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ABSTRACT

The arguments are presented for and against the Hawaii 3 on 2 program, a team-taught, flexible, individualized instructional program for primary grade students. This report is based on an advocate-adversary evaluation design. The advocate team concluded that: the program is working effectively: teachers, principals, and parents support the program: lack of higher test scores than those obtained in self-contained classes is attributable to deficiencies in the tests: some assistance should be given to less effective teaching teams: criterion-referenced tests should be used: and organizational structure is effective in meeting students' needs. The adversary team concluded that: students in the program do not show greater achievement gains in reading, mathematics or in attitudes, based on achievement and attitude test results; parents and teachers did not notice discernible differences between the students in 3 on 2 classes and in self-contained classes; the program was not put through experimental stages; the objectives are ambiguous: individualization can be carried out as effectively in self-contained classes as in 3 on 2 classes; and the program costs cannot be justified. Each evaluation team further supported its observations by rebutting the other team's observations. (MH)

EVALUATION REPORT 1976-77

Volume II
Team Interpretations and Recommendations

Assessment Program

Northwest Regional Educational Laboratory
710 S.W. Second Avenue, Portland, Oregon 97204
January 1977

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ACKNOWLEDGMENTS

This evaluation of the Hawaii 3 on 2 Program has required the time and attention of many people.

Teachers have graciously tolerated the intrusion of evaluators in their classrooms; they have spent considerable time answering questions of interviewers and responding to questionnaires. Students have taken achievement tests and attitude inventories and responded to questions of interviewers. Principals have answered questionnaires, scheduled classroom visitations and interviews with themselves, teachers, pupils and parents, and they have assisted in numerous other ways. District superintendents and supervisory staff members have facilitated the work of the evaluation team in every way which they were asked. Parents of the students, state government officials, and many other citizens of the state have generously taken time to talk with the evaluators.

Superintendent Charles G. Clark and the State Board of Education should be complimented for their insistence on a completely objective external evaluation of the 3 on 2 Program. Department of Education administrators and staff in charge of the program should be applauded for their acceptance and support of the purposes for the evaluation.

Special appreciation should be extended to Ronald L. Johnson and his entire staff in the Evaluation Section for frequently reordering their own professional work to support the work of the evaluation team.

The Northwest Regional Educational Laboratory also would like to acknowledge the invaluable contribution of four external evaluators who served on the evaluation teams. Dr. W. James Popham, Professor of Education at the University of California, Los Angeles; and Dr. Arliss L. Roaden, President of Tennessee Technological University, have directed the

two opposing evaluation teams. Dr. Dale Carlson, Director of Assessment at the California Department of Education; and Dr. W. Todd Rogers, Associate Professor of Educational Psychology at the University of British Columbia, have played key roles on their respective teams. Each of these individuals has made excellent contributions and brought special talents to this evaluation effort. Dr. Michael J. Patton of the University of Minnesota also served as a consultant and provided useful insights in open education and team teaching.

Finally, the openness and candor of the educators and citizens of Hawaii with whom the evaluators have interacted have been refreshing. It is hoped that this evaluation will serve well Hawaii's continuing efforts to improve educational opportunities to children.

INTRODUCTION TO THIS VOLUME

This document is the second in a series of three reports of the 1976-77 evaluation of the Hawaii 3 on 2 Program. Volume I, Technical Report, is a comprehensive, detailed report which describes the evaluation design, data collection and analysis procedures and results. Volume I is intended for the limited audience who require detailed information about the specifics of any aspect of the evaluation.

This volume, Team Interpretations and Recommendations, contains the major arguments for and against the 3 on 2 Program. Because of the high visibility of the 3 on 2 Program, the Hawaii Department of Education requested a comprehensive evaluation to assess not only the Program's strengths but also the deficiencies. This request led the Department and the Northwest Regional Educational Laboratory to select the advocate-adversary approach as the basis for evaluating the 3 on 2 Program.

