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Fifth Dimension and 4-H: Complementary Goals and Strategies

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Introduction

This monograph introduces the "Fifth Dimension," specially designed after-school programs that involve cooperation between local community organizations such as Boys and Girls Clubs and YMCA's, and colleges and universities in their neighborhoods. After a decade of implementation and evaluation experience with a variety of communities and age groups, we have found the Fifth Dimension to be effective in addressing many of the problems discussed in this monograph series in recent years.

We believe that the Fifth Dimension program could be a useful addition to 4-H efforts to develop sustainable, pro-social activities for children and adolescents. What follows is a normative description of our model system, some examples of how our work engages participants of different ages and backgrounds, and a discussion of the developmental outcomes that we try to foster (or intervene against). After sketching the terrain of the Fifth Dimension, we

conclude with a brief discussion of the methods used to evaluate the effectiveness of our programs and some key findings.

Normative Description

In a prototype Fifth Dimension system (local names for them vary), a dozen or more 6-14 year old children encounter a large variety of off-the-shelf computer games and game-like educational activities. As a rule, the Fifth Dimension room contains a variety of

computers (Mac and IBM; low-end and high-end) at a ratio of one computer for every 2-3 children. The computer games are the way individual games (or activities such as origami, chess, Boggle) are experienced by the children. "Task cards" or "adventure guides" accompany each game or activity, to help participants get started, to specify expected achievements, and to provide evidence necessary for obtaining credentials as an expert. The task cards also provide a variety of obligations to write to someone, to look up information in an encyclopedia, or to teach someone else what has been learned.

A Wizard

There is a person who acts as a "make-believe" Fifth Dimension Wizard who lives in the Internet, writes to the children, chats with them via modem, and acts as their patron. The Wizard has a home page, and helps the children gain access to the World Wide Web, where they too have a home page that displays their creative work. Each Fifth Dimension has special ceremonies (e.g. birthdays for the Wizard) that promote interaction with other Fifth Dimension sites in other locales around the country and the world.

The Children

Children typically visit a Fifth Dimension on a drop-in basis. Some children spend four to six hours per week of their afterschool time participating in the Fifth Dimension, while others may only come once a week for a few hours. Opportunities and constraints vary across locations, seasons, populations and sites. Girls outnumber boys in some Fifth Dimensions, even where larger club setting activities are dominated by boys.

a part of a make-believe activity system, which transforms

At some locations, adults expect the children to participate regularly in the Fifth Dimension and arrange for them to do so, while at other sites, children are free to choose if, and for how long, to participate, with homework, basketball, reading or other activities as some of their alternatives. Many children enter the Fifth Dimension directly after school or homework sessions, and remain there until their parents or school transportation services take them home.

A Site Coordinator

In our model system, there is a site coordinator who greets the children and supervises the flow of activity in the room. This person is trained to recognize and support the pedagogical ideals and curricular materials that mark the Fifth Dimension as a different way for kids to use computers, and for adults to interact with children. The site coordinator monitors the balance of education and play in interactions between children and participating undergraduates. A site coordinator may be employed by the community institution, and may have taken university courses that support the Fifth Dimension, but this not the case everywhere. Arrangements for funding the site coordinator position vary. Sometimes the partner university or college's research or outreach funds cover the salary to help fund a Fifth Dimension in a setting with modest resources. In other cases, site coordinator salaries are absorbed into the operating budget of the community program.

The Undergraduates

In addition to the presence of a mysterious Wizard who writes to them and who pays attention to their progress through the maze

of activities, the chief draw for the children is the presence of university and college students who are there to learn and play with them. In our model, an important feature of the Fifth Dimension is that the participating college students are enrolled in an intensive research methods course focused on fieldwork in the community.

At UC San Diego, the university course associated with student participation is an intensive, 6 unit class that emphasizes deep understanding of basic developmental principles, familiarity with the use of new information technologies for organizing learning, and methods for collecting and analyzing the processes that undergraduates help put into play. Students are treated as, and act as, junior researchers. They write detailed clinical field notes after each session with the children. These notes are read and critiqued by the professor and his teaching assistants.

The class meets twice weekly to discuss assigned readings and to evaluate the scholarly articles they read at the University for their fit with their own field experiences with the children. Students also discuss their work with students in other Fifth Dimension-linked courses in the UC system through the UC system's Distance Learning network. Finally, the undergraduates write papers tracing the development of individual children, the relative effectiveness of different games, differences in the ways that boys and girls participate in the activities, or other developmental topics.

Why after school?

