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INTRODUCTION

This thesis is concerned with evaluating the impact of a five-day workshop on Design Education. The purpose of this evaluation is to assess four main aspects of the workshop, the participants' recollection of the event, the aspects they consider the most successful, the aspects they consider the least successful, and the extent to which the workshop effected changes or new developments in the programs they teach.

The workshop was held at Queen's University, Kingston, in August, 1972, and was sponsored by the National Design Council. Forty-one designers, architects, artists and teacher educators from across Canada took part.

The evaluation is based on answers to a questionnaire sent to the participants three years after the event. The thesis also includes background to the workshop, the conceptual basis of the program, and an account of the event.

BACKGROUND TO THE EVENT

The National Design Council is an advisory body to the Federal Government and it has the responsibility of promoting, supporting and developing "good" design in Canada. In recent years the Council has recognized the importance of design education in achieving this, and has allocated funds to assist in establishing objectives in design education and to promote and encourage design programs.

Their first undertaking was to invite a number of educators to write papers on the subject. These were published in a volume titled A Preliminary Framework for Industrial Design Education (Ferrabee, Note 1). This volume was principally concerned with design programs at the college and university level, but it also included a section on programs for elementary and secondary schools. The Council believes that it is at this level that design programs should start, so that all Canadians can develop a greater appreciation of excellence in product and environmental design. The Council also hopes, in this way, to provide students wishing to enter the design profession with a good start. The rationale for such programs has been explained more fully in The McGill Journal of Education and Investigart (Ferrabee, 1973).

After publishing the volume, the Council was interested in obtaining a reaction to the ideas and suggestions it contained. It decided to start with design programs for the elementary school level and the writer was asked to visit each province and discuss the concepts with educators in governments, colleges and universities.

The interest shown during this trip encouraged the National Design Council to hold a two day seminar on Design Education at the Elementary Level. Fifty delegates from universities, governments and schools across Canada attended this seminar. A report summarizing the event is available from the Council (Ferrabee, Note 2). Those who attended the seminar stressed the value it had in providing an opportunity for interdisciplinary exchanges on a national level, and suggested that the Council continue to initiate programs that would help to stimulate and support design programs.

The following year the Council decided that their limited funds could be used most effectively in a workshop for professors of teacher education. This workshop was planned jointly by the writer, who was then consultant to the National Design Council and by Trevor Hodgson of Queen's University.

After the experience of the previous seminar it was decided that lectures and discussions were not a very effective way of giving non-designers an understanding of the value of the type of program being proposed. The Council therefore approved a plan for the workshop which would stimulate teacher educators from different disciplines to work together on design projects they initiated themselves from the consideration of a specific environment.

This approach was a considerable departure from anything the Council had undertaken before. Previously, their conferences, workshops and seminars had used a more conventional lecture-discussion format and had not required participants to become involved in design projects of their own.

In planning the workshop, particular attention was given to three main factors: the participants, the environments they would work in, and the program of events.

Many of the participants had been at the earlier seminar or came to the workshop because they had heard about it. The workshop was attended by representatives from eighteen universities and colleges including at least one from each province and from four French-speaking institutions. An effort was made to have more than one participant from each region, but from different disciplines, so that they could continue to work together after the workshop. One third of the teacher educators attending were art educators, the remainder were from the disciplines of mathematics, physics, sociology, outdoor education, industrial arts, music, drama and educational psychology. A few architects, designers and artists, some from University Departments of Architecture, Environmental Design or the Fine Arts also participated. Those attending the workshop differed widely in abilities, backgrounds, ages and vocations, but they shared an interest in an interdisciplinary, discovery approach to learning. All those attending were to participate equally in the workshop so that everyone could observe different methods and approaches to designing, while developing their own, and everyone could contribute their own particular expertise.

The program of events was planned to help participants to feel comfortable while also being sufficiently stimulated to become fully involved in design projects of their own. To help participants settle in, the first morning provided a conventional format with speakers

describing existing, broadly based design programs for schools or teacher education programs. The speakers selected were all teaching in Canada, as it was considered important to support programs already existing in the country rather than calling upon experts from other countries where the problems, structures and conditions would be different. These speakers were also to participate fully in the workshop. During the first afternoon and evening an exploratory program was planned, with the professor of Outdoor Education and Personal Growth at Queen's University, to help participants develop a rapport amongst themselves.

After this introductory day, participants would spent three days involving themselves in their own design projects. It was anticipated that during the first day they would acquaint themselves with the environment in which they were going to work, and identify an area to study. During the second day they would pursue this study, and on the third day they would design a vehicle through which to explain what they had been doing to the other participants. This vehicle could take many different forms, such as an exhibit, a display, a video tape, or a piece of music or drama. The short duration of the workshop made it impossible to undertake a more comprehensive product or environmental design project. Finally on the last morning participants would be able to discuss the workshop and the approach to design education which it exemplified.

As one of the objectives of the workshop was to demonstrate that different environments stimulate different design problems and solutions, participants had a choice of three locations, the City of Kingston, a rural location or Queen's University. The group at the University would have access to a laboratory, an art room and a small

theatre workshop. Their projects would be developed from the exploration of specific materials. The group who chose the City of Kingston would have the city environment and its resources to call upon, and the group who located in the rural area would have the farm buildings, the farm land and wooded areas. All the groups had access to audio visual equipment, polaroid cameras, tape recorders and video tape recorders, to record their projects and to help them develop their presentations.

As participants were going to be required to initiate their own ideas and projects, particular attention was given to providing stimulation and direction through the environment, the structure of the events and the resources provided by the people themselves. A balance was sought between providing direction and allowing freedom of choice.

DEVELOPMENT OF THE CONCEPTUAL BASIS

Brief Account of the Development of Design Programs in Schools

In 1919, the architect Walter Gropius became director of the State Bauhaus in Germany and started the first school of Industrial Design. In this school he attempted to bridge the division between artists, whose work is exhibited in museums and galleries, and designers, craftsmen and architects whose work has a utalitarian function as well as an aesthetic aspect. The machine had become a major factor in the production of items for daily use and at the Bauhaus artists and craftsmen joined forces for the first time to educate students who would be able to design products of a high aesthetic value for machine production (Bauhaus, 1957). The Bauhaus was disbanded in 1933 by the Nazi party, and its faculty and students dispersed. Many went on to teach in the recently formed schools of Industrial Design, located in art colleges, universities and engineering institutes in Western Europe and particularly in the United States. They brought with them the teaching methods of the Bauhaus so that the Bauhaus, although short-lived, had a far reaching effect on the development of the Industrial Design profession.

In the second half of this century, the division between the pure and applied arts was further reduced when many artists rejected the tradition of painting canvasses to be hung on walls and sculptures to stand on pedestals. In 1966 Bruno Munari, an artist who has become a designer,

explains, in Design as Art, that the artist is returning to a desire to create for everyone not just the chosen few. He writes that "anyone who uses a properly designed object feels the presence of an artist who has worked for him, bettering his living conditions and encouraging him to develop his taste and sense of beauty" (Munari, 1966, p. 26). Munari adds that the better designed a product is, the more it will sell. This is a re-statement of the Bauhaus ideals, but many designers have had to accept that this is not true. The products designed in the studios of the artist-designers find their way into expensive boutiques where they are ignored by the majority of consumers who shop in large department stores and discount houses.

Today the first concern of many designers is to identify a real need before designing a product, and then rationalizing all aspects related to its production and distribution. In his lively book Design for the Real World, the designer-educator Victor Papanek (1972) speaks up for those designers who are concerned with identifying what really needs to be made, and finding ways of making it without negatively affecting the social and natural environment. He gives examples of practical solutions to problems that urgently need to be solved, such as a device for making irrigation pipes, or a simple nine dollar educational TV set that can be mass produced or produced by hand.

Concern for the over-production of unnecessary products has led designers to design products that are disposable, miniaturized or concealed, and to think in terms of systems rather than products. For example, suction-based, built-in cleaning systems would be used to replace vacuum cleaners, brooms, dustpans, mops and all the cleaning paraphernalia that

goes with them. In an effort to prevent the mindless destruction of the environment, designers are forming teams with architects, engineers, scientists, technologists, sociologists, psychologists, and other disciplines to tackle environmental planning problems on an unprecedented scale (Ferabee, 1970).

Many designers have become more concerned with their impact on, and responsibility for, the social and physical environment, than with the design of aesthetically pleasing products.

This concern has been partly responsible for a few designers and educators becoming involved in design programs at the public school level where they hope to familiarize a large number of students with the ideals and methodologies of designers. There are very few design programs in Canadian schools, but in England programs are well established and design is a high school certificate subject. Some programs stress visual literacy (Rowland, 1965), while others also introduce students to problem solving methods and to product design (Baynes, 1969; Green, 1974). In most of these courses the instructor defines the problem to be solved, the method to be used in solving it, and the product to be designed. Students are seldom given the opportunity to initiate their own projects and the assignments usually require the design of a product for mass production. However, most students will never be professional designers and, if designing is a relevant activity for them, it must be because it is a self-actualizing experience which helps the individual student or the group to identify and attain their own objectives; to develop their own way of working as a group, and to evolve their own individual methods of creatively solving problems.

In 1973 the writer undertook a study of design programs for student teachers of general education in England and Sweden. In England the writer found one program which represented a departure from the dominant approach to Design Education. In describing this program in an article in Design Education, M.J. Laxton and P. Bridge (1972, pp. 21-35) note that the design process in most programs is presented as a carefully planned series of operations to be followed in a linear sequence, and so designing becomes just another set of rules. In their article, Laxton and Bridge take a somewhat contrary position. They suggest that, although some students do respond to the formality of this type of structured process, many find difficulty in relating to it, while others reject it, and these may well be the students that are most likely to develop the independence of thought that is essential for a designer. In developing their design programs they emphasize the fact that ideas come from people, not methods; that ideas are as much a product of feeling as thinking; that individuals have their own legitimate ways of working; and that these are more valuable, and provide a more fertile ground for the development of ideas than the growing doctrine of a formalized design process. Laxton and Bridge describe four design projects undertaken by their students. The first three projects reflect the more widely practised design approach in which the parameters of the project are given to the student, who is told what is required and how to do it. These projects were: to design a standard section table; to design a pedal-driven vehicle for children 4 to 8 years of age which should take into account the production facilities available at a given factory, and incorporate standard units currently being employed at the plant: and to

design a device for holding and dispensing a standard toilet roll, using concealed fixings, and giving special consideration to ease of removal. The preparations were to include a detailed analysis of the problem, design solutions in sketch form, a finalized solution and the necessary mock-ups, and a full-scale working drawing on tracing paper. The fourth project was a departure. There was no problem, only a focus and stimulus. The focus in this instance was the face. Laxton and Bridge (1972) give the following description of this project:

> The first two days were spent drawing each other, examining the structure of the skull and the differences in individual features. We talked at length of the importance of the face; its power of expression and progression, its survival, protection, and ornament. Though certain areas such as protection, ornament and opportunity to alter identity were suggested for exploration, no briefs were given or problems stipulated. Confused at first by this degree of freedom and absence of direction, many students were uneasy. In most of these cases their own drawings provided an anchor and starting point for development. By looking afresh, suggestions came, additions were made and new possibilities seen.
>
> Gradually students decided on their own course of examination, some going for a functional requirement, such as a welding mark, others saw possibilities in ornament and facial jewellery. Another group used a piece of music to provide a context for drama...
>
> The face project was successful in fact not so much for the artifacts it produced, but for the liberating effect it had on many students. More than one student discovered talents and strengths he had long ignored or thought unattainable.
>
> In the last project the presence of a formal design process was obscure and for most students irrelevant. Yet the work was by far the most imaginative and vivid of the four projects discussed. It would, however, be wrong and irresponsible to suggest that these same students had received no benefit from a "design process" - they had, but it had been integrated and dissolved into "their way of working".
>
> The reason for putting down these comments has not been to devaluate the merit of the design process, but to expose the freedom students must have in order to relate to it (Laxton and Bridge, 1972, p. 33).

In this last project, students were free to develop their own projects and were restrained only by the area to which they were relating, in this case, the face. The project and the design methods to be used were not set by the teachers, instead the students were encouraged to develop their own. The result was that the students' designs for this project were far more vital and imaginative than those which they produced when they were given exact criteria to follow. In conversation Michael Laxton also mentioned that the students were more demonstrative in experimenting with materials and acquiring the skills they needed to make their designs.

Part of the success of this assignment can be attributed to the fact that students were developing a product closely related to an aspect of self. Seonaid M. Robertson, author of Rosegarden and Labyrinth: A Study in Art Education (1963) is a potter and a lecturer in education at Goldsmith's College, London, where Laxton and Bridge teach. When discussing design education, Michael Laxton emphasized the enormous contribution Seonaid Robertson had made to his understanding of the process of designing and to the development of his programs, particularly the one on masks. In art programs the word design is used to refer to the study of line, form and color. This limited point of view has also been accepted in design programs as the art component; but as Seonaid Robertson suggests, the art component relevant to the act of designing extends beyond visual literacy into the area of non-verbal, non-linear, emotional and sensory intelligence, and as an art teacher she is primarily concerned with the expression of an individual through the art media.

In designing, as much attention must be given to the social and physical circumstances connected with the product as to the product itself. In Stockholm, Sweden, the writer observed a vigorous environmental design option in the Art Education department of Konstfackskolan. In this program, students identified environmental design problems in the city. Then, having defined some need, perhaps for a playground or a safe crossing, and having worked with local residents and design professionals to develop a solution, they lobbied for its acceptance and finally they helped to build it.

Educational Rationale for Design Programs in Schools

The National Design Council workshop in Kingston was based on an approach to Design Education that would stress the extent to which we affect and are affected by our social and physical environment; the desirability of having individuals and groups identifying and solving their own design problems (with help and guidance from design educators and design professionals): the extent to which designing is an expression of an individual or group; the importance of considering the needs of the community and the environment in design solutions; and the importance of using the expertise of many different disciplines in formulating a design solution to a problem, and thus stressing the interdisciplinary nature of the design process.

In recent years, many design professionals, psychologists and educators have included these ideas in their approach to learning and teaching. A plea for collaboration between the design professions and the behavioral sciences is made by city planner Constance Perin in her

book, With Man in Mind: An Interdisciplinary Prospectus for Environmental Design (1970). Robert Preusser, Associate Professor of Visual Design at M.I.T., has given a course in Visual Design Problems to undergraduate science and engineering students since 1957. His aim has been to increase the visual awareness of science-orientated students and to provide insight into the nature of creativity through the art experience. A major premise of this educational venture is that developments in art and science affect the substance of both, and that bridging these disciplines challenges intellectual, perceptual and creative attainment (M.I.T., Note 3). In his book, To Understand is to Invent, the psychologist and educator Jean Piaget (1973, pp. 29-30) recommends an interdisciplinary approach to education.

Richard Jones in his book, Fantasy and Feeling in Education (1968), provides the most precise framework within which to consider the value of design education to the intellectual and emotional development of an individual. In discussing the possibility of a complete theory of instruction he states that the objective of instruction is to develop imagination, plus community, plus mastery, which produces creative learning, and the ability to solve problems effectively. This is perhaps more easily understood by considering the polar opposite which he defines as "imagination plus aloneness plus helplessness which produces anxiety which may have to be released by psychotherapy" (Jones, 1968, p. 77).

Design projects offer an opportunity to develop imagination, mastery and a sense of community. The imagination is engaged in finding creative possibilities for solving a problem or achieving an objective.

The design itself is realized by mastering and applying whatever skills are required. Designing helps to develop a sense of community because it requires the contribution of a number of different disciplines and is directed towards improving the living circumstances of oneself and others. Therefore in order to be able to design it is necessary to develop the ability to work with other people.

In designing a new product or project, it is frequently necessary to use skills, tools or materials in an unconventional way or to devise new ones. Designers must, therefore, be capable of the self-directed mastery of skills. In their book, Understanding Children's Play, authors Hartley, Frank and Goldenson (1952, Chap. VI) have documented the stages which a child follows when he is free to explore clay, or any other medium, in his own way. The authors substantiate the importance of allowing children to learn in this way so that they gain confidence in their ability to explore and master their own environment. First the child will handle, feel and perhaps even smell and taste the clay. He will then try to make impressions on it. At this stage that alone is what gives pleasure and satisfaction to the child. At the third stage, something that happens during the earlier exploration will suggest an object to the child and will be used as such in his play - a shape becomes a car, for example. It is only at the fourth stage that the child will start to conceptualize an object in his mind and then make it with the tools, materials and processes he now thoroughly understands. Through this process the child learns to formulate goals for himself which he has developed the competency to attain. Unfortunately many teachers direct

a child to start at the fourth stage. This deprives the child of the opportunity to develop confidence in his own ability to learn to explore and master materials. By providing the child with a goal before he has had time to develop his own, and to acquire the skills to achieve it, leaves him vulnerable to frustration. In reaction, he may well give up, lose interest or develop patterns for pleasing the teacher at the expense of his own involvement.