The purpose of the volume is to present the reports of the Advocate and Adversary Teams as well as their rebuttals.

The purpose of Volume III, Executive Summary is to provide an overview of the procedures, findings, interpretations, and recommendations given in Volumes I and II. It is anticipated that the Executive Summary will have the broadest general appeal and distribution.

Organization of This Volume

The remainder of this volume contains the following sections:

1. The report of the Advocate Team
2. The report of the Adversary Team
3. The rebuttal of the Advocate Team
4. The rebuttal of the Adversary Team

EVALUATION OF

HAWAII 3 ON 2

CLASSROOM ORGANIZATION PROGRAM

REPORT OF ADVOCATE TEAM

ON

PROGRAM STRENGTHS

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PREFACE

The authors of this report were assigned the task of serving as advocates of the instructional program being evaluated. They perceived their assignment, consistent with the adversarial evaluation model being employed, to defend the merits of that program as vigorously as possible on the basis of available evidence, logic, etc. It should be recognized, therefore, that the positions expressed in the following pages may not represent the individual or collective views of the writers.

Hawaii's 3 on 2 Program represents the most ambitious attempt ever seen in American educational history to create a team-taught, flexible, and individualized instructional program for primary grade children. Since its establishment in 1968, the Hawaii 3 on 2 Program has attracted the attention of many educators, not only in the United States but in the larger international community. Never before has an entire state attempted, at this magnitude, to install a comparable instructional scheme designed to upgrade the quality of its instructional efforts for primary grade youngsters.

This report constitutes one segment of a systematic attempt to evaluate the merits of the Hawaii 3 on 2 Program. Hawaii's educational policymakers are now faced with a series of significant decisions regarding the Hawaii 3 on 2 Program, that is, whether to (1) expand it, (2) maintain it at its present level, (3) reduce it, or (4) eliminate it. If a decision is made to retain the program in some form, corollary decisions may need to be made regarding how to improve it. Hopefully, this report will aid those decision-makers who must make these enormously important choices.

An Adult Perspective: A Child's World

Adults who determine policy about educational programs should never forget that they are, in reality, grownups making decisions for children. It's all too easy for such adult decision-makers to focus on test scores, budgetary factors, or political considerations--and to forget that their decisions can virtually refashion a child's environment.

Too often we reach educational decisions from the vantage point of maturity, a vista which carries with it all sorts of dividends, but yet some deficits. Let's spin back our personal time clocks and try to recall

what it's like to be an eight-year-old, once again. After all, we're intruding on the lives of just such children with our educational policies. Let's see how school looks when you're only three feet tall instead of five or six. Presented below are two fictitious stories that might be told by different second grade pupils on the topic "A Day in My School." One of the stories should sound fairly familiar to most readers of this report.

* * *

A Day in My School
by
Lee Cheng (Age 8)

A day in my school is a lot of fun, at least some of the time. My teacher is Miss Tanaka and she is very nice. She works hard to teach us lots of things. I sit at Table Two. The kids who have trouble with their reading sit at Table One and Table Two. Sometimes, when Miss Tanaka can get the rest of the class doing other things, we get special help in reading. I like those times because I really want to learn how to read. My Mom and Dad try to help me, but Miss Tanaka is more patient. Mom and Dad get so angry when I miss words. The rest of the class sometimes acts up when Miss Tanaka works with kids at Table One and Two. I wish they would behave themselves because Miss Tanaka gets upset and has to stop our special lessons.

It was very bad in class on Monday and Tuesday because Miss Tanaka was absent. We had a substitute teacher and she didn't do any of the things we usually do. I don't think I learned much on those two days.

I'm having lots of trouble with arithmetic. Miss Tanaka tries so hard to teach us about arithmetic, but most of the kids don't get it. She is so nice, but sometimes I think she gets mixed up about

arithmetic. She even says that she never did well in arithmetic herself when she was in school.