We focus on after school time for several reasons. First, our research has revealed a broad desire to increase the number of hours per day when children are engaged in academic tasks. Second, the changing

nature of adult work has brought about significant changes in the organization of family life that make it difficult for adults to provide supervision for their children until 5 or 6 in the evening. Third, after school institutions are generally funded at a low level because they depend heavily on philanthropic giving at the local community level. This form of support works well for sports programs, where adults volunteer their time to supervise 25 or so youngsters a few days a week, but educational concerns don't fare as well.

In the culture at large, several core after-school institutions, such as Boys and Girls Clubs, YMCA's, and church clubs manage loosely supervised, low overhead efforts that provide a safe space, a few supervised special activities, and a great deal of free play. The turnover of staff is rapid because only a few members of the institution are paid a full-time, albeit low, wage. Often teenagers who have coached in a sport league are hired to provide programming and supervise the children. These institutions do a great service to the community along many dimensions and the term "education" is likely to appear in their list of goals. However, educational activity is only fitfully present, as it is expensive to maintain. The Fifth Dimension provides a way to increase the educational programming of such institutions without substantially increasing the costs of operation.

Introducing education into the after school hours is not an easy achievement. After school is, traditionally, play time. It is the space between schoolwork and homework (which currently amount to about the same thing). But there is a great need to arrange for children, as a part of their playful, after school hours, to engage in the kind of educational activity that might boost their

chances of attending their local college or university.

One obvious strategy, made more potent owing to the revolution in computer-based games and telecommunications, is to arrange for them to learn while playing. Alongside learning fearlessness, strategic thinking, and social responsibility on the soccer field, we arrange for children to sign up for a form of play in which they learn perseverance, the basic content of many valued intellectual domains, and the ability to organize one's problem solving skills in collaboration with others.

Evaluating the Fifth Dimension

The Fifth Dimension has intertwined goals: to grow, sustain, and propagate the program model, which was once a local experiment and now extends to a statewide, nationwide and worldwide network of sites. This expansion has required our researchers and implementers to bring tools from the disciplines of Anthropology, Education, Psychology, and Communication to the task of evaluating and comparing outcomes in a geographically and demographically diverse network of participating sites.

From 1994 to 1997, the Andrew W. Mellon Foundation supported our work as a nationwide "Distributed Literacy Consortium." In order to grow, sustain and propagate the system, we needed to know how the model worked in a variety of contexts, who was benefiting from participation, and what aspects of the model could be adapted to serve the needs of other populations of children, undergraduates and scholars.

A Language and Culture Evaluation Team has compared aspects of site cultures that are expressed in language habits and

routines of three different sites. Their site profiles describe the cultural practices of several sites and how each site has adapted the principles of the Fifth Dimension. Their analyses also explore the strategies used by bilingual children and undergraduates in deciding whether and when to use English or Spanish in their interaction and writing as they complete Fifth Dimension tasks.

A Cognitive Evaluation Team documented improvement in children's demonstrations of verbal, mathematical and technical ability, as well as gains in children's abilities to follow written instructions as an effect of Fifth Dimension participation. This team found evidence that children transfer their Fifth Dimension acquired experience to other problem solving domains. Children showed strong post-Fifth Dimension performance on school-like tasks and in North Carolina, on the state-mandated end of grade tests.

Finally, the Process Evaluation Team (which includes the authors of this article) videotaped the interactions between children and undergraduates playing computer games in order to examine how the Fifth Dimension creates conditions for learning. This team showed that undergraduates and children brought different kinds of skill to their interactions around computer games in ways that enhanced both partners' ability to meet the challenges of a game or a task. The other task of the Process Evaluation Team is to document the longer term and larger scale process of developing, sustaining and disseminating the Fifth Dimension model systems.

What We Have Found

After several years of implementing and evaluating the Fifth Dimension, we have achieved a network of places where kids

can be responsible members of a real and yet unreal, playful world with a constitution, rules, standards of conduct and success. These rules are up for negotiation with more capable peers—the undergraduates—who work with kids and with each other traversing the maze, seeking and exploring, learning how to observe and reflect. The undergraduates are *not* there to keep the kids "busy" or to "watch" them, but rather to play with them in a learning environment.

We also have demonstrated that the Fifth Dimension supports the acquisition of social competence and pro-social behavior in several deliberate ways. We built a multiple-literacy perspective into the play-world. Practicing bilingualism, computer use, giving oral and written accounts of progress, being skilled in communicating and collaborating with a wide variety of people incorporated as essential tools for navigating paths to expertise. Even where there is friendly competition, expertise flows easily in different directions in the Fifth Dimension. No one knows everything, and children find out that often times their own success is measured less by "beating the other person" than on sharing their mastery of a new skill.