Designers are familiar with the need to "play" with materials and tools in order to discover and explore their possibilities. Jean Piaget (1973, pp. 103-104) also supports the need for beginning formal education with real and material action, rather than language, drawings and fictional or animated action. He states that programmed instruction is conducive to learning but by no means to inventing (Piaget, 1973, p. 7). He emphasizes that teachers should cease to be lecturers satisfied with transmitting ready-made solutions and become mentors who stimulate and initiate research (Piaget, 1973, p. 16). Piaget claims that a student who achieves a certain knowledge through free investigation and spontaneous effort will later retain it. He will have acquired a methodology that will serve him for the rest of his life, and which will stimulate his curiosity. At the very least, instead of having memory take priority over reasoning power, or subjugating his mind to exercises imposed from outside, he will have learned to make his reason function by himself and will build his own ideas (Piaget, 1973, p. 93).

Robert Sommer (1972), a psychologist who has worked on design teams, emphasizes the importance of allowing children to effect and

manipulate not only tools and materials, but their entire environment. He comments that when adult rules require children to remain passive in regard to their surroundings - forbidding them to arrange their classrooms or playgrounds - these same children are not likely to take an active problem-solving stance toward their home or offices when they are adults (Sommer, 1972, p. 35).

Children who are involved in design programs can learn to develop their creative, problem-solving ability. In designing projects they learn to investigate materials, tools, techniques, ideas and possibilities; they learn to question and evaluate existing ways of doing things and to imagine and evaluate alternatives; they learn to probe into how things are made, how they behave, how they interact and how they relate. In this way, they learn to develop the competencies they need to effect the design of their environment.

In 1954 Gilford identified the necessity for what he described as divergent thinking in creative problem solving. This is the ability to generate many solutions to a problem and to select through evaluation, rather than concentrating on developing one correct idea. Since then, many programs have been developed which are directed towards improving the ability to think divergently in solving problems; some are contained in the books of Sidney Parness (1967), W. Gordon (1961), or Edward de Bono (1967). However, as these programs depend on the manipulation of mental processes, rather than on an investigation of the environment, they can become superficial exercises. In design programs, children learn to develop divergent thinking patterns as they solve problems related to the design of their environment.

—Robert E. Ornstein (1975, pp. 67-68) offers further support for programs in design, as well as other programs which do not depend primarily on a linear. verbal mode of expression. In his book, Psychology of Consciousness, he suggests that different types of functioning are appropriated to each hemisphere of the brain, although recognizing that this is not a watertight division. He suggests that the left hemisphere, which is connected to the right side of the body, is predominately involved with logical, analytic thinking, especially in verbal and mathematical functions, and that it processes information sequentially. The right hemisphere is more holistic and relational. It is more simaltaneous in its mode of operation and can integrate many inputs at once. This hemisphere is primarily responsible for our orientation in space and is particularly important for creative and artistic endeavours. Ornstein (1975, p. 83) states that a complete human consciousness involves the development and integration of the two modes.

The concept is based on the results of several research projects. Precise neuropsychological studies undertaken by Brenda Milner and her associates at McGill University in Montreal have correlated disorders in specific functions with certain parts of the brain (Milner, 1965, 1971). A lobotomy of the right temporal lobe severely impairs the performance of visual and tactile maizes, whereas speech impairment seems to result from lesions in the rear, left, temporal lobe. At the California College of Medicine, Drs. Vogel and Bogen (Gazzaniga, 1967; Sperry, 1964) undertook radical treatment for severe cases of epilepsy in which they severed the connections between the two cerebral hemispheres of the brain in the hope

that when the patient had a seizure in one hemisphere the other would not be affected, and the patient could therefore take the necessary medication or contact the hospital. In spite of the radical nature of the surgery, these patients showed almost no effects in their day-to-day living. However, Roger Sperry and his associates (Sperry, 1964; Gazzaniga, 1967), whose work on animals provided the inspiration for this surgery, developed many subtle tests for pinpointing the effects of the surgery which clearly identify the functions which are appropriated to the different hemispheres. For example, if a patient felt a hidden pencil with his right hand, he could immediately identify it verbally. If he felt it with his left hand, he could not identify it verbally at all. If, however, he was shown the pencil among a group of objects, he could pick it out with left hand. Professor Sperry often shows a film clip of a right hand failing to solve a problem which is a test of spatial mentation where upon the patient's left hand shows the right hand how to do it.

Most of the work children undertake in school is directed towards developing the logical analytic and verbal qualities appropriated to the left hemisphere. This is not balanced by programs directed toward developing the holistic, relational, creative, artistic functions of the right hemisphere.

A design program can be a vehicle for developing and integrating both these modes of mind. In the initial stages, the conceptualizing requires creative, spatial thinking (although some analytic thought is also necessary); during the implementation stage the left hemisphere's skills of precise, sequential thought predominate; when the project is complete it is appreciated mainly by the right hemisphere which

guides the perception of space and can process information simultaneously.

In my experience, many of the children that do well in programs in which they design and build for themselves in an openly structured workshop program seem to be those that fare less well in academic, classroom studies. It is not necessarily that the students are inept at the linear thought patterns required for academic work, but that they seem to lead from spatial ones. They are only able to express an idea sequentially, after they have explored it in a more free-ranging spatial context; a context in which they can explore at random rather than from a fixed starting point. It is a way of letting the environment, the people and the materials express themselves to you, and allowing an interest or concern to emerge from this conversation. These students may also be the ones who find it more difficult to generate ideas in a purely abstract form, especially if they have to sit still at a desk. They need to be more physically involved, to be able to move around, to get what they need, to see and feel the consequences of their actions, and to make their own deductions. This is also true of the way many designers work.

Design teams tend to be self-organizing, and to acknowledge different qualities and types of leadership during various phases of a project. One of the objectives of the workshop was to provide participants with an experience in establishing both individual and group objectives and projects, and in influencing the direction of the workshop (although not in formulating the overall objectives). Piaget (1973) supports the importance of free collaboration among individuals, claiming that no real intellectual activity in the form of experimental and spontaneous investigations can be carried out without it (Piaget, 1973,

pp. 108-109). He states that the traditional school recognizes only the social exchange that is connected with a teacher, who is a kind of absolute ruler in control of moral and intellectual truth. Collaboration among the students and even direct communication among them are thus excluded from classwork and homework (because of the examination atmosphere and the grades to be met). He recommends alternating between individual work and work in groups, stressing that collective living has been shown to be essential to the full development of the personality in all its facets (Piaget, 1973, p. 109). Piaget also comments that there exists a possibility of renewal in a social atmosphere formed of "affection and freedom, that is to say not of obedience, but of responsibility freely assumed" (Piaget, 1973, p. 111).

Support for the Workshop Program

The plan for the workshop was based on the premise that it is helpful to be taught in the same way you are expected to teach. Support for this comes from Eleanor Duckworth, a student of Piaget's, who has applied his work in a classroom context (Duckworth, 1973, p. 270). She comments that teachers should learn the same way that the children in their classes will be learning so that they will know what it feels like. As the workshop was suggesting an approach to design education which emphasized the importance of allowing students to choose their own design projects and develop their own solutions, participants were given the same task. This approach gave them much less direction than is usual in workshop or teaching programs. Some resistance and uncertainty could therefore be expected on the part of the participants, even though they had

accepted the value of the approach intellectually. Seonaid Robertson (1963) has commented on the difficulty of initiating programs in which teachers relinquish their traditional roles. While developing programs to investigate the potency of certain themes, she had suggested a minimum of direction on the part of the teacher, so that the theme itself could be given full scope. For this reason her teachers agreed to give encouragement only, and not specific suggestions or criticisms of the work in progress. In spite of accepting this agreement, several of the teachers were distressed by the apparent passivity of their role. They felt it was their job to help improve the children's work. They had not fully grasped that this help might best consist of providing an encouraging and sympathetic atmosphere, and by asking questions which would enable children to visualize more clearly the image they sought. She remarks that the formulation of such questions, both in the introduction to the whole class and to the individual child at his precise phase of clarification, is one of the most delicate and subtle exercises in the art of teaching. The rapid adjustment required, as one moves from one child to the next, and enters into the spirit and direction of his work is far from being passive (Robertson, 1963, p. 36).

Another teacher who has commented on a similar resistance to the use of a teaching method which does not rely on strong direction imposed by the teacher is Dr. M.L.J. Abercrombie. Before becoming a Reader in Architectural Education, and Director of the Architectural Research Unit at the Barlett School of Architecture, University College, London, Dr. Abercrombie spent some years lecturing in Zoology. She also undertook research on space perception in cerebral palsied children in the Anatomy

Department of University College, London, and in the Pediatric Research Unit of Guy's Hospital. Her book, Anatomy of Judgement (Abercrombie, 1952), describes a teaching approach which she developed over a ten year period. When she found that medical students who satisfied high school graduation requirements in the sciences were not necessarily using scientific ways of thinking to solve problems presented in a slightly new way, she developed a discussion technique of teaching in which the student learns by comparing his observation with those of ten or so of his peers. In this approach more attention is paid to the process than in traditional methods. A student compares not only the results obtained by each student, but also how they arrived at the results and what other possibilities they considered, so that the range of factors taken into consideration was much wider than is usual in didactic teaching. The course also demonstrated to the student that his perception of the external world was modified by his involvement in it. The aim of the program was to make it possible for the student to relinquish the security of thinking in well-defined channels provided by a teacher and to find a new kind of stability based on the recognition and acceptance of ambiguity, uncertainty and free choice. Instead of seeing their mistakes in contrast to the statements of an unquestioned authority, as in the traditional pupil-teacher relationship, they would see a variety of interpretations of the same stimulus pattern, and would test the usefulness of each in its own right and in a given context (Abercrombie, 1952, p. 62). Dr. Abercrombie emphasized that, in school, the pressure of the examination system has been such that students tend to regard a teacher as one who supplies "facts" and a teacher who does not do this may be resented. Some students were quite

bewildered by Dr. Abercrombie's program and claimed that they were not learning anything at all. They suggested that she must be conducting the course for her own good, since she obviously was not doing it for theirs, and that she was researching and not teaching. They were unable to entertain the idea that it might be possible to do both at the same time (Abercrombie, 1952, p. 133).

In a paper, On Not Being Frightened When Teaching, Richard M. Jones (1971, pp. 37-40) also identifies the value of learning while you are teaching. He points out the fact that students seem somehow to learn something from their own experiences when their teacher is learning from his. It seems that the teacher, having learned something, somehow either frees or causes students to learn something too. This may or may not be directly relevant to what the teacher learned.

The workshop at Kingston was structured so that all the participants would both learn and teach. In undertaking a design project in interdisciplinary groups they would communicate an essential part of their own disciplines while absorbing aspects of other disciplines. In order to achieve this interaction, participants would need to feel comfortable with each other. Robert Sommer (1972) has commented on the need to detach people from their tendency to pass quick, stereotyped judgements on other people and situations with which they are not familiar if they are to respond creatively and flexibly to a new situation. He has suggested that, in order to create a problem solving stance toward the environment, it is frequently necessary to remove familiar ways of experiencing things, and that this can be done by the use of various sensory modification devices such as role playing, simulation games and blind walks (Sommer, 1972, p. 40).

He adds that artists have long used sensory turn-on devices to break stereo-types and perceptual sets. In his experience, this sort of active participation stimulated participants to work in teams without any formal plan or organization. As this confirmed the writer's experience, an informal afternoon providing some programs of this type was included in the workshop.

In summary, the conceptual basis of the workshop was an inter-disciplinary, community-based approach to design education in which students develop their own projects, and an approach to teacher education in which teachers are taught by the methods they are expected to use in teaching.

ACCOUNT OF THE EVENT

This account is based on the experience and observations of the author, and on conversations with those who were there. The author visited the different groups and also undertook a project.

Introductory Activities

People started arriving on Sunday. Those who came early were introduced to the game of GRIPS by an architect from the Université de Montréal (Levy, Talbot, Warshaw, Note 4). The game was spread out on the carpet and the players gathered around. As other people arrived they informally joined the group as spectators.

GRIPS is a series of four games aimed at increasing a player's understanding of the design process, systems theory, and the factors that contribute to the genesis, identification and structuring of problems. It is a long game and was played on several evenings during the workshop. In the first game, Holistic Modelling, players as a group develop a global model encompassing all the elements and relationships that may affect human life. In the second game, Role Playing, participants people this model with different kinds of individuals. A role is developed by each player who must then interact, within the model, in accordance with the personality he or she has assumed. In the third game, Problem Gathering, trigger words help players to develop ideas drawn from the global model.

They then seek relationships between each other's ideas, with the view to identifying problems that may be of interest to two or more players. The development of these ideas may be impeded by an unexpected crisis. In the fourth game, Problem Picturing, players explore any problem with the aim of developing a strategy for its solution.

This helped participants, most of whom had not met before, to become acquainted in an informal way, while also introducing them to the subject matter of the workshop.

The workshop started officially on Monday morning with presentations given by three participants. It was considered important in this workshop to acknowledge the expertise of those attending and not to bring in outside experts to lecture to the visitors, as had been done before.

The first presentation was given jointly by an art educator, and a professor of social studies, who had worked together on some programs. In describing and presenting slides of their projects they were able to point out some of the benefits and difficulties they had encountered, and to provide a rationale for interdisciplinary programs undertaken in the community. The second presentation was given by an educator who teaches art to elementary and secondary school student teachers, who are in most cases majoring in one of the sciences. His presentation described how students were able to relate their scientific background to their explorations in art, by using creative thinking and problem-solving processes as a common basis. The third presentation was given by an architect who has developed an environmental design program for schools. These talks were intended to provide some background on programs which were being undertaken in Canada and to satisfy any need on the part of those attending

for definitive statements on design education and a familiar conference format.

The first afternoon was spent at the farm connected with the Faculty of Education at Queen's University. Here the professor of Outdoor Education, Personal Growth and Clinical Studies introduced participants to some of the methods and tasks he uses in helping his students gain a greater understanding of themselves, and to increase their sense of personal worth and direction, both as individuals and in their relationships with other people.

After arriving at the farm, we entered the barn and climbed up a rope net, then up a ladder and across a plank, some ten feet above ground level. Finally, we arrived at the main hay loft which was full of apparatus. There were horizontal ladders supported by a single point at each end; a long narrow tunnel which went under the hay for a period of complete darkness before returning to the light; and there were other rails, bars, ladders and ropes. Some thirty feet above us was a horizontal rope with only thin hand ropes on each side (a harness had to be worn for this exercise). In the barn we were asked to attempt an activity at least a little beyond that which we felt confident in accomplishing. In doing this, most of us were faced with at least some degree of fear and excitement. As we became aware of our own reaction we had the opportunity of watching other people coping with their's. Some rushed at their challenges, hoping perhaps to get through them before being overcome by a prolonged confrontation, while others approached them very cautiously. Some gave and accepted help, while others felt the need to face their ordeal alone. This event tended to dissolve people's poses

and protective layers, making them less defensive, more open and more considerate and thoughtful towards each other.

For the second experience, we were asked to form pairs, if possible with a member of the opposite sex that we did not know. One person was blindfolded and led by the other, who would introduce the blind partner to tactile experiences in the environment without using words. The roles were then reversed. It was mentioned that some people might tend to be over-solicitous and protective of their blind partner, while others might have difficulty accepting help. For most people this shared tactile exploration of the environment provided insights into interpersonal communications, and into the way the mind creates visual images from information acquired exclusively from the sense of touch.

After a break for supper, we formed groups of five for the next exercise. Everyone was blindfolded and each group was given two dismantled, component toys which they had to reassemble. In another exercise we formed larger groups and each person was handed a role. In each group the roles were the same. There was a landscape artist; his pregnant wife; a second-year Indian medical student: a good musician; a truck driver; a convict: a fourteen year old boy; an athlete; and a seventy-five year old chemist. We were told that an atom bomb would be dropped; that the bomb shelter could only hold seven people; and that we had twenty minutes to decide which of the group should occupy the shelter. The exercise highlighted our tendency to form stereotype judgements of people based on criteria such as age, sex, race, vocation, religion and economic status.