Even with the hard time I'm having in arithmetic and reading, I sure like this class better than first grade. Last year I was in Mrs. Hill's class for first grade and she was so mean! None of the kids liked her. She must have been at our school forever. I'll bet I'm having so much trouble with my reading now because of Mrs. Hill. I didn't learn anything from her. Nobody did.

A Day in My School
by
Pat Carson (Age 8)

I am in a class in school with three teachers and lots of kids. Some of them are second graders like me and some of them are third graders. Our teachers are Mrs. Nobora, Miss Olsen, and Mrs. Lee. Mrs. Nobora and Miss Olsen are really great, but I can't stand Mrs. Lee. Some of my friends like her, but I sure don't. She is good when she teaches us about music and art, but she doesn't seem friendly at other times. I'm glad I can spend more time with my other two teachers.

Yesterday we spent lots of time in small groups working on arithmetic. The teachers have us in three groups for reading, and three different groups for arithmetic. I'm in the top group in reading and in the middle group in arithmetic. Our arithmetic group was having trouble with one kind of story problem, so our teachers changed the schedule so we could work with Miss Olsen for an extra period. Tomorrow we will pair off with the kids in the top arithmetic group so they can give us practice in how to work this kind of problem. I usually get arithmetic help from Tom. I like it when he

tutors me in how to do subtracting. I often help Bill when he goes through his word recognition cards. It makes me feel good to help him.

The third graders are a big help in our class. They have been in the class for two years now and know how everything goes on. They help the teachers run things. It will be fun to be a third grader in this class next year. I'll get to tutor other kids and maybe I can help with the attendance records.

Miss Olsen had to take her sister to the hospital three days ago. We had a substitute for her, but the other two teachers knew what to do and class went on just like it usually does. Mrs. Nobora even had time to work on reading with me alone again. She does this a lot. She has shown me special ways to figure out how to read hard words. She is sure good at teaching kids how to read. She does that most of the time in our class.

With three teachers we do so many different things. We have small groups and big groups and we work by ourselves. Next week half of the class is going to a concert with Mrs. Lee. The rest of the class will go to a concert a week after that. I'm going next week. It won't be so bad going to a concert with Mrs. Lee. She sure knows her music.

My class is so interesting. Last year I was in a class with one teacher. It was okay, but this class is so much better. I can't wait to get to school each day.

* * *

Self-Contained Classes--Self-Created Problems

Most readers of this report went through elementary school at a time when they were far more apt to encounter the situation depicted in the first story than the second. When most of today's adults experienced elementary school, there were no classroom organizational choices. We all went into a self-contained class with one teacher in charge. If we were lucky, we drew a good teacher and we learned. If we drew a weak teacher, just like losing athletic teams, we could always "wait 'till next year."

But even if we did have good teachers, there were certain limitations imposed by the very nature of the self-contained class that made it difficult for those teachers to help us as much as they wanted to. As always, some pupils were more advanced than others. Teachers in self-contained classes often find it impossible to keep part of the class engaged in fruitful learning activities while providing special instruction to a group of pupils who need it. All too often, teachers in self-contained classes are obliged to assign wheel-spinning activities to the rest of the class just so they can give attention to those groups who need it. And the idea of providing sustained attention to individual learners must surely seem illusory to the harassed teacher of a self-contained class.

Beyond that, teachers in self-contained classes are frequently obliged not only to deal with subject matter areas where their training is modest, they have to be experts. Very few human beings can acquire the requisite expertise to hold forth knowledgeably on the range of subject matter dealt with in the primary classroom: reading, writing, arithmetic, social studies, music, art, physical education, literature, etc. Teachers end up knowing more about some fields than others. But merely because a teacher is more facile in arithmetic, art, and social studies should not

deprive that teacher's pupils from learning their fair share about other important subjects. Because a teacher is not very skilled in the teaching of reading does not provide an excuse if children don't learn how to read.

The Hawaii 3 on 2 Program

It was because the self-contained class carried with it such built-in liabilities