, and the ability to bring relaxation under conscious control.

All activities in the Flow Center are categorized according to the seven intelligences. This is an example of an activity.

ACTIVITY Puzzle Tiles

INTELLIGENCE Spatial

SKILLS (1) sequencing, organizing, problem-solving and creating, (2) attention, concentration, and memory, (3) space relationships (shape and color), position, small space judging and discrimination,

Appendix A (page 3)

(4) seeing significant parts within a whole, and

(5) relaxation

DESCRIPTION Puzzle Tiles are different shapes and colors of tile pieces that are used to build different patterns and designs. There are examples the students can copy by placing tiles on the designs given or they can create their own designs. The fascination lies in the variety of ways they can make patterns. Students can obtain much entertainment by inventing and creating new patterns. The example gives a general idea of how we hope to incorporate activities and skills so that students are in a learning environment and experiencing a sense of relaxation at the time.

In the Flow Activity segment of Key School, we hope to create a relaxed atmosphere to free the mind so that students can learn and become productive thinkers. Our interest is to also stimulate and contribute to the intellectual growth of the students.

Appendix B

Sample Pages From Flow Room Activities Questionnaire (May, 1989)

Name:_____

Age:_____ Grade:_____

Of all the things in your life that you do, what is your very favorite?

What are your favorite games or activities in the Flow Activities Room?

most favorite _____
second favorite _____
third favorite _____

Below are feelings that you might have every day. We want you to decide how often you feel these ways in five different situations: while doing your favorite activity; while watching TV; while in your pod; while in your regular classroom; while in the Flow Activities Room. Here is an example:

I feel sad

	almost never	sometimes	often	almost always
doing my favorite thing				
watching TV				
in my pod				
in my classroom				
in the Flow Room				

Appendix B (continued)

Sample Pages From Flow Room Activities Questionnaire (May, 1989)

I feel happy

	almost never	sometimes	often	almost always
doing my favorite thing	☹	☹	☹	☹
watching TV	☹	☹	☹	☹
in my pod	☹	☹	☹	☹
in my classroom	☹	☹	☹	☹
in the Flow Room	☹	☹	☹	☹

I wish I didn't have to stop

	almost never	sometimes	often	almost always
doing my favorite thing	☹	☹	☹	☹
watching TV	☹	☹	☹	☹
in my pod	☹	☹	☹	☹
in my classroom	☹	☹	☹	☹
in the Flow Room	☹	☹	☹	☹

Time drags

	almost never	sometimes	often	almost always
doing my favorite thing	☐	☐	☐	☐
watching TV	☐	☐	☐	☐
in my pod	☐	☐	☐	☐
in my classroom	☐	☐	☐	☐
in the Flow Room	☐	☐	☐	☐

Appendix C

12 ITEMS INCLUDED ON FLOW QUESTIONNAIRE KEY SCHOOL/SPRING 1989

ITEM	ABBREVIATION
I Feel Sad	Sad
I Feel Happy	Happy
I Wish I Didn't Have to Stop	Want Do
Time Drags	Drags
This Is Really Interesting!	Interest
I Feel Worried	Worry
I'm Doing This Really Well!	Do Well
I Feel In Control	Control
I Know What I'm Supposed to Do	Clarity
I Get Bored	Bored
This Is Challenging!	Chall
I Don't Care	Not Care