When this was over, we lay on the carpet and were directed through a number of breathing and relaxation exercises. Finally, before leaving for the University, we sat around and talked quietly or played musical instruments. The professor who had led the evening stressed that normally these exercises, supplemented by others, were spread throughout a semester with plenty of time for discussion between each step.

These activities were provided to help to break down barriers amongst participants by having them concentrate on fundamental human emotions and concerns, such as fear and kindness, the need to achieve a sense of personal contribution within group activities, and the dangers of forming quick, stereotyped judgements. The experience did seem to help participants to become more considerate of one another and to trust each other.

Undertaking a Project

For the next three days, participants became involved in projects of their own on the farm, in the City of Kingston, or at the University. They had been prepared for the fact that they would form groups of their own choosing and would undertake a project relating their discipline to the design of the man-made environment. Seventeen chose to work at the University, fourteen in the City of Kingston and ten at the farm.

There was a host from Queen's University in each of the three locations to provide any help that might be needed but, beyond that, participants were responsible for choosing and becoming involved in their own projects. The host in the urban group did offer some suggestions for

places to visit, but participants did not follow these suggestions. In the materials workshop at the University, the host made an effort to structure the investigation but, again, participants were not receptive. So the hosts participated by offering the help that was requested and, to some extent, by joining in themselves. Although it was easy for participants to recognize the kind of external leadership they did not want, it was not easy for them to develop their own direction. As expected, many of them showed avoidance patterns and anxieties similar to those manifested by students in the same position. Some rushed into a project almost immediately, imposing a pre-conceived idea onto a situation, rather than responding to it and then didn't really like the direction they had taken. Others talked and talked and sat around, finding it hard to get going. Some discussed such subjects as curriculum development with specialists and resource people. With the lack of specific directions, many people found it difficult to know exactly what they were "supposed" to be doing.

In spite of the general discomfort and uncertainty at first, most participants were successful in becoming immersed in projects of their own. Some pursued a project over the two days, some were involved in a different one each day, and some were dissatisfied after the first day, and started something else on the second day.

Those who elected to investigate the City of Kingston received a brief introduction from their host from Queen's (most of the group had never been to Kingston before), and then formed their own small groups before going off to explore. Except for meeting casually in the evening they didn't gather together again until the third day, when they were to

present their projects. Two art educators interviewed children in the streets, parks and shopping centres of Kingston. They asked the children what they thought of their environment and how they would improve it. The children were encouraged to draw their ideas. The educators were surprised at how aware the children were of their surroundings, and how interested and capable they were of formulating alternative solutions. Two art educators and a child psychologist, who were visiting Kingston for the first time, undertook a search for the centre of the City. They soon realized that, when they asked a Kingstonian for the centre of the City, they learned as much about the person as they did about the City. After identifying several centres, they selected one for themselves, and stayed there for forty-eight hours, recording what occurred as they related to their chosen centre; to the environment that surrounded it; to themselves; and to each other. Three industrial art educators put a participant in a wheel chair, and left him to get around on his own, while they observed the difficulties he encountered and the lack of help he received from those passing by. This enabled them to identify some design modifications that could be made to the man-made urban environment which would provide the handicapped with greater possibilities for independence. Other participants observed and recorded specific design and construction events, and an art educator and social studies specialist made a largely visual record of their impressions of the City.

The group that chose to stay in the University was the largest and the most diverse. In addition to science and art educators, this group had the only music and drama educators who were participaring. It was also in this group that the film makers from the Ontario Communications

Authority, who wished to make a film of the workshop, spent most of their time. The focus for this groups was the exploration of materials. Two very different types of materials had been provided - a large and diverse quantity of feathers, and an assorted quantity of rope and string. The group had at its disposal a laboratory, an art room and a small theatre workshop. After an introduction from the host, the visitors started their investigation. It had been suggested that the scientists might first introduce participants to some of the methods they would use to analyze the properties of the materials, but before long the group was splitting up. An art educator and two scientists continued to work together. They constructed a grid on acetate sheets, and mapped the curve of a number of feathers, finding that the ratio of the arcs was more or less constant. They then plotted a parabola in which the arc ratio was expressed as a form that could be reproduced in any material. An art educator did a visual presentation on line, as observed from the magnification of feathers, fur, fibre and filament, recorded by a polaroid camera attached to a microscope. Another art educator experimented with the effect of different liquids on feathers. A scientist and a social studies specialist made a bird that they used as a puppet. An artist, two art educators and the drama and music educators became involved in dramatizing the essence of feathers and string: the strong, joining, binding quality of the string, and the soft, floating, settling, covering quality of the feathers. A group of scientists and artists became involved in measuring the sound of a feather landing. This led to an investigation of sound levels in general and people's awareness of them. An architect joined the group,

and they played Gregorian Chants in the stairwell and corridors so they could listen to the echoes and amplifications produced by different building structures. An additional exploration with a string-like material occurred on the second day when an artist involved this group in crocheting video tape, using their fingers. After a few experimental hats, several people started binding one of the scientists in the video tape. This developed into a small drama in which more and more people were entwined in a large, loose net. The gestures as they moved round to accomplish this were dance-like and everyone was laughing. The net grew bigger, and linked more and more people, until gradually it pulled apart, finally disintegrating totally and freeing the original captive.

The third group at the farm was the smallest and perhaps the least confident about the direction they would take. This may have been because artists and designers are accustomed to exploring and making things with different types of materials, and also to applying their professions in the almost totally man-made urban environment, but they seemed much less confident about their contribution in a rural context. At first the group spent considerable time on the grass talking rather self-consciously. Some people began to get restless. The host suggested certain jobs that needed to be done around the farm if anyone was interested, but otherwise everyone was left to do as they liked. Gradually the group split up as smaller groups or individuals decided on a course of action. Two art educators and a child psychologist went off on a hike. An art educator began making a weaving from materials he found around the farm and was joined by another art educator. One designer undertook a study of a sick animal, which led to considering redesigning

a piece of equipment that would have prevented the sickness. Another designer undertook a study of the shape, size and textures of the fields and outside spaces. Later a large group joined a naturalist and became food gatherers by collecting, preparing and cooking edible wild plants.

As participants gathered for supper at the end of the second day moods varied, but generally people were not at a point where they wanted to talk about their projects. A few had complaints, and a few others had headaches and other signs of tension, but these seemed to disappear during the diversions which were planned for the evening. The game of GRIPS continued while another participant involved people in some of the projects she had done with students, in this instance printing and body painting.

Presenting the Projects

At the end of the third day we gathered again. By now participants had immersed themselves in an environment and undertaken a project or study. On the following day they were to present their projects to each other. During the late afternoon of the third day, we all met informally, on the benches and carpet in the lobby, to plan the next day and a half and how they would like to present their projects. It evolved that most people were really too tired to finish their presentations that night and would like the morning to put them together. It was agreed that by the afternoon they would be ready to show them to each other. Some groups worked late into the night and then took the morning off; others completed their exhibits in the morning. For many participants it was their first experience in putting together an exhibit to communicate their ideas.

The following noon we met again to work out the sequence in which the projects would be presented. The Farm Group was the only one which had worked out their exhibit as a single entity. The Materials and Urban Groups planned their exhibits separately and eventually worked out the order in which they would be viewed. At this stage the workshop was self-organizing to the extent that, once the meeting was called, the group decided how and when they would present their projects.

As was expected, each of the three groups had a distinctly different character.

The Rural Group exhibit started in the outdoor court, where participants were invited to sample a display of edible wild foods. The rest of the exhibit was inside the building. From a central hub visitors could follow colored streamers, each representing the experiences of a member of the group. These included comments and poetic observations made during the hike, the weaving that was made at the farm, and accounts of the other projects.

From there, participants continued down the corridor to the exhibits of the Urban Group. The educators who had interviewed the children had a tape and showed drawings and polaroid photographs. Those who had searched for the centre of the City had photographs, maps, drawings, written comments and a videotape. An architect had done drawings on the effect of buildings on music, and the wheelchair project was described. Other groups had made visual presentations of their experiences in the City.

From this exhibit we followed a series of joined strings and ropes which led us to the first presentation by the Materials Group - the

dramatization on the theme of feathers and string. The scene was set by slides completely covering the back drop, and the group had made a tape of voice sounds to accompany the action. Two of the other participants who had made the bird used it to answer questions. The other members of the group had made a single videotape of all their different investigations.

No formal event had been planned for the final evening as it was intended that participants would develop their own entertainment. Participants gradually gathered in the lobby, which had become their informal meeting place. It had now become more distinctly related to the workshop because the walls and those of the adjacent corridors were covered with presentations. Participants dimmed the lights, moved in a piano, brought beer, played music, sang, danced and talked. They were joined by a high school band from England, who were being billeted at the University for the night. The band gave an impromptu concert and joined the party.

Final Day

Friday morning started with a few more presentations, given informally. An art educator showed a film he had made on design; a designer described a program in which college students had to build their own shelters and live in them for a week in the country during the winter; and another designer showed slides of younger children designing and building their own environments.

Before departing in the afternoon the group assembled again on the carpet and benches in the lobby space. They thanked each other for the experience of working together, discussed ways of keeping in touch,

and developing more programs along the lines of those they had just experienced. One person invited everyone to participate as a group in the next conference of the Canadian Society of Education through Art (CSEA) in Regina the following year.

After the workshop was formally over, participants spent hours discussing the experience in both personal and educational terms. Many said they felt that it had given them a deeper philosophical and human context within which to teach their subject. At a more specific level, educators commented that they had come to understand designing as something more fundamental than the aesthetic consideration of visual characteristics, and the professional designers became more strongly aware of the value of involving a large segment of the educational structure in the design process.

At this time the workshop appeared to have been successful in bringing together designers, artists and teacher educators from different disciplines to work together on projects concerned with the design of the environment, and to design ways of presenting these projects. The purpose of this evaluation is to determine what aspects of the workshop left a lasting impression and whether it was successful in affecting design content in the programs of those who were involved.

METHOD OF EVALUATION

This evaluation of the workshop is based on the answers to a questionnaire which was sent to the forty-one people who fully participated in the workshop (Appendix 1). It was sent to participants in the summer of 1975, three years after the workshop in August, 1972. In the spring of 1976, a second copy was sent to those who did not reply the first time. Twenty-seven questionnaires, 64%, were returned (Appendix II). Of the fourteen who did not answer, four had moved and left no forwarding address.

Those participants who are French speaking received a copy in French and those who are English speaking received their copy in English. The answers received in French have been translated and included with the English.

The questionnaire was divided into two types of questions.

The first ten were general questions providing plenty of scope for an essay answer. They were directed toward assessing four main aspects; the participant's recollection of the workshop (in an effort to establish which aspects had made the greatest impact); those aspects which participants found the most valuable; those aspects which they found the least valuable, and the extent to which the workshop may have effected changes or new developments in the programs of those who attended.

Questions eleven to twenty-nine were multiple-choice questions asking participants for a degree of agreement or disagreement on a given

statement. These questions were directed towards assessing the extent to which the workshop had achieved specific objectives.

The answers to the essay questions were diverse and several points were frequently made in answer to a single question. In the summary these answers have been broken up and regrouped, where possible, under sub-headings. The summary provides the number of participants supporting a particular position and examples of every type of comment, but where comments are very similar only one example has been included. Remarks from three letters have also been used.

The answers to the multiple-choice questions have been shown on a bar graph. All comments have been included unless they duplicate each other, in which case only one has been used. Two participants did not answer any of the questions in the multiple-choice section of the questionnaire and three did not answer all the questions in this section. The number who answered each question can be read from the bar graph.

The capital letters in brackets at the end of quotations and in the bar graph are abbreviations for the discipline of the participant. The key for these is in Appendix II.

The questionnaire forms on which the participants responded are available on request.

RESPONSE TO QUESTIONNAIRES

Essay Questions 1 to 10 inclusive

Question 1: What were your most pronounced memories of the workshop?

Some of the answers to this question have been organized into the following five categories. Further support for these categories can be found in answers to questions 2 and 3.

(a) Nine participants commented favourably on the interaction among representatives of many different disciplines;

(b) Seven participants commented favourably on the sharing and formal presentation of experiences.

(c) Five participants mentioned the less structured approach.

(d) Five mentioned remembering exploring Kingston.

(e) Two commented on the advantages of learning through active participation.

Example of comments:

- The cross disciplinary approach allowing more opportunities for integration of all subject areas (AE).

- The informal encounters with people in other disciplines. The spontaneous music and dance and talk happenings (AE).

- The way our group of six people was able to work so easily together using strings and feathers. We were a very diverse group so that we must have been surrounded by some ambience for the co-ordination that enabled this to happen (SE).

- Primarily the interaction among participants. Unlike many gatherings of this type, where participants are very defensive about what they are doing, and are inclined to be secretive, the Kingston workshop was marked by a willingness on the part of

those assembled to speak out, admit their limitations, and accept help when offered, freely and without patronage (AE).

- A warm and positive feeling about working together (AE).

- An attempt was made to integrate people and disciplines, but when the final position or posture was taken the grouping was still predominantly around interests - arts, science ... The art group had too much input and influence (SE).

- The beauty of real integration (FM).

- I was impressed with the attempt to relate science and art from a design point of view, although the depth of the relationship between those two fields remained fairly superficial (D).

- The presentation of the activities. The imaginative thought that went into these presentations (SE).

- The day we all presented our projects. It gave me a fleeting hope that the school system could be changed (AE).

- Interviewing people in and around Kingston (OE).

- Getting out into Kingston and undertaking a study project as a member of a small team (AE).

- My strongest memories relate to the project problem I was involved with, "search for the centre" of the City of Kingston - especially making our own physical "centre" in a cheap hotel room in downtown Kingston, a strong emotional involvement (photo documentation of the whole project probably helps to keep the memories vivid) - also visiting various places and people in our search. Adding to the intensity of the study was our all day, all night involvement with very little sleep. We explored psychological and spiritual aspects of environment, as well as aesthetic and technological ones ... (AE).

- The good feelings amongst people generated, I think, by the actual doing of projects instead of just theorizing about them (AE).

The following comments did not fit into any category:

- The time saving factor of small groups working on their own goals and objectives - later reporting their findings and finally sharing their experiences with the total group (AE).

- The people. The way people so totally involved themselves in their projects. With only a few examples, on slightly suggested problems, most participants seemed to become immediately and totally involved,

using their personal abilities fully without trying to gain personal "glory" ... I was amazed at the subjection of individualism to a group project by people who were obviously a selection of very creative people, to whom individualism was very important ... The other most pronounced memory was the strong feeling of friendship between people who had been strangers a few hours previous (AE).

- Reluctance of some participants to relax, let go and be creative (SE).

- My most pronounced memory is of how Lydia was able to create order out of seeming chaos when it came time to present projects. Most impressive (SE).

- That it attempted to extend the notion of design beyond that of dealing with three-dimensional objects (IE).

- An opportunity to meet some very dynamic and involved educators (AE).

- The fact that the whole thing worked - things happened when they were supposed to happen and results were achieved - two very rare occurrences at conference workshops (AE).

- Realizing that different people see the world differently, and that it is necessary to learn how others see the world in order that you can expand your vision and understanding of the world. I truly grasped the meaning of self concept and how it affects one's way of being in the world, and how necessary it is to make contact with one's self, and "others' selves", to accomplish a task (CD).

- The two projects which we undertook "officially" seem much less interesting and memorable than the peripheral/personal and accidental encounters (IE).

- Meeting people who received an artistic education and live personal experience in different worlds - designers, architects, artists, educators. The start of a dialogue on ways to help art education beoome significant in a socio-cultural contemporary context (AE).

- It was impossible to join in enough of the activities; lack of precise objectives; loss of precious time before I took it seriously (AE).

- The leadership was excellent, for the program moved ahead smoothly and ended smoothly without too obvious direction from anyone (AE).

Question 2: What insights did you gain from the event?

Most of the answers to this question were individual and could not be grouped. The exception were comments on the value of tactile and emotional experiences. This was mentioned by the following three participants.

- I had previously underestimated the importance of the tactile sense in learning, as a part of our everyday experience. The specific workshop event was the play with large crocheted body-stocking, part of the presentation of the west coast artist (SE).

- How important emotional and sensory involvement, and psychological attitude, are in the understanding of, and designing of, any environment, and in the understanding of any project ... That a workshop/conference needs an extended period of time, one needs to live it ... That in order to deal with an urban environment one needs to live in it, the way the people who live in it do, as closely as possible (one doesn't understand a city by living in a university residence) ... That "other" understanding cannot be divorced from self understanding (AE).

- That feelings and emotions are important considerations when design concepts are discussed ... That design may be a response of an individual to himself - his own feelings and desires - or it may be something related to other people, or to the physical environment ... The idea of communicating via a method other than writing/speaking, enabled one to exploit a new dimension of communication (IE).