The play-world offers numerous opportunities for children, undergraduates and the Wizard to engage in discussions of rules and norms of behavior, in the world and in the Fifth Dimension. Children who have been coming to the club for years are expert at things that baffle the new undergraduates each academic quarter: how to be a good citizen in the Fifth Dimension, how to move through the maze, how to work the computer, and how to play a particular game. Undergraduates draw upon their own general life-skills and problem-solving experience to help kids coping with life's

challenges in and out of the Fifth Dimension while learning the skills that are "old hat" to computer-wise children.

Kids who experience themselves as "nobodies" or as "outcasts" in other social and educational settings become part of a play-world that deliberately eliminates issues of sex, ethnic class and age that may undercut their development elsewhere in their daily lives. The journey to Fifth Dimension literacy offers lots of enticements and help to escape the pressure to assign and receive labels or to engage in the sorts of activities that reflect and lead to forms of emotional or physical violence.

One general principle promotes good citizenship in the Fifth Dimension: the greater one's level of responsibility to others in the system, the greater the degree of freedom one has to choose what to do next. Choices that involve helping other people, teaching others, and writing to the Wizard are behaviors that lead to the designation of expert status, thus becoming a "Young Wizard's Assistant." Choices that lead children to try new games or new levels of activity, and work with new people result in more choice and freedom than do choices to take an "easy route."

The Fifth Dimension offers children another chance to work on subjects or concepts that often elude them in other educational contexts. There is ample opportunity for safe, supported engagement with problems and principles of logic, math, reading, writing, planning, and reflecting for the child who experienced anxiety with these subjects in the classroom or in other situations.

The play-world is saturated with opportunities to understand the balance of responsibility, choices, and chance. The

presence of the elusive Wizard (who is neither old nor young, man nor woman, neither in control nor in the dark) allows undergraduates to help the kids formulate critical ideas without anyone being put on the spot or in the position of "the authority." Thus, the presence of the Wizard allows undergraduates to honestly say when they don't know the answer, and for children to see that they have something to contribute to the learning of college students. While undergraduates are learning to be competent in relations with children as learners and teachers, they are also gaining extensive field research experience, technical expertise and an opportunity to reflect on their own development.

Sustaining the Intervention Together: Returns on Investment

In other writings, headway has been made on the central questions of project *efficacy*: (1) Why successful programs are not widely implemented on a routine basis, and (2) Why it is that successful, even highly acclaimed programs are short lived (Cole, 1996b).

We have made a direct study of the dynamics of the process by which apparently successful innovations are eventually extruded from their institutional settings. At first glance, it seems clear that the problem has a purely economic base: As long as a program is accompanied by its own source of money, it survives. Death comes at the point when the local institution has to bear the costs of the innovation. To solve this problem, we have tried to develop a system in which additional costs to exiting institutions are low requiring only small extra monetary resources. As a consequence, costs can largely be absorbed by the operating budget of the institutions

doing what they are already doing, but doing it better because they have a partner with whom to split the work.

Here, the lifeblood of this specially designed activity for use by after school community institutions becomes clear. The activities in the community depend critically on a source of highly educated, highly motivated, youth who are able to play the role of Wizard's Assistants who work for experience and grades, not wages.

The presence of college students entering playfully into the Fifth Dimension activities with their 6-14 year old companions entirely changes the educational possibilities in the setting. Despite differences across Fifth Dimensions in different regions of the globe and with different institutions, the presence of the college students attracts children to the Fifth Dimension and provides it the extra enrichment needed to convert "playing computer games" into something with a good deal more social and psychological potential.

What appears to make the Fifth Dimension a good candidate for sustained university-community educational partnerships is that it provides a genuinely reciprocal, win-win situation. Universities win for several reasons: their undergraduates are provided a model educational experience which has a big impact on their lives and delivers on the universities repeated pledges to help the local community. In addition, the unique laboratories provided by the community institutions could not be duplicated on university grounds for a fraction of the price, if at all. The Community institutions win because they get the ongoing attention of university professors and their students throughout the academic year, and a level of staff enrichment that would otherwise be far beyond their budgets. We have detailed the

growth of these partnership nodes in our "Annual Reports to the Mellon Foundation" and in several conference papers. Cole's (1996a) book *Cultural psychology: A once and future discipline* offers an accessible and thorough treatment of the ideas behind the Fifth Dimension program.

In developing and propagating the Fifth Dimension model, we have developed a strategy that is collaborative and sustainable to the degree that each party to the interaction perceives a return on their investment that matches or exceeds the contribution they make to the project. Following the example of 4-H, which has historically led the way in enriching children's lives in after school hours, it is our hope that ways will be found to expand Fifth Dimension efforts beyond UC and CSU and community institutions of all kinds.

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