Other answers to Question 2.

- 'The scope of learning that is possible if people will take advantage of it, and above all keep an open mind ... Also found the system as outlined for "discovery" via design personnel was much more meaningful for the young learner. Have tried it myself (SE).

- Integration of the various disciplines must be approached via the participants own abilities, i.e. a visually-thinking person will be most successfully involved in non-visual areas (music, drama, etc.) if he is encouraged to approach the problem from the safety of his own familiar field ... example: the attempt to have one group explore certain material through a purely scientific approach was unsuccessful until there was a slightly rebellious return to their own disciplines by some of the participants ... "Feathers and String" workshop (AE).

- Mostly the insights were a part of the total experience. I reaffirmed my belief in the importance of real experience as a basis for any learning (SS).

- I still cannot define design, but I would probably do a better job of it now than before. For me the chance to work with people whose minds are not scientific was very useful, because it has helped me in a faculty where only a minority are scientists. I have greater respect for the mind of the artist, the designer, the architect. I may be making too much of this, because of course we all have similarities of thought and action, but I do feel that others are less linear than I am, and are more successful at it (SE).

- It seemed to me that the diversity of the people who took part was well illustrated in the directions their projects took. Some were social-orientated, others much more analytic; yet the knowledge that others had come up with solutions quite different from one's own was a reinforcement of the "unity in diversity" pattern, rather than confirmation of the fact that people of unlike backgrounds cannot mix (AE).

- I was impressed with certain similarities which appeared between the scientists' approach to design and the artists' (SE).

- I felt a lack of purpose and this has been confirmed by the fact that nothing has happened since the event ... at least I am unaware of anything happening ... The initiative to formalize objectives has to come from an organization as capable as the Design Council, but there has to be a more profound awareness among the participants in regard to what is to be achieved - objectives. As they were, the objectives were too generalized (and perhaps open to misinterpretation by participants) ... but I began to see how it could all come together at the elementary level. It really confirmed my own convictions in regard to curricula (AE).

- The characteristics of the participants. They all seemed so unfettered by convention - what free spirits ... So many investigations which I had set up on "Is the city well designed for people?" were looked at in ways that I had not seen before, when my students or practising teachers were given the same investigations (SE).

- I don't think I gained insights so much as picked up new techniques for joggling people out of their existing pattern of thinking. In particular, the Design-In and Grips were of most use to me ... I think for anyone unfamiliar with the Outdoor Education movement the day at the farm would have been equally as stimulating (AE).

- That there is a great deal more to be gained from ACTIVE participation, such as we experienced at Kingston, than from the usual passive listening role played by delegates to conventions ... I was particularly interested and pleased to take part in the experience at the farm. I thought this did much to set the tone for the whole event (AE).

- The major insights for me were those related to the farm - and the kinds of links I could make between my design ed. goals and the opportunities to be found in the rural environment. This, in fact, stimulated me to have open-air workshops and "sketching" schools, etc. at my farm with my students ... The other insights were on the level of group interaction (the workshop as an event), of interdisciplinary co-operations, etc. Any workshops that I had been to previously were either disciplinary - with uptight professionals trying to prove their superiority - or highly structured interdisciplinary situations, where the objectives were fixed and people polarize and take stands on certain issues - while closing their minds to all other influences (A).

- I was very much interested in observing how creativity worked in one group during the Materials workshop. They began very hesitantly with details that they knew, and conforming to that knowledge. Then someone would make a suggestion in a tentative manner, another would enlarge upon it, and soon they were off on a track of exploration. They did not end up with anything that they had contemplated in the beginning. As the members of the group had wide backgrounds, it was an excellent example of the team approach. From what might have been a serious study in engineering, developed a most interesting project containing considerable humour.

  As a designer and illustrator I was aware of the trial and error approach, but it was most interesting to see that it happens with adults in almost the same manner as with students. The adults may bear a handicap of having to disregard more facts. At Kingston, the challenges were great and so the effort was greater (AE).

- I also came to realize, on an experiential level, how the physical environment you live in oppresses you and works upon your self image. The three of us who took the $5.00 room found bed lice on the second evening, were kept awake by the bawdy street life noises, and experienced stale air caught between the narrow nauseating walls (CD).

- That the teaching of math and art could be done jointly (AE).

- Those provided by the experiences at the farm. I talk of them with my art education students (AE).

- In general ... the recognition that people involved in education can be labelled as being empiricists (formal) or subjectivists (informal) (DE).

- That workshops are definitely preferred to "seminars" as a way to generate interest, and the capacity to undertake the sort of design work the sessions were to promote. The variety and different levels of involvement possible in a mixed group ... There was more time for different backgrounds, and points of view, to be confronted and clarified on a personal level in the workshop, as opposed to formal presentations and discussion groups.

  Since the secondary seminar fiasco which followed the workshop, I have used the workshop participation approach almost entirely - and the length doesn't matter, even three hours will do.

  Regarding "specifics", not much - it's just that some of us were at this so long that we seem to know it all (except we don't) (IA).

- How all this relates to subject integration isn't clear to me. I think it relates to how people work together, whether they are teachers or managers, or designers ... that trust is extremely important in human relations and that trust comes with direct contact - nothing new here (DES).

Question 3: What do you consider the most valuable aspect of the event?

The answers provided by ten participants duplicated those given in Question 1. These were the interaction among disciplines, the exchange of ideas, the active participation, the unstructured approach, the inclusion of specialists, and the mention of specific presentations.

Sample comments:

- Above listed idea of integration and unstructured approach - allowing opportunities to use knowledge acquired from all subject areas, and to apply this to new situations, thus gaining knowledge through experimentation and involvement (AE).

- Bringing together people from varied backgrounds and places to share common experiences in a creative, investigative atmosphere (SE).

- The breadth of disciplines represented. This led to a lack of cliques, so that it was easy to meet people. I enjoyed being at a conference where I found nearly all the participants to be on my left. For me, in science, this is unusual. To see artists at work, with what I feel are different ways of working, was very interesting for me (SE).

- The opportunity to test out beliefs about learning (SS).

- Probably for me, input from the "non-art" people; the physicists, the mathematician, the psychologist. Also the contacts I made with people across the country. Finally, the essentially "non-threat" format of the events (AE).

- It also helped me clarify some ideas that I had about design education programs, to the point where I believe that the most feasible approach is to have a number of people work through their respective disciplines, into a common ground of design, rather than attempting to construct an autonomous "design curriculum" (AE).

- Contacts with other people that have been established (A).

- The opportunity to see, and be involved with, highly specialized professionals, who were able to step outside their professional expertise and react to events in a humanistic way, but were able to use their professional expertise when necessary. Almost the opposite of what usually happens at work sessions involving professionals (AE).

- Meeting all the participants from across Canada, and seeing their approaches to design education (SE).

- I believe that most of the members of the group were satisfied that they had been able to work together and accomplish something, other than making resolutions and arguing. Another important feature was that there was time to finish something. In other words, the people who planned the conference plotted the time elements well (AE).

Examples of comments which did not fit into these groups:

- I made some good friends and learned to touch (AE).

- The imaginative and talented participants who gave leadership to some of the seminars (SE).

- For me it was probably the project - an opportunity (time, place, people and other resources) to relate a concept and attitude to a practical project, and an actual place - and to work with other people of similar or common interest, but different backgrounds ...

Also meeting more people concerned with "Design Education" and strengthening previous acquaintances (AE).

- A most whole and broad interpretation of the word "design" (IE).
- That people not only designed projects, but that they produced a finished result ... That it lasted as long as it did in quarters virtually cut off from the rest of the world, and yet the world was accessible (AE).
- The event itself (A).
- The small group project - our search for the urban centre. It was the continual questioning of people in the street as to where the centre was that triggered my fully understanding the basic differences in our perceptions of the world (CD).
- Playing hooky and visiting other workshop groups when we were supposed to do our own bit (IE).
- Small group discussions (DE).
- GRIPS and meeting math educator with whom a dialogue was started (AE).
- My real and positive experience included my participation in the farm workshop, and my involvement in teamwork while interviewing children in the parks and playgrounds of the City of Kingston. Specifically, after the initial "situation shock", I enjoyed very much the meetings and discussions with other members of the various groups ... I learned to adapt and adjust quickly to working with a total stranger. I think though that I was privileged by the fact that we seemed to hit on the same wave-length almost immediately ...

  The most favourable aspect of the event was having the opportunity to really get involved in a concrete - albeit small and short lived - research project, giving me a strong feeling of active participation (AE).

Question 4: What were the least successful aspects of the event?

Some of the answers could be grouped as follows: the poorly defined objectives; the lack of follow-up, the cliques, the lectures.

- Poorly defined objectives.

- I never really understood the overall objectives. Thus, I can't say what was not successful - except that statement of overall objectives (SE).

- Not having an overview of the activities prior to our taking part in them (OE).

- A degree of muddle about design/science/art, etc. - (i) relative position in curriculum; (ii) advantages and drawbacks (unresolved difficulties and miscarriages) of multi and interdisciplinary approaches (where applied in schools). There really was not enough time to tackle this, at any rate this is a problem for staff at a particular school to work out. (iii) What design is and is not. Some of our projects might have been nice art projects, or nice science projects, but were not design projects or design education. I have become more catholic about what I include under the design umbrella since that time. Again this takes more time to resolve than any short workshop can achieve. If it raises questions and offers some alternatives to consider, it has done the work. (iv) Relatively little attention to designing (verb), and educational implications (IA).

- Really the least successful aspect has been the lack of follow-up on what was begun here. Having just attended the N.D.C. conference in Edmonton, I am dismayed at how little has been accomplished as a result of these conferences. They have become an end in themselves not a means to other ends (AE).

- Follow-up projects/conferences based on particular finding/outcome of the seminar (IE).

- Bringing it all together. Finding out what it was all about (AE).

- The cliques who move from workshop to workshop perpetuating themselves (SE).

- I think there could have been more deliberate effort to ensure people would mix. I did feel that there was something of an "in" group and, as a newcomer, I was slightly out of it (AE).

- The lectures for me, none of them were particularly illuminating (A).

Other comments:

- My film probably - I've still never seen it (FM).

- A couple of the workshop leaders who had fixed ideas, and were in a position of leadership at the start, and therefore had little opportunity to change or be influenced by events (FA).

- There seemed to be an expectation on the part of the organizers that the conference should be heavily recorded because it would produce a significant outcome of general interest. Personally I feel that, because of the informal nature of the arrangements, little or no publishable outcome should have been expected. The presence of a lot of media coverage gave an artificiality to the "spontaneous" intentions of the conference (D).

- Ironically, I feel the strong point was also the weakest one - that is, meeting and working with people of different disciplines. Even though I worked extensively with a psychologist and early childhood educator, I had some understanding of these disciplines and they weren't completely different from my own concerns (art and education). I think that I (and many other participants) tended to gravitate towards people and ideas that were at least somewhat familiar to us. I spent a bit of time talking to a mathematician, but not nearly long enough in retrospect (AE).

- Lack of enthusiasm by some at the beginning (AE).

A science educator and child psychologist commented that they found no unsuccessful aspects.

- The negative feeling felt about the objectives of the "farm" program - reintegrating adolescents into a society called "straight", by an immersion in Nature, and the learning of techniques of survival in order to send them back to cities. The incompatibility of an architect's methods with the objectives of art education.

  My own inability to express my opinions (AE).

- The least favourable aspect involved some prejudicial attitudes on the part of a few of the participants. This situation arose, in my opinion, because of the following two reasons:

  (i) The tendency to superficially assess another person's knowledge and scope;

  (ii) The formation of small groups by some of the participants within workshops, where the dynamics of relationships were based on "situation-contract", or what I would call a "let's not question each other's ideas" attitude.

  This phenomenon interfered with good communications and therefore inhibited an important learning process for many (AE).

Question 5: How did the workshop compare with other workshops or conferences you have attended?

The answers have been organized from positive, though specific comparisons, to indifference.

- 2000% better: in many people's opinions, as well as my own, in case they don't answer the questionnaire. There were original thinkers who passed on to the rest of us the result of their work. There were others who were doing exceptionally fine work who were equally accessible and helpful. Above all it worked; people listened, talked, reacted; then, instead of dissipating the enthusiasm into a beer bottle, they designed and produced projects ... You deserve enormous credit for making this happen (AE).

- Definitely the most personally rewarding, mind-expanding and fun (CD).

- It still remains the most influential (in terms of the effect it had on my thinking), memorable and valuable conference - workshop I have ever attended. This is I think because it was a "doing" conference - very little was "laid-on" the participants. They (we) actually participated and felt that we had some influence in controlling the shape of the workshop - the preliminary preparation and planning was well researched and handled - much care seemed to have been taken in selection of participants (AE).

- The setting - atmosphere far excelled anything I had attended to that point ... There weren't the pressures that I've experienced at other workshops - but there were moments of intense involvement, handled very well by workshop leaders (AE).

- Excellently - very free flowing - far more open and creative people than usually attend the strictly teacher ones I normally attend (FM).

- Personally I thought it excellent because of the individual involvement and "sharing experiences" approach (AE).

- Usually a conference/workshop is an excuse for a two or three day drinking session or, at best, a social opportunity for meeting old friends, and avoiding attending most of the lectures offered. In this case, I really felt as if something had been achieved; something learned (AE).

- Very well. Mainly for reasons already mentioned (AE).

- Of all the workshops that I have attended, Kingston contributed the most. To be more specific, I think the key to success at Kingston was participation. We did not have enough at Ottawa. It was all talk and the same was true at Edmonton this year (AE).

- Certainly the best of the NDC workshop sessions and conferences. Difficult to compare with others since the material and orientations differ from one to the next (AE).

- Well organized as most, very diverse yet, I felt, fairly comprehensive, which is not true of other workshops I have attended. I enjoyed this week better than most weekly workshops. If I have something to offer I would enjoy attending again (OE).

- The informal structure of this workshop permitted interesting personal exchanges, and especially a thinking process based on experience. The other workshops ... took the shape of seminars or conferences where the individual could escape if bored (AE).

- It was much less formal. It was more human, and more got done. There was more interaction between people (SE).

- Very different from all points of view, because of the variety of professions involved (AE).

- It was more people orientated and more action orientated than most (SS).

- More open-ended than any other conference which I have attended. (Actually I had tried to organize my own part this way intentionally) (SE).

- The approach was more original and involving. However the conclusions or summation was weaker (SE).

- More informal, less structured. Less specific input - more generalized ... More dependent on initiative of participants ... More emphasis on follow-up and greater hope for conclusions on the part of the organizers - perhaps a little out of keeping with the informality of the event (D).

- The workshop, as opposed to the conference format, is more effective in terms of acquiring concrete experiences (be they positive or negative). In clarification of the latter, negative experience refers here to my own initial negative reaction to the GRIPS presentation. I admit that, in the final analysis, it became a positive experience, as I ultimately came to terms with my own attitudes, realizing that they were due to a lack of information on my part. I would like to add here that, after my first confrontation with my tendency to prejudge the situation in which I

found myself and the consequent acceptance of my mistake, I became more relaxed and open to the ideas that were presented (FA).

- Certainly the most informal ... Some activities would have been more effective if self directed targets had been established - and publicized (IE).

- About the same (SE).

- Over the couple of years I have become very negative towards workshops and conferences but, in retrospect, this workshop was enjoyable in terms of the people who were in attendance (DE).

Question 6: After the workshop was it easier for you to communicate with and work with people in other disciplines?

Eleven participants answered "no", usually with the qualification that they were experienced in this area before the workshop.

Eight participants answered "yes", usually qualifying it with statements such as, "to a certain extent", "somewhat", "probably".

Sample comments:

- No, not really. More than anything else (as I tried to indicate earlier) I've learned that it is difficult to get people to step outside their professional, and specialized, vantage-point to react in a more humanistic way; to capitalize on the expertise of others in the group; to share, rather than impose. I think that the workshops were able to achieve this (AE).

- Yes definitely. I am now convinced that the less structured, more integrated approach is far superior to the method where all subjects are pigeon-holed in separate compartments, with little opportunity for purposeful application of total knowledge gained (AE).

- Probably yes. I have found it easier to talk to artists and space designers. It probably didn't move me all that far in the faculty. I was already communicating with our communications professor, and our arts and music people are more formal than yours (SE).

- Yes, I think so. I was able to understand the tentativeness and the reticence of someone in another field, who is not at all sure whether what he is doing is comprehensible to his audience, in a way that I did not before (AE).

- Since then it has been easier to justify co-operation between art/drama specialists in schools (IE).

- To a certain extent - I had more to talk about when I met people involved in design education (SE).

- I think so, but difficult to describe why that was so because I have usually worked quite well with people in other disciplines. I think maybe because I was so excited, particularly by the Grips and Design-In approach, that I bubbled over with it to town-planner, biologist and games theory people and got them excited about using such things as avenues to changing the existing education structure (AE).

- Yes, I began forcing myself to work on an interdisciplinary base (CD).

- Yes, I have talked of all my experiences to different groups, science, gym, domestic science, etc. (AE).

- Although establishing relationships and communicating with others has never presented any problem to me, I did find my observations formulated as a result of the workshop to be beneficial (AE).

Question 7: Did the workshop affect your program or projects?

Of the twenty-four participants who answered this question, only one said the workshop had not affected his program. Eighteen said that it had and went on to explain how. Of the remaining five, two answered that the workshop reinforced their ideas, two suggested that perhaps it affected their programs and one commented that it provided ammunition in support of his own approach to education.

Sample comments:

- Have been stressing integration in my teacher training workshops throughout the province, over the past two years, since my retirement from Teachers' College ... (AE).

- Perhaps - I try now to include art and design in many of my suggestions to teachers, to help them see it really isn't all that difficult - Art is not something to fear. we all have some of it in us (FM).

- Have used the example lesson given by the architect from Vancouver. Very useful. The brain storming procedures have also been used (SE).

- Yes. Immediately after the workshop I was invited to design a training program for persons working with young children. The design of the program took on a broad interdisciplinary base (CD).

- Feather concept - only I used other materials. Communications activities - making hats, capes, etc. (OE).

- It has affected my programs and projects. My teaching is imbued with what I lived there (AE).

- I teach painting. Since the workshop I have been unable to confine my students to strictly using paint on a two-dimensional surface. I have my students explore the possibilities of photography, film, projected images and sound as either aids to, or the core of, visual imagery (AE).

- Yes, I think it helped my colleague in art education and myself by confirming we were on the right track for ourselves (SS).

- Yes, I used and adapted many of the sensitizing and awareness ideas, and am still developing and adapting some with my teachers. As a member of the provincial Outdoor Education Planning Group, I find myself still referring to things that we did at Kingston and citing the professor at the farm (AE).

- I don't know if it changed anything, but it certainly reinforced my ideas (see accompanying booklet) (AE).

- Not significantly - I had been using an integrated approach, where applicable, before the conference and have continued to do so (D).

- Yes, we organized a joint program between the Design Division and Art Education for high school students dealing with the design process. This was done in conjunction with an art educator who was at Kingston and Art Education students. See report ... (DE).

- Yes - my teaching and my artwork tends now to relate to environmental, social and psychological issues and ideas, rather than purely aesthetic or formal or media concerns. The following summer I worked (with my wife and child) as an artist/teacher/community worker in a small Newfoundland community. Teaching and arting became more related to living a situation. I have become more involved in film making, an integration of aesthetics and technology (AE).

- Yes - it enabled more project work where pupils expressed themselves in, say, personal adornment, where outcomes were more than conventional jewellery, i.e. self adornment in a fantasy work (IE).

- Yes - it has been a contributing factor, especially with my young children. I see design education in a much broader way and I concentrate less and less on arts and crafts as an end in themselves. I involve more of the home, commercial, industrial and natural environments (AE).

- This workshop as well as the Ottawa meeting has given me ammunition to support my own approach to education. I often refer to the Ottawa conference when introducing workshops which integrate mathematics with other areas, and which promote a sense of functional design in children (SE).

- Yes, since the '72 workshop I've used modified Grips' situations with children and some adults and have included the Design-In approach to environmental awareness into a teacher training course and into Environmental Education workshops for teachers run by the Charlottetown School Board (AE).

- Yes, I was impressed with the workshop by the architect from Vancouver. His work with children on the disintegration of the environment led me to try out the mural idea with groups of student teachers (AE).

- Yes, it stimulated me to have open-air workshops and "sketching" schools, etc., at my home with my students. Made contact re Grips and got some ideas for improving it. Followed up with visits to Halifax and Charlottetown and subsequently gave a design seminar course at University of Prince Edward Island as part of Art-Media (A).

Question 8: Did it affect new programs or projects for which you were responsible?

Of the twenty-two participants who answered this question, five answered "no", thirteen answered "yes" and went on to explain, two repeated their answer to the previous question (that the workshop had reinforced their ideas and provided ammunition), one answered "perhaps" and one answered "not significantly".

- At present am working with Althouse College, University of Western Ontario, and several professors conducting Environmental

Studies Courses for University of New Brunswick Summer Sessions at St. Andrews and St. John (AE).

- See brochure and course statement included (CD).

- Yes - I reconstructed a design process course ... to include more "self" learning on the part of the students (DE).

- Strengthened the interdisciplinary objective in my master degree in the plastic arts (AE).

- As a direct result of the workshop I have developed a personal interest in film and photography and produced a slide/sound "event", in co-operation with one other of the workshop's participants, a musician. I obtained a $2,000 grant to launch a project to integrate students and staff of the separate departments of film, music and art at Queen's University. The end product was a short film "Surface" which has been included in a Canadian Film Series by The National Gallery of Canada (AE).

- Yes - our Outdoor Education Program was still in the early stages, and I know that it helped the outdoor education specialist who attended and me to present many ideas that had "worked elsewhere". This is important in this conservative province (AE).

- Perhaps, but not in a readily perceivable way (D).

- It helped to aid (directly and indirectly) greater co-operation between my department (Art Education, N.S.C.A.D.) and other institutions - e.g. providing art component, as a teacher and program director, at Mount St. Vincent University, Halifax. This was a direct result of my work in the project with a child psychologist. We discovered we had similar ideas regarding art, education, children, etc., and could work together. The program is now two years old. Also, my department is co-conducting a course with the physical education department of Dalhousie University, Halifax. It is a course for their recreation majors and is also taken by our art education students. The course is called "Art and Leisure" and explores the relationship between art and crafts and physical education activities and recreation, and between artist/teachers and recreation directors/administrators (AE).

- Ultimately (i[illegible] taken until this year to effect) it has caused Environmental [illegible]tion Workshops given by this unit not to be totally science-orientated, but to have a people, community or urban environment component as well. It affected an Environmental Education Course given at U.P.E.I., designed by myself and and a biologist. I don't think I would have had the impetus to propose, with said biologist, such a course if it hadn't been for Kingston '72 (AE).

- Inputs into: "Design Education" course (interdisciplinary, general design course for secondary schools), Design orientated "Art and Craft for Elementary School", and "Shop Skills for science teachers" (new this year). They don't know it yet, but there will be applications of science which some of them might not expect (IE).

Question 9: Did the workshop affect other programs or projects indirectly?

Of the twenty participants who answered this question, three answered "no", fourteen answered "yes", two repeated their answer to the previous two questions and one answered "perhaps".

- Yes. Actually all consulting work I have done since the workshop, as I do not approach work without realizing an interdiscipline base. I often collaborate with the two other people I worked with in Kingston (CD).

- As part of a group responsible for writing a new art curriculum for schools in this area, I believe the quite original form the curriculum took on was a direct result of experience obtained in the workshop (see attached) (AE).

- Yes - I think other programs in our faculty are seeing the need for the kind of integrated approach in at least part of their work (SS).

- A communications course and a design course (SE).

- The 19th Assembly affected many Saskatchewan programs, and no doubt the chain reaction goes on (AE).

- The art educator from Newfoundland, whom I worked closely with during the workshop, has since become a faculty member in my department at Nova Scotia College of Art and Design. My department (of which I am now chairman) is presently offering a course called "Art, Math, an integrated approach to teaching and learning". Have just written and submitted an article to the Nova Scotian Journal of Education titled "Subject Integration - What does it Really Mean?", expected publication date fall '75 (AE).

- Elements of understanding gained at the seminar have affected programs in Home Economics, in that feelings for other people may affect living conditions. That elements of survival may contain opportunity to inject a certain amount of "creativity" into the programs (IE).

- I hope workshops here in Kingston and throughout Ontario have affected many classrooms, but it is hard to give examples. I often get letters indicating that some teacher has completely changed his/her approach to mathematics (SE).

- I answered this partially in 8. As well, a few student teachers I've had have used a modified Design-In with their children in classroom situations (AE).

- Only in the sense that one benefits from this type of experience personally, and there is I believe a certain enrichment of one's professional attitudes as a result (AE).

- Yes - see 7. Some ideas and approaches have stuck with me and found their way into my work with students. Some tools that I got from others (e.g. Design-In, Blind-walk) I have used. I have asked some people to come and work with my students (A).

- (Lydia Ferrabee) led to my getting involved with Ecole Victoria School, and bringing my classes in science into the school, as well as working with the children on field trips. (I suspect that this as yet may be only the tip of the iceburg - only time will tell.) (SE).

- In my course the "Didactics of Plastic Arts" I include ... a consideration of the relationship between academic disciplines and the plastic arts ... e.g. Arts-math ... Art Language ...

Question 10: Have you maintained contact with some of the people who were at the workshop? Did you know them before the workshop? Had you worked with them before?

Of the twenty-four participants who answered this question, seven answered that they had not, two commented that there had been no significant contact, and two more had only sustained contact with people within their own institutions. The thirteen who mentioned that they had maintained significant contact went on to elaborate. They had all maintained working contacts with people they had not known before the workshop, as well as with people they had known prior to the workshop. Six of the people with whom they had maintained contact were among the fourteen who

had not answered the questionnaire (one of these was mentioned in four of the answers and another in three).

Contacts that have been maintained:

- An art educator from Fredricton maintained contact with an Integrated Studies specialist at Althouse Graduate School, University of Western Ontario, and an art educator at the University of Moncton.
- A child psychologist from Mount St. Vincent University, Halifax, maintained contact with two art educators in the same city, and Lydia Ferrabee.
- An art educator from Queen's University, Kingston, maintained contact with four people he had not known prior to the workshop: an art educator in the University of Calgary, an artist in Vancouver, Lydia Ferrabee, and a musician at Queen's University.
- A science educator from McGill University, Montreal, maintained contact with Lydia Ferrabee and an art educator (brief) at Concordia University in the same city. He had not known them before the workshop.
- An art educator at the University of Edmonton maintained contact with an architect in Vancouver, an art educator at the University of Prince Edward Island, an art educator at the Nova Scotia College of Art and Design, none of whom he had met before the workshop.
- The art educator from the University of Regina invited the following participants to Regina: the Vancouver architect; the art educator from Queen's University to show a film he made; and the professor from the farm, to participate in the National Outdoor Education Conference; she asked an art educator from the Nova Scotia College of Art and Design to do some research for her in connection with a design conference in England;

and she did some research for the art educator from the University of Prince Edward Island.

- The art educator from the Nova Scotia College of Art and Design has maintained contact with the following: with the art educator from Newfoundland - he had been a visitor and has now joined the Faculty; with the Child Psychologist at Mount Saint Vincent University, Halifax, had not known her before, has now worked with her for two years (as mentioned under question 8); with the art educator from the University of Calgary who he knew before; with the art educator from Queen's University whom he had not known before, and who has been a guest lecturer since; and with Lydia Ferrabee, who he had known through her work and who has been a frequent guest lecturer.

- Industrial arts educator from Keele University, England, has worked with an industrial arts educator from the University of Toronto, invited the architect from Vancouver to participate in a conference, and stayed in touch with Lydia Ferrabee.

- A science educator from Queen's University, Kingston, occasionally bumps into one or two of the participants, and the art educator from the Faculty of Fine Arts, who is now also teaching a program in his Faculty of Education.

- The art educator from the University of Prince Edward Island maintained contact with:

> The art educator from the University of Alberta (didn't know him before) - general innovative education happenings: the architect from Université de Montréal - didn't know him before - reported to him on my use of GRIPS, discussed how the game could be improved, had him come to UPEI to give a course: the

architect from Vancouver - didn't know him before - did a workshop with him - general happenings in art education in the maritimes.

- The architect from Université de Montréal maintained contact with:

The design educator from the Nova Scotia College of Art and Design. We visited each other's schools and had sessions with other staff. My colleague has since been to the Art College and worked with students. The Art Educator from the University of Prince Edward Island. We were very interested in each other's projects. She was very keen on GRIPS and used the game experimentally in several teaching and other situations in PEI. She put me in touch with a philosophy professor, who has since become a GRIPS' user and a good friend. I gave her advice on some of her projects including "Colour Box" and her design environment course. Went on to design a summer course at UPEI as part of Art Media, arranged by John Smith, her husband. Artist from Vancouver. I want her to work with my students and I like her work. We've corresponded about this and I hope to arrange a workshop with her this year. (I recently saw her show here in Montreal.)

- The industrial arts educator from the University of Toronto worked with the architect from Vancouver in applying a Design-In approach to his programs, and with an art educator from the University of Alberta and Prince Edward Island on curriculum projects, and courses in Art, Design and Environmental studies.

- The art educator from the Ecole Normale, New Brunswick, worked with the art educator from the teachers' college in Fredricton. They knew each other before.

- The art educator from the Université de Québec à Montréal met with the math professor from the Université de Sherbrooke. She had not known him, or about the work being done at his University, before. She also maintained contact with art educators, specifically the one from Newfoundland and the artist from Vancouver. She finds a certain complicity of "Old Kingston people" persists.

Multiple Choice Questions 11 to 29 Inclusive

Question 11: The workshop modified (changed/expanded/formed) my concept of the word "design".

						CD
					SS	SE
					IA	SE
					FM	FA
Strongly		OE			SE	AE	Strongly
Disagree		D			SE	AE	Agree
	DE	A		AE	FA	AE	
	AE	AE		AE	AE	AE	
	1	2	3	4	5	6	

Comments in "please elaborate" section

- Expanded (AE, SE).
- Articulated ... by the varieties of the design process one saw in action (AE).
- My concept of "design" was in the process of being modified from earlier contacts with the Montreal designer's ideas (AE).
- Particularly the presentation by the art educator from Edmonton (SE).
- The workshop confirmed my concept (SE).
- Expanded, prior to this I applied the word "design" and "designer" to very select situations (CP).
- Expanded and confirmed (AE).
- Reinforced rather than modified (D).
- My concept of Design was already pretty broad. The workshop reinforced it (A).
- Notably to work more closely with other disciplines (IA).

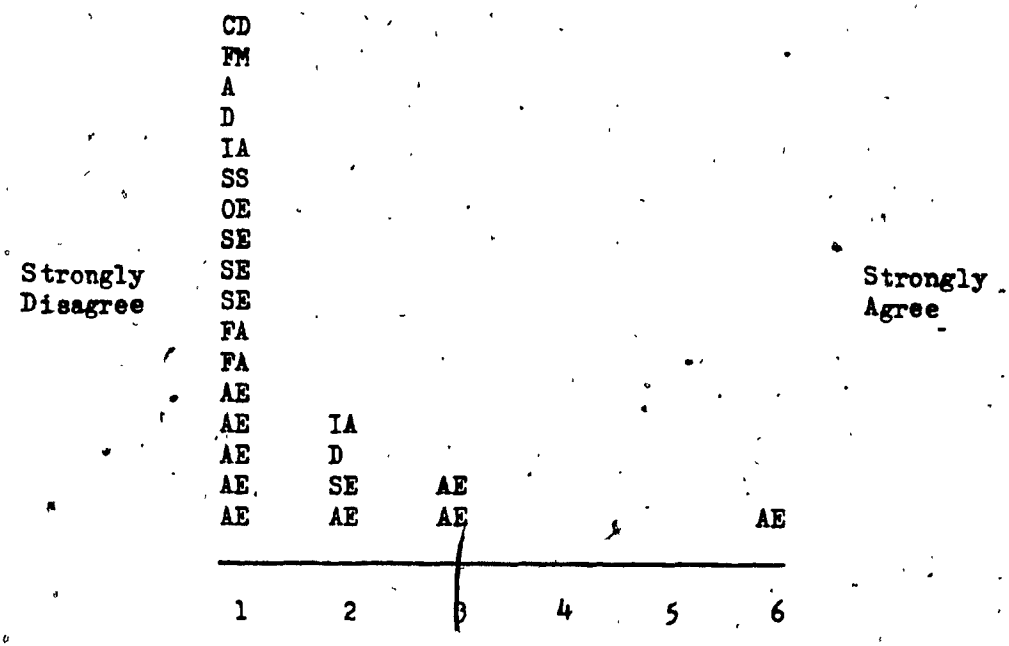
Question 12: The workshop provided me with an understanding of design education.

Strongly Disagree						Strongly Agree
		FM A D SE		DE		
		SE		D	CD	
		AE		IA	FA	
		AE	OE	SS	AE	
	SE	AE	FA	SE	AE	
	AE	AE	AE	AE	AE	
	1	2	3	4	5	6

Comments in "please explain" section

- I already understood it, but it may have modified it of course (AE).
- Chiefly expanded and reinforced my own idea (AE).
- It provided me with a framework within which to further develop my own concepts of design ed. (AE).
- An understanding I had. It helped me to articulate and provide examples to talk to others (AE).
- Apart from reinforcing my existing understanding, I don't think so (AE).
- I don't believe I had understood how design could be applied to all these areas (AE).
- I only regret that we did not go on to have more workshops like this (FA).
- Could have followed through better to the productive levels, and the needful pragmatics at that level (SE).
- It expanded my notion of design education. Prior to that time it was extremely narrow (CD).
- A fuller understanding by introducing activities related to feelings (IA).
- A better understanding through hearing and seeing others approach to design ed. (D).
- It added little to what I knew about present design education - but reinforced the ideas that I had about what it could and should be (A).

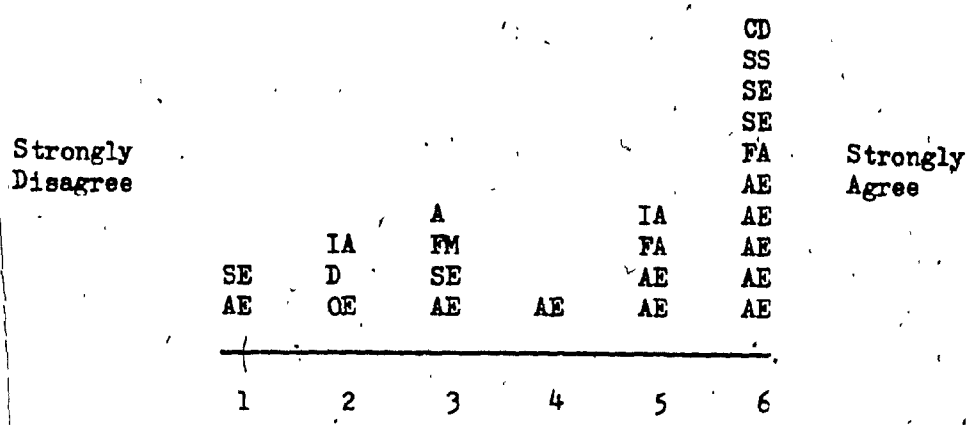
Question 13: I do not understand the relationship between the workshop and design education.



Comments in "please explain" section

- The workshop seemed an obvious example of design ed. because of its context and structure (AE).
- ... most of the workshop was too vague (AE).
- It was clear that a new dimension was aimed at (IA).
- The workshop was an experience in design education - and a thought provoker re "ed". (A).

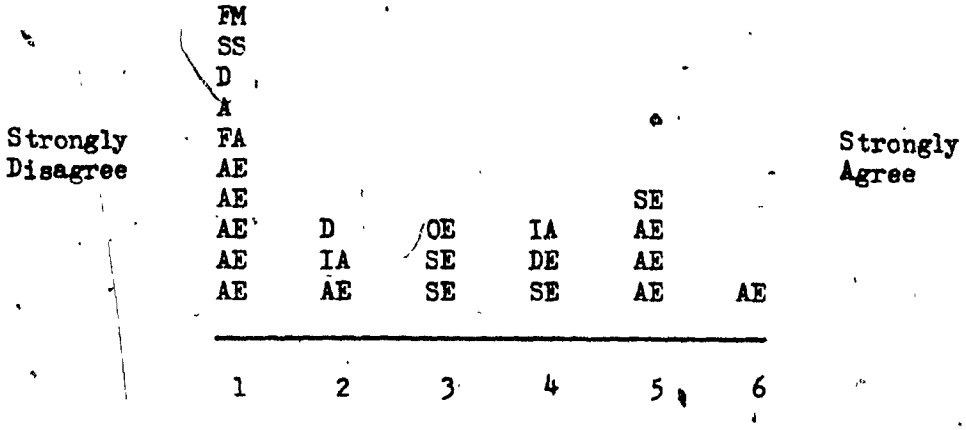
Question 14: The workshop increased my understanding of environmental design as something that involves all disciplines.



Comments in "please explain" section

- I already fully understood that point (SE).
- This was not a new discovery for me (D).
- Yes ... at that point I hadn't made the connection between design and environment (AE).
- Reinforced rather than increased (A).
- The heightening of awareness was fine, after that I don't know (SE).
- Rather could involve all disciplines or involve several - I felt this in theory - the workshop demonstrated this in practice (AE).
- Especially by enabling me to work alongside architects and scientists (IA).

Question 15: The concept of design education on which the workshop was based was too general.



Comments in "please explain" section (ordered from supportive to critical).

- By definition design education is "generalist" in nature rather than "specialist" (AE).
- If it had been more specific, many people would assume that there was only one way. This was a plus to my way of thinking (AE).
- This is the necessary approach in primary education (A).
- Whether it remained general or specific was up to the participants (D).
- But opportunity existed to be highly specific (IA).
- Maybe that was the error (SE).
- Maybe the workshop should be highly specific (IA).
- Maybe the workshop should have been based around a more specific subject (DE).
- Yes - I felt this could have been discussed more fully by the delegates (AE).
- To the extent that the general and the specifics were not related clearly enough (IA).

Question 16: The workshop helped me to relate my discipline to others within the framework of design education.

				FM SS SE AE	A IA SE AE	CD OE FA AE
Strongly Disagree		IA AE	DE D SE			Strongly Agree
	D	AE		AE	AE	AE
	1	2	3	4	5	6

Comments in "please explain" section.

- It helped me to relate it to some others - not as many as might have been possible (AE).
- This workshop provided specific examples for me to talk about to others (AE).

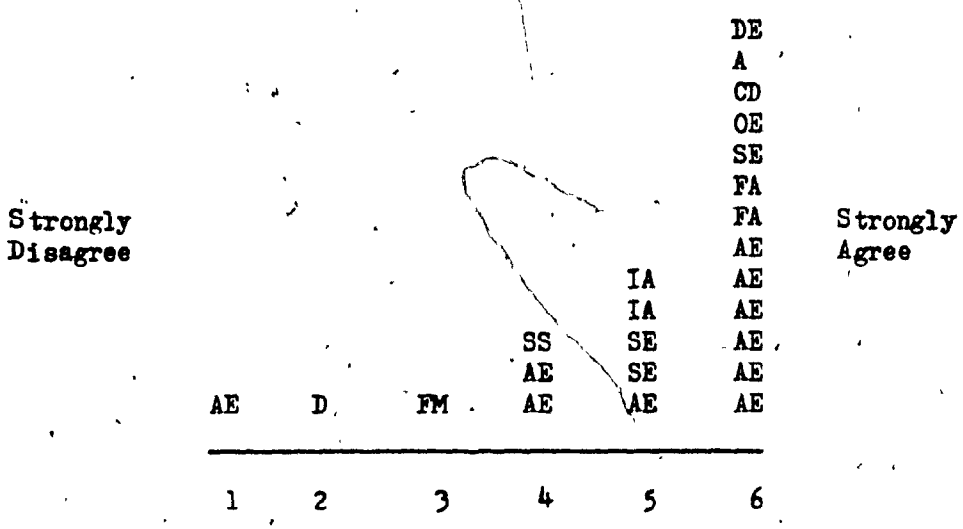
- I was able to work with others in a low pressure situation - this opened new possibilities in terms of identifying relationships with other disciplines (AE).

- It supported many of my own ideas (SE).

- It was too long ago for me to recall specific insights, but it may well have influenced my perspective (D).

- It could have (Des).

Question 17: The workshop helped me communicate with people in other disciplines.



Comments in "please give examples" section

- Informal sessions over supper, etc. (AE).

- Arts Mathematics (A).

- Because of distance, etc., it might never have happened otherwise (AE).

- To a certain extent - architect, psychologist, planner, I still felt uncomfortable with the scientist - the common ground was education (AE).

- More it spurred me on to set up channels of communications (AE).

- It helped me to acquire a new insight into the dynamics of communications (FA).

- Art, design, urban geography (elaborated in earlier answers) (SE).

- I had never met and lived with such a diverse group (CD).
- No significant change (D).
- The most useful form of communication is doing things together - thus workshop format good (see also answer to previous question) (A).

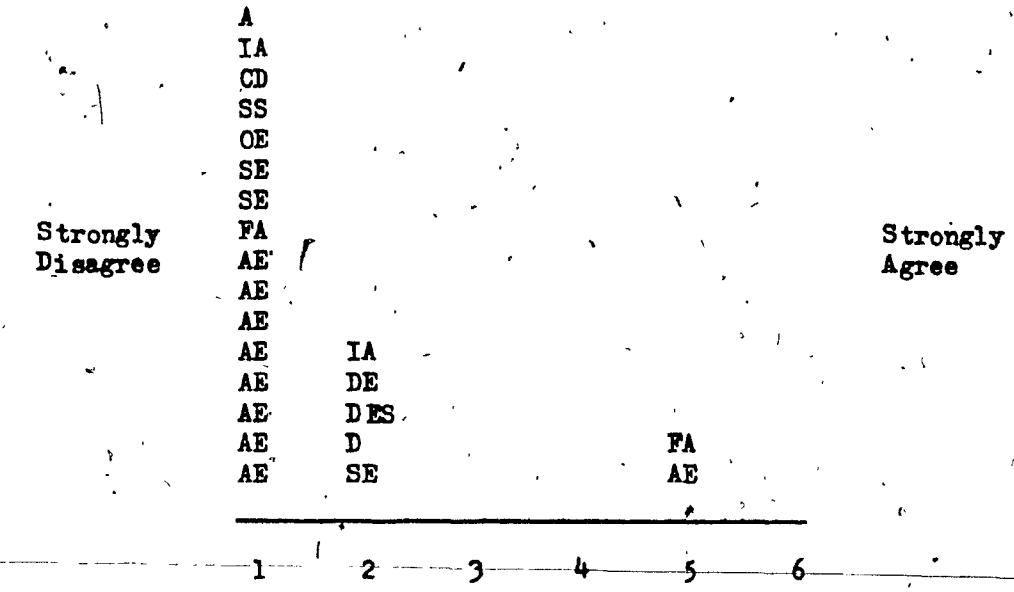
Question 18: The workshop was a valuable learning experience.

Strongly Disagree					Strongly Agree
				A	
				DES	
				IA	
				SS	
				CD	
				OE	
				SE	
				SE	
			FM	FA	
			SE	AE	
			FA	AE	
			AE	AE	
			AE	AE	
		AE	AE	AE	
		D			
1	2	3	4	5	6

Comments in "please elaborate" section

- I was strangely influenced by, and remember, many details of various aspects of the workshop, especially my project but also most of the others (AE).
- As well as the new techniques GRIPS and Design-In, I learned something about myself, and saw myself afterwards more as an activator between disciplines - not just as an art teacher who was interested in other things (AE).
- I learned much - and saw my own work in a new perspective vis-a-vis others (A).
- Elaborated in earlier answers (SE).
- Because it provided the opportunity to do something new and different (IA).
- First day at farm was an example of an effective approach at bringing strangers together (DES).

Question 19: The workshop had little to contribute.



Comments under "please elaborate" section

- I assume you mean "... to me as an individual" (AE).
- The more one put in it, the more one got out of it (AE).
- It is in my estimation an important introductory event, but it must be followed up (AE).
- Ain't so (AE).
- To a degree it was personally helpful but ... I feel this was not universal (FA).
- See other comments. All who attended must have left with some stimulation and some ideas, even if nothing very tangible (A).

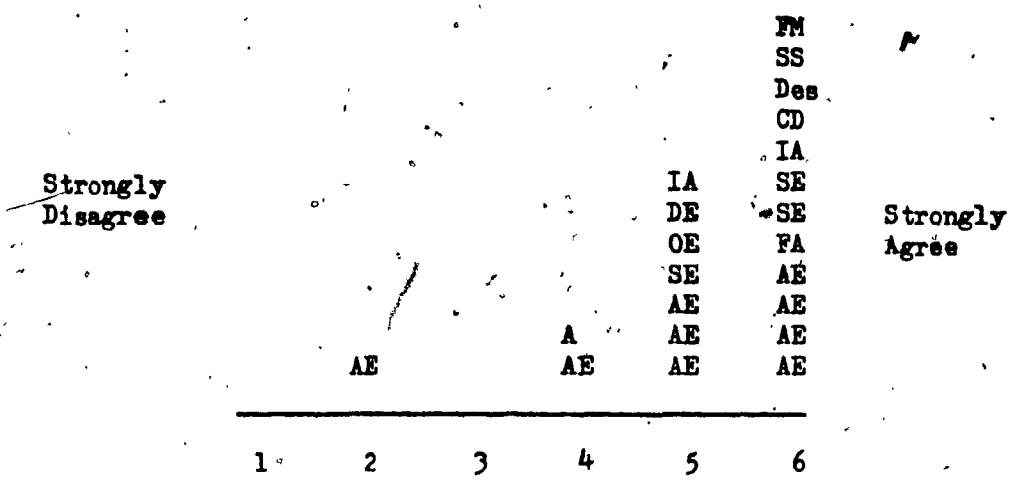
Question 20: Participants were provided with too little direction.

	DES					
	SS					
	SE					
	SE					
Strongly	FA	FM				Strongly
Disagree	AE	IA	IA			Agree
	AE	A	D			
	AE	SE	AE	OE		
	AE	AE	AE	AE	AE	CD
	1	2	3	4	5	6

Comments in the "please explain" section

- This minimum of direction is necessary for creativity (AE).
- A nice balance of structural and non-structural events (AE).
- It is so and it isn't. No one said do A, B and C. But to me that is a good thing. On the other hand, there was lots of indirect direction in the form of awareness of experiments, etc. (AE).
- I did feel a little lost at times (AE).
- Some participants needed more direction, but even more they needed to find in themselves the power to be their own decision-makers. It was about right (SE).
- Many cases didn't want the direction which I had made available (SE).
- I think the undirected aspect was valuable, but perhaps a sharing of the objectives of various "disciplines" would have set the experience into perspective (D).
- That was part of the point (DES).
- At one point I felt this - but in retrospect it was a good risk to take - although risky with the short time we had (it could have taken a lot longer for things and people to get going) (A).

Question 21: The workshop suggested an educational approach which would provide a valuable experience for students in elementary and high school.



Comments in "please elaborate" section

- It provided models, both in terms of total structure of the workshop and the various kinds of projects the subgroups undertook, and also in terms of attitudes and objectives (AE).

- The interdisciplinary. problem-solving approach is, I think, the way educational systems must go (AE).

- Yes, although I was not comfortable with the term "design" in this context, I thought these were some good examples of integrated learning (AE).

- ... as well as institutions of higher learning (FA).

- But only in the hands of experts who want to give this type of experience (SE).

- Many grade 12 urban geography courses in Kingston are doing what we did at the conference (one of my sons in Grade 12 just redesigned a part of the City, so that people - elderly, young, etc. - can <u>live</u> there) (SE).

- Provided this concept was phased in gradually - alternative education is suffering because there is no gradual phasing in period for administrators, parents, as well as children (1-3 years) (OE).

- Yes, and I have since used this approach most effectively (CD).

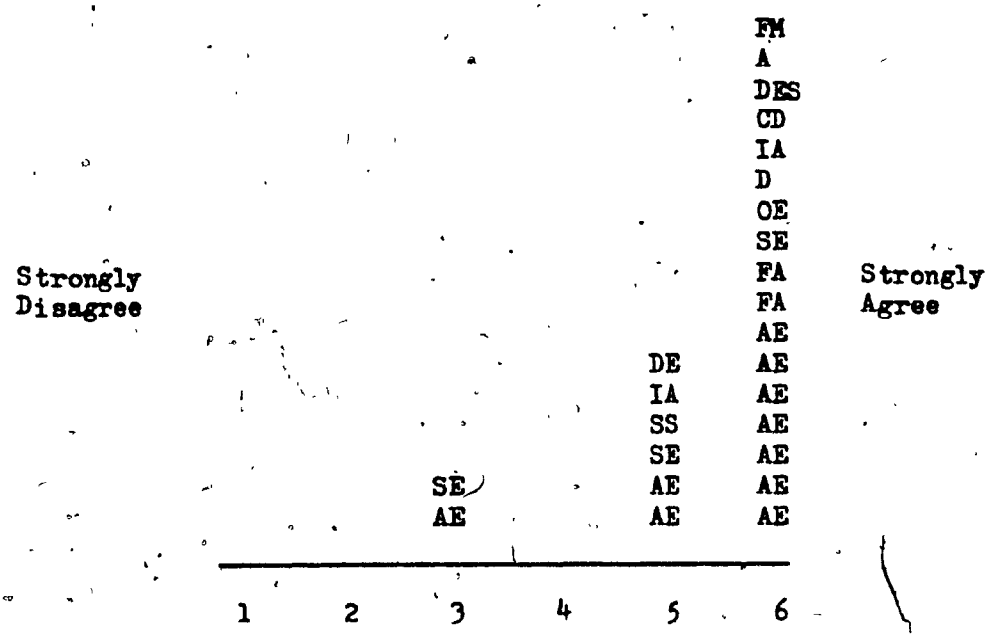
- Would need more explanation or at least sense of direction (D).

- Only if those attending became committed, and established some program as a subsequence of the seminars (IA).

- As long as it is seen as a possible, positive alternative among several and not "the" way to teach ... (IA).

- "Suggested" perhaps - more "experiences" than "structure". It would be dangerous in my opinion, to translate the opportunities we identified directly into a structure (A).

Question 22: It was helpful to have architects and designers involved with the educators.



Comments in "please elaborate" section

- During informal sessions and one or two presentations related to product design (AE).

- Because both professions tend to be multi-disciplinary, they provided a common ground in the communication between the extreme of the arts and the sciences (AE).

- Partly because they are involved in different problems, which benefit from an interdisciplinary problem-solving approach; partly because none of them seemed to know what happens in schools and that an attempt is being made to change them; their expertise was useful too (AE).

- Yes, educators are too often divorced from practitioners (AE).

- ... like to see more representation from other professions using designers (FA).

- Non-teachers tend to try to say how teaching should be done, instead of giving insights into their own expertise (SE).

- I enjoyed working with the architect from B.C. (SE).

- I liked talking to the architect from B.C. I have used his sketches in my own classes before they investigate "environmental" math (SE).

- Yes, because we could all collaborate and be part of the design process (CD).

- But of course - why not also actors, dancers, mimes, flower-arrangers, novelists, etc., etc., etc. (D).

- ... particularly the ones who see it as part of their own profession to be educators, missed "science" scientist (IA).

Question 23: There were too many different disciplines involved in the workshop.

	FM					
	A					
	IA					
	D					
	SS					
	OE					
	SE					
	SE					
Strongly Disagree	SE					Strongly Agree
	FA					
	FA					
	AE					
	AE					
	AE					
	AE	DES	AE			
	AE	DE	AE			
	AE	IA	AE	AE	SE	
	1	2	3	4	5	6

Comments in "please explain" section

- Perhaps too much domination by architects (AE).

- Can't be too many. The real world integrates everything - disciplines usually segregate (AE).

- Three disciplines: plastic arts, maths, architecture (AE).

- Design today needs a broad base (AE).

- How can there be too many? It can't be expected that one would relate to them all - it was essential to have variety to increase the likelihood of various possible combinations (AE).

- I'm all for interdisciplinary, so the more disciplines the better (AE).

- There was too little toleration of them (SE).

- Since design is "all-embracing" how could this be so? (IA).

- There couldn't have been, practically by definition (A).

Question 24: The artists, scientists and technologists worked well together.

			CD	A		
			IA	D	FM	
Strongly			SS	OE	SE	Strongly
Disagree			SE	SE	AE	Agree
	DE		FA	AE	AE	
	DES		FA	AE	AE	
AE	SE	AE	AE	AE	AE	
1	2	3	4	5	6	

Comments in "please give examples" section

- In some cases I think in the materials group - all groups didn't include all three (AE).

- Just by the fact that they didn't consciously group themselves into professional cliques for project work (AE).

- I'm an artist. I didn't find that I was accepted, or presented myself, as an artist (AE).

- Where were the technologists? (SE).

- I would suggest that it read "the people worked well together, making use of their professional expertise when necessary" (SE).

- It was most worthwhile having an extended period of time to break down the barriers to direct dialogue (CD).

- I thought there was not enough effort made to make random working groups (IA).

- As this was a new experience for many, it was difficult to break the formal-informal division (IA).

- Perhaps because nobody felt threatened as they often do in other multidiscipline situations (A).

Question 25: Artists were peripheral to the workshop.

	FM					
	A					
	CD					
	D					
	SE					
Strongly	SE					Strongly
Disagree	SE					Agree
	FA	IA	DE			
	AE	SS	FA			
	AE	OE	AE			
	AE	SE	AE		AE	AE
	1	2	3	4	5	6

Comments in "please explain" section

- Perhaps too much out of touch with the main purpose of art in education (AE).

- I'm not sure what you mean. If you mean painters and sculptors in the traditional sense, then yes (AE).

- I think they provided a central focus, but that's because I identify myself as an artist (AE).

- I can't answer this. Perhaps some were - some definitely weren't (AE).

- Answer for 25 and 26. Both of these statements are true to the degree that the problem (I thought) being worked on was how to rise above professions, to ultimately change the world, and that is good (AE).

- They were essential, just as the others were (A).

Question 26: Scientists were peripheral to the workshop.

	FM					
	A		IA			
	CD		DE			
	D		SE			
Strongly	SE		FA			Strongly
Disagree	AE		FA			Agree
	AE	IA	AE			
	AE	SS	AE			
	AE	SE	AE	AE	AE	
	1	2	3	4	5	6

Comments in "please explain" section

- They were to me - peripheral but necessary - given more time, plus additional projects (and energy), I may have become involved more with scientists and technologists (AE).
- I was much less aware of the scientists (AE).
- Maintained their balance (SE).
- Not for me to say as a scientist (SE).
- They were essential, just as the others were (A).

Question 27: It was important for participants to have to generate their own projects.

					FM	
					A	
					CD	
					OE	
					IA	
					SS	
					SE	
					SE	
Strongly					SE	Strongly
Disagree					FA	Agree
					FA	
					AE	
					AE	
					AE	
					AE	
					AE	
					AE	
			DE	IA	AE	
	DES		D	AE	AE	
	1	2	3	4	5	6

Comments in the "Why" section

- Because they could choose issues and approaches central to their concerns and appropriate to their own way of working (AE).

- Because the designing of the project involves certain mental processes which everyone should go through (AE).

- I have already stressed the importance of active participation (in the answer to earlier questions). This should also include choice of topic, if it is to be of value (AE).

- ... people work best at something for which they have an interest. True, designers must be intrinsically curious, therefore very little direction should be required for specific projects (FA).

- Not before I got to know the other participants - you can't integrate until you have a group (SE).

- Yes, because we were then forced to deal with issues which were most significant to us as people (CD).

- This could have been supplemented by other approaches (D).

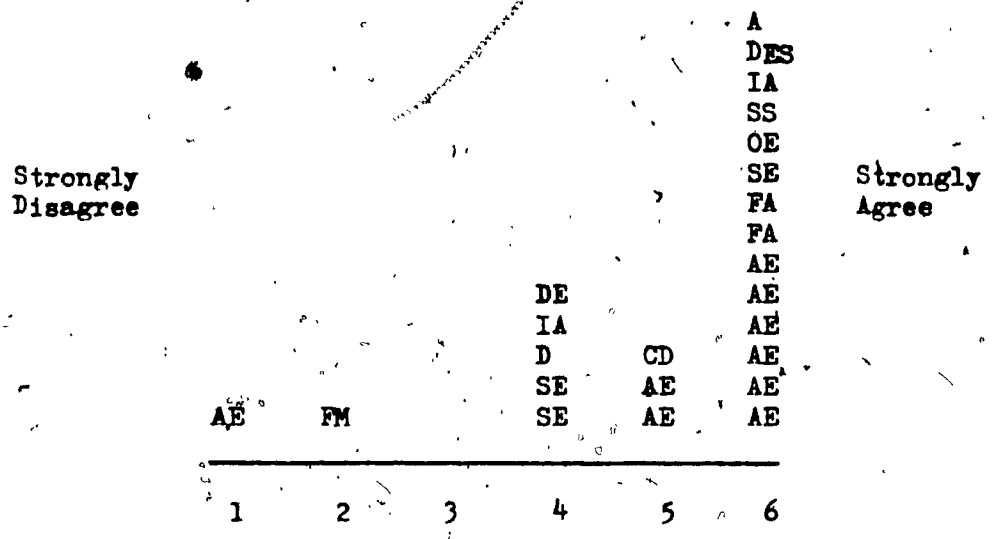
- Because little target setting/direction for activities came from organiser (IA).

- ... to interpret and apply concepts presented in a meaningful context (IA).

- It's the only way to really learn, to commit, to communicate, to collaborate, to remember (A).

- Provides a focal point, or specific objectives, to be attained. This generates planning and co-operation (OE).

Question 28: It was important for each group to explain their project to everyone else.



Comments in "please explain" section

- The presentation aspect helped clarify ideas, as well as providing closure to the project (AE).
- I enjoyed this very much. You could see the thought that went into each undertaking (AE).
- So that everyone could benefit from what others did (AE).
- Yes, if only for the purpose of sharing some of their experiences and ideas (AE).
- It's good to synthesize or evaluate an experience, and to get feed back from others. It helps to clear up what the real goals and products were ... (AE).
- If they didn't they missed the fundamental concept of sharing of information and experience (AE).
- It was important to try, but the projects were so far removed from the "real thing". This kind of thing happens in elementary school art programs also (SE).
- I found myself under fire in the explanation period, and did a poor job of it (SE).
- To share learning experiences, and allow everyone to see how their objective was selected and obtained (OE).

- Yes, because we need to extend our visions to external planes (CD).
- Otherwise the conference would have fizzled out completely (D).
- It was at least one bit of structure (Des).
- To gain insight into variety and range of interpreting of design (IA).

Question 29: The afternoon at the farm was an important part of the workshop.

						FM DES CD SS OE SE
Strongly Disagree						FA FA
					A	AE
					IA	AE
					IA	AE
				DE	SE	AE
				SE	AE	AE
			AE	AE	AE	AE
	1	2	3	4	5	6

Strongly Agree

Comments in "Why" section

- It dealt with the social, psychological and emotional aspects of interaction - also brought communication to the sensory level which can be very powerful (and it was) (AE).
- It broke down distance between persons, also made one confront self, forced co-operation and support between self and others (CD).
- Brought people together in a very special way (OE).
- This was the only time that people forgot their "position" and role (DE).
- It extended one's capacity to communicate in new ways (IA).
- At that particular farm. I really admire the way the professor was able to open up the area and offer so much freedom and comfort for the group (AE).

- It helped people start on themselves as a source of integration - which is where the learner must start (AE).

- This put another dimension on the conference. It provided a relaxed setting to talk to other participants. (There was one activity which was just a little long for me.) (SE).

- It was a good togetherness day. One saw people in new situations and how they responded in a new situation (AE).

- As an ice breaker (SE).

- OK for opportunities to develop sensory experiences (AE).

- ... except that it could and should have preceded the session in general - communication skills emphasized through first hand experience. Design is about people (AE).

- It was stimulating and well arranged (AE).

- Yes, I really felt this a valuable and enjoyable experience (AE).

- Not very much. The experience ... was very precious to me, but I'm not sure it was relevant to the workshop (AE).

- It helped in several ways:

1. It was a pleasant setting and loosened people up.

2. It sensitized some to "outdoor" education.

3. It stimulated some (me included) to look for opportunities to use the "natural" environment as a design awareness tool.

P.S. I'm still not sold on <u>all</u> these "fun and games" that were presented, and I think they should be used by <u>real</u> pros in more controlled situations - fortunately no one got "hurt" - physically or otherwise (as far as I know) - but I sure hope some didn't go back and try to make a direct transfer with their students.

The best parts were those directly related to environmental discovery (as opposed to "self-discovery") (A).

SUMMARY OF THE RESPONSE

The purpose of this evaluation is to assess four main aspects of the workshop, the participant's recollection of the event, the aspects they considered the most successful, the aspects they considered the least successful, and the extent to which the workshop effected changes or new developments in the programs they teach.

In answering the questionnaire, participants did not group along disciplinary lines and their answers did not indicate that any one discipline responded more or less favourably to the event than any other.

Two aspects of the event were identified as making the greatest impression and were considered the most successful: first, the way the many different disciplines worked together and second, the active participation on the part of those who attended.

In the answers to the first three questions in the essay section, there are twenty-one comments on the successful integration of the disciplines. In these answers participants, in making an effort to elaborate, speak of the quality of the exchange between people, of warm and positive feelings, of the "ambience for co-operation", and of a feeling of friendship with people who had been total strangers a few hours before. The words "more human" and "more open-minded" are used in describing the working relationships. The ability to be both human and professional is given as a reason for the successful team work. Two participants describe how the members of their groups worked together.

Both commented on the fact that they needed to start from their own area of expertise before expanding into a freer and really creative exchange. The variety and different levels of involvement are mentioned, and the importance of the "creative, investigative atmosphere" and the "non-threat format of the events".

Several participants try to pinpoint more precisely what they had learned. They mentioned the value of working with and observing minds which work differently; scientific or artistic, social or analytic, empiricist or subjectivist, practitioner or teacher. Some mention finding unexpected similarities between the working methods of different disciplines.

Two participants stress that being presented with many solutions to the same problems illustrated the concept of unity in diversity and provided an opportunity for points of view to be confronted and clarified. Another participant comments on observing the extent to which people see the world differently and the necessity of learning how others see the world in order to grasp the meaning of self-concept and how it affects our way of being.

In answering the questions in the structured section of the questionnaire, twenty-two out of twenty-four participants indicated that they did not consider any of the disciplines peripheral to the workshop and that there were not too many different disciplines involved. Particularly positive support was given for the inclusion of designers and architects. Seventeen participants strongly agreed that the inclusion was helpful, six agreed a degree less strongly and only two disagreed (by the minimum amount).

Eleven answers in the essay section mentioned the value of being able to participate actively in the workshop. In the structured section, twenty-three out of twenty-four agreed with the statement that it was important for participants to have generated their own projects (nineteen agreed strongly), and only one disagreed. This was the statement with which there was the fullest agreement. In commenting on the active participation, one participant mentions that the good feeling between people was generated by actually doing projects rather than theorizing about them. Two others commented on the satisfaction of being able to work as a group and accomplish something rather than just making resolutions and arguing. Twenty-three agreed with the statement that it was important to explain the projects to everyone else and several people commented on the imaginative quality of the presentations.

In the essay question asking for insights gained during the event, three participants, a science educator, an art educator and an industrial arts specialist, mentioned that they realized the importance of considering emotional and sensory factors in discussing design concepts.

Participants also indicate strong support for the afternoon at the farm. Twenty-three out of twenty-four felt that it was an important part of the workshop. In the structured section there were more comments elaborating on this statement than on any other. This included such comments as "It broke down distance between persons" and "It extended one's capacity to communicate in new ways".

The six participants who were lukewarm in their assessment of the value of the workshop did not go to the farm on the first afternoon. One of these mentioned three times in his questionnaire that he felt

excluded by cliques and was the only one to do so. Another was the only person to mention the presence of the film unit. His comment was critical. Two commented that subject integration between the disciplines was superficial.

In answer to the question which specifically asked for comments on the least successful aspects of the workshop, six people (the most to be in agreement) felt that the lectures had been the least successful. The other criticisms that were supported by more than one comment referred to poorly defined objectives and the lack of follow up.

The essay question that elicited the greatest uniformity and exuberance was the one which asked how this workshop compared with other workshops and conferences. Replies included descriptions such as "2000% better", "most personally rewarding", "still remains the most influential", "atmosphere far excelled anything attended to date", "far more creative and open people". The least positive comments came from a scientist who felt it was about the same as other workshops, and an industrial art educator who felt that it needed more self-directed targets. The other twenty comments were positive.

In the structured section of the questionnaire, twenty-three considered the workshop a valuable learning experience and one which was relevant to design education.

In answering the essay questions asking if the workshop influenced existing or new programs, twenty-four out of twenty-five participants felt that it had. Participants elaborated by giving twenty-nine examples of ways in which the workshop had affected programs. In two cases, participants mentioned working for three and a half years to have design programs implemented.

In answering whether they had stayed in touch with people they had met at Kingston, seven participants said they had not. Thirteen said they had stayed in touch and that they had maintained working contact with people they had not known before the workshop, as well as with people they already knew. Participants who answered the questionnaire also mentioned working with six of the fourteen who did not answer. One of these was mentioned in four of the answers and another in three.

Two participants did not answer any of the questions in the multiple-choice section of the questionnaire and three did not answer all the questions in this section.

Piaget, Jean. To Understand is to Invent: The Future of Education. (Trans. George-Anne Roberts), New York: The Viking Press, Inc., 1973, originally published 1948.

Robertson, Seonaid M. Rosegarden and Labyrinth: A Study in Art Education. London: Routledge and Kegan Paul, 1963.

Rowland, Kurt. Looking and Seeing. London: Ginn and Company Ltd., 1965.

Sommer, Robert. Design Awareness. San Francisco: Rinehart Press, 1972.

Sperry, R.W. "The Great Cerebral Commissure", Scientific American. Offprint No. 174, January 1964.

APPENDIX I

APPENDIX I

List of Participants

	Questionnaire Returned	Not returned
From Alberta		
Assistant Professor, University of Alberta. Previously art teacher. (AE)	X	
Associate Professor, Department of Secondary Education, University of Alberta. (AE)	X	
Art Educator, Art Department, University of Calgary.		X
From British Columbia		
Art Educator, Art Education Department, University of British Columbia, Vancouver.		X
Artist, 2705 West Second Avenue, Vancouver.		X
Architect, 6708 Angus Drive, Vancouver.		X
Social Studies Specialist (moved, could not be traced).		X
From Manitoba		
Associate Professor, Faculty of Education, University of Manitoba. Previously Elementary Teacher (concerned with Social Studies program). (SS)	X	
Professor, Faculty of Education, University of Manitoba. Previously art teacher. (AE)	X	
From New Brunswick		
Acting Consultant Art Education, Department of Education, Curriculum Branch, New Brunswick. Previously school teacher and Art Instructor and Co-ordinator at Teachers' College, Fredricton. (AE)	X	

	Questionnaire Returned	Not returned
From New Brunswick (cont'd)		
Consultant, Plastic Arts. Previously school teacher and professor at the Faculty of Education, Université de Moncton. (AE)	X	
From Newfoundland		
Psychologist, Department of Educational Psychology and Guidance, Memorial University, Newfoundland.		X
Art Consultant, Department of Education and Youth, Government of Newfoundland and Labrador.		X
From Nova Scotia		
Art Education Department, Nova Scotia College of Art and Design, Halifax. (Moved)		X
Assistant Professor and Chairman of the Art Education Division, Nova Scotia College of Art and Design. Previously high school teacher (Art and English). (AE)	X	
Associate Professor of Design, Department of Environmental Design, Nova Scotia College of Art and Design, Halifax. Previously designer. (DE)	X	
Co-ordinator of Child Development Program. Mount Saint Vincent University, Halifax, Nova Scotia. Previously University professor - Child Development. (CD)	X	
Vice Principal, Nova Scotia Teachers' College. Previously geologist and teacher trainer of math and science. (SE)	X	
Graphic designer. (Left country)		X
From Ontario		
Associate Professor (painting and design), Queen's University, Kingston. Previously designer. (FA)	X	

From Ontario (cont'd)	Questionnaire Returned	Not returned
Professor of Education (Science). Faculty of Education, Queen's University, also author. Previously teacher, consultant. (SE)	X	
Professor of Curriculum (Elementary School Mathematics), Faculty of Education, Queen's University. Previously teacher, Ministry of Education Consultant. (SE)	X	
Assistant Professor (Drama), Faculty of Education, Queen's University. Previously stage manager, drama instructor. (D)	X	
Department of Music, Queen's University, Kingston.		X
Professor Clinical and Field Studies, College of Education, Queen's University. (Part-time only and did not receive questionnaire.)		
Professor of Industrial Education, Department of Technical and Industrial Arts, Faculty of Education, University of Toronto.		X
Professor of Industrial Education, University of Toronto and Consultant to the National Design Council on Design Education. (IE)	X	
Art Educator, London Teachers' College, London, Ontario.		X
Outdoor Education Resource Teacher (including curriculum design). Department of Education, Peterborough, Ontario. Previously classroom teacher, advertising. Parks Design (on contract), author, columnist. (OE)	X	
Exhibition Designer, Ontario Science Centre. Previously production co-ordinator, architectural designer. (Des)	X	
Engineer, National Design Council. (Participated partially, did not receive questionnaire.)		

	Questionnaire Returned	Not returned
From Ontario (cont'd)		
Education Supervisor, Ontario Educational Communications Authority. Previously teacher and science consultant. (Now Superintendent of Education, Fort Simpson, N.W.T.) (FM)	X	
Consultant Visual Arts, Ontario Ministry of Education. Previously teacher, artist, musician. (AE)	X	
From Prince Edward Island		
Art Teacher, Junior High/Lecturer Art Education, Charlottetown, P.E.I. Previously a potter. (AE)	X	
From Quebec		
Associate Professor, Assistant Director, Division of Visual Arts, Faculty of Fine Arts, Concordia University, Montreal. Previously a designer. (FA)	X	
Professor of Art Education, Université de Québec à Montréal. Previously teacher of Plastic Arts at Secondary, CEGEP and University level. (AE)	X	
Professor of Art Education, Faculté des Sciences de l'Education, Université de Montréal.		X
Professor, Ecole d'Architecture, Université de Montreal. Researcher, Architecture and Planning Consultant. Previously architect and town planner. (A)	X	
Professor of Science Education, Faculty of Education, McGill University. Previously radar mechanic, physics teacher. (SE)	X	
Professor of Mathematics, Science de l'Education, Université de Sherbrooke.		X
Photographer (principally covering the workshop, did not receive a questionnaire).		

	Questionnaire Returned	Not returned
From Saskatchewan		
Sessional Lecturer, University of Regina. Previously Associate Professor, University of Saskatchewan. Head, Department of Commercial and Fine Art, Balfour Technical School. (AE)	X	
Associate Professor, University of Regina. Previously school administrator, recreation supterintendent, Elementary and High School teacher. Consultant for Open Education Strategies. (OE)	X	
From England		
Senior Educational Advisor, Department of Education, County Council. Previously Senior Research Fellow, University of Keele. (IE)	X	

The following participated in the workshop briefly:

Professor, Education Department, Althouse College, University of Western Ontario, London, Ontario.

Representative, Ontario Council for the Arts, 151 Bloor West, Toronto.

Chairman of the National Design Council's Education Committee, Ottawa.

Director General, Office of Design, Department of Industry, Trade and Commerce, Ottawa.

APPENDIX II

APPENDIX II

List of Returned and Non-Returned Questionnaires

Responses from:

Participants from Departments and Faculties of Education

	Returned	Total
Art Educators (AE)	11	17
Science Educators (some of whom also taught math) (SE)	4	4
Math Specialist	0	1
Outdoor Education Specialists (OE)	1	2
Social Studies Specialists (SS)	1	2
Drama Educator (D)	1	1
Industrial Arts Educator (IA)	2	3
Child Development Specialist (CD)	1	2
Total:	21	32

Participants from Departments and Faculties of Fine Arts, Music, Architecture and Design

Artists (FA)	2	2
Musician	0	1
Designer (DE)	1	1
Architect (A)	1	1
Total:	4	5

Practitioners who are not connected with an education institution

	Returned	Total
Designers (DES)	1	2
Architect	0	1
Artist	0	1
Film Maker (FM)	1	1
Total:	2	5
Grand Total:	27	42

APPENDIX III

Lydia Ferrabee ACID

17 Melbourne Avenue
Montreal 215, P.Q.
931-6315

Dear

I have compiled the enclosed questionnaire in an effort to assess the value and impact of the workshop on Design Education which you attended at Queen's University, Kingston, in August 1972. The questionnaire is going to all those who participated.

Could you please answer the questions as candidly and fully as possible, including any thoughts and memories which might be relevant. More pages can be added and additional documentation would also be welcome.

The answers will be considered as a whole and will not be attributed to the names of individuals in any public fashion. A summary of the findings will be available for anyone who is interested.

It would be very helpful if you could return the questionnaire as soon as possible.

Thank you very much for your help in this undertaking.

Sincerely,

Lydia Ferrabee

• Industrial designer and design journalist.

QUESTIONNAIRE ON: THE KINGSTON WORKSHOP ON DESIGN EDUCATION - AUGUST 1972

NAME: _____

ADDRESS (HOME) .....

..... Tel. No: .....

BUSINESS: .....

..... Tel. No: .....

PRESENT OCCUPATION: .....

PREVIOUS PROFESSIONAL OCCUPATIONS: .....

.....

I would like a summary of the finding: Yes ..... No .....

Please return to:

Lydia Ferrabee,

17 Melbourne Avenue,

Westmount,

Montreal, P. Q.

1) What are your most pronounced memories of the workshop? Please be specific.

Please use reverse if necessary

2) What insights did you gain from the event? Please be specific and relate your answer to the workshop events.

Please use reverse if necessary

3) What do you consider the most valuable aspects of the event?

4) What were the least successful aspects of the event?

Please use reverse if necessary

5) How did the workshop compare with other workshops or conferences you have attended? Please be specific.

6) After the workshop was it easier for you to communicate with, and work with, people in other disciplines? Please give examples.

Please use reverse if necessary

7) Did the workshop effect your programs or projects? Please give examples.

8) Did it effect new programs or projects for which you were responsible? Please give examples.

Please use reverse if necessary

9) Did the workshop effect other programs or projects indirectly? Please give examples.

10) Have you maintained contact with some of the people who were at the workshop? Please give the name of the person and the context of the exchange. Did you know them before the workshop? Had you worked with them before?

Please use reverse if necessary

Please answer the following questions by circling the number which indicates the degree to which you concur or disagree with the statement, and also by giving details wherever possible which will explain your answer.

		strongly disagree					strongly agree
11)	The workshop modified (changed/expanded/formed) my concept of the word design.	1	2	3	4	5	6

Please elaborate _____

_____

12)	The workshop provided me with an understanding of design education.	1	2	3	4	5	6

Please explain _____

_____

13)	I did not understand the relationship between the workshop and design education.	1	2	3	4	5	6

Please explain _____

_____

14)	The workshop increased my understanding of environmental design as something that involves all disciplines.	1	2	3	4	5	6

Please explain _____

_____

15)	The concept of design education on which the workshop was based was too general.	1	2	3	4	5	6

Please explain _____

_____

16)	The workshop helped me to relate my discipline to others within the framework of design education.	1	2	3	4	5	6

Please explain _____

_____

		strongly disagree					strongly agree
17)	The workshop helped me communicate with people in other disciplines.	1	2	3	4	5	6

Please give examples _____

_____

18) The workshop was a valuable learning experience. 1 2 3 4 5 6

Please elaborate _____

_____

19) The workshop had little to contribute. 1 2 3 4 5 6

Please elaborate _____

_____

20) Participants were provided with too little direction. 1 2 3 4 5 6

Please explain _____

_____

21) The workshop suggested an educational approach which would provide a valuable experience for students in elementary and high school. 1 2 3 4 5 6

Please elaborate _____

_____

_____

22) It was helpful to have architects and designers involved with the educators. 1 2 3 4 5 6

Please explain and give examples _____

_____

		strongly disagree					strongly agree
23)	There were too many different disciplines involved in the workshop	1	2	3	4	5	6

Please explain _____

_____

24)	The artists, scientists and technologists worked well together.	1	2	3	4	5	6

Please give examples _____

_____

25)	Artists were peripheral to the workshop.	1	2	3	4	5	6

Please explain _____

_____

26)	Scientists were peripheral to the workshop	1	2	3	4	5	6

Please explain _____

_____

27)	It was important for participants to have to generate their own projects.	1	2	3	4	5	6

Why? _____

_____

28)	It was important for each group to explain their project to everyone else.	1	2	3	4	5	6

Please explain _____

_____

29)	The afternoon at Bob Peih's farm was an important part of the workshop.	1	2	3	4	5	6

Why? _____

_____

Please use reverse if necessary

Lydia Ferrabee ACID

17 Melbourne Avenue
Montreal 215, P.Q.
931-6315

Cher

J'ai composé le questionnaire ci-joint dans le but de déterminer la valeur et l'impact de l'atelier sur l'enseignement du design auquel vous avez assisté à l'Université de Queens à Kingston en août, 1972. Le questionnaire sera envoyé à tous ceux qui étaient associés avec ce projet.

Veuillez s'il vous plaît répondre aux questions aussi ouvertement et complètement que possible, en tenant compte de vos idées personnelles et de vos experiences respectives. Les informations seront considérées en tant qu'entité et elles ne seront pas attribuées aux noms des individus. Soyez certains que ces informations resteront strictement confidentielles.

Veuillez retourner le questionnaire le plus vite possible.

Merci bien de votre co-opération.

Sincérement

Lydia Ferrabee

• Industrial designer and design journalist.

QUESTIONNAIRE SUR: L'ATELIER DE KINGSTON SUR L'ENSEIGNEMENT DU DESIGN - AOÛT 1972

Nom: _____

Adresse (résidence) _____

_____ Téléphone _____

Bureau: _____

_____ Téléphone _____

Emploi actuel: _____

Occupations professionnelles précédentes: _____

_____

J'aimerai un résumé de votre résultat; oui _____ non _____

Veuillez retourner à:

Lydia Ferrabee
17 Melbourne Ave.,
Westmount,
Montreal, P.Q.

1) Quels sont vos souvenirs les plus prononcés sur l'atelier? Soyez précis.

Prière d'utiliser le verso si nécessaire

2) Quelles conclusions bénéfiques avez-vous pu tirer de cet événement? Veuillez spécifier et rapporter vos réponses aux issues et faits de l'atelier en question.

Prière d'utiliser le verso si nécessaire.

3) Quels sont les aspects de cet événement que vous jugez comme précieux?

4) Quels furent les aspects les moins satisfaiants de l'événement?

Prière d'utiliser le verso si nécessaire

5) Comparé aux autres ateliers aux quels vous avez assisté, comment jugez-vous celui-là Soyez précis.

6) L'atelier terminé, était-il plus facile pour vous de communiquer et de travailler avec des individus sur d'autre disciplines? Donnez des exemples.

Prière d'utiliser le verso si nécessaire.

7) L'atelier a-t-il en quelque sorte affecté vos programmes on projets? Veuillez donner des exemples.

8) L'atelier a-t-il affecté certains nouveaux programmes on projets sur lesquels vous étiez responsable? Veuillez donner des exemples.

Prière d'utiliser le verso si nécessaire.

9) L'atelier a-t-il en quelque sorte affecté indirectement d'autres programmes ou projéts. Donnez des exemples.

10) Avez-vous maintenu quelque contact avec certaines personnes ayant assistées àl'atelier? Prière de donner le nom de la personne et le contenu de cet échange. Les connaissiez-vous avant l'atelier? Avez-vous deja travaille avec des personnes auparavant?

Prière d'utiliser le verso si nécessaire.

Veuillez répondre aux questions suivantes en encerclant le chiffre qui indique le degré auquel vous partagez on pas la phrase énoncée.

	Je m'oppose catégoriquement					Je consens fortement
11) L'atlier a modifié (changé, agrandi, formé) mon idée sur le design du mot.	1	2	3	4	5	6
12) L'atelier m'a offert une compréhension plus complète suri'enseignement du design.	1	2	3	4	5	6
13) Je n'ai pas compris la relation entre l'atelier et l'enseignement du design	1	2	3	4	5	6
14) L'atelier a augmenté ma compréhension sur le design d'environnement.	1	2	3	4	5	6
15) Le concept de l'enseignement du design présenté par l'atelier, était-il trop général.	1	2	3	4	5	6
16) L'atelier m'a permis de relater ma disciline à d'autres au sein même du cadre de l'enseignement du design.	1	2	3	4	5	6

Prière d'elaborer _____

_____

Prière d'expliquer _____

_____

Prière d'expliquer _____

_____

Prière d'expliquer _____

_____

Expliquer _____

_____

Expliquer _____

_____

	Je m'oppose catégoriquement					Je consens fortement
17) L'atelier m'a aidé àcommuniquer avec des personnes sur d'autres disciplines.	1	2	3	4	5	6

Donnez des exemples _____

_____

18) L'atelier fut une experience d'apprentissage des plus précieuses. 1 2 3 4 5 6

Elaborer _____

_____

19) L'atelier avait pue à offrir. 1 2 3 4 5 6

Elaborer _____

_____

20) Les participants n'étaient pas pourvus d'explications directives. 1 2 3 4 5 6

Expliquer _____

_____

21) L'atelier suggérait une approche éducative capable d'offrir une experience utile et riche aux étudiants dans l'élémentaire et la secondaire. 1 2 3 4 5 6

Elaborer _____

_____

_____

22) C'était bien utile d'avoir la presénce d'architectes et d'designers parmi les éducateurs. 1 2 3 4 5 6

Expliquer et donner des exemples _____

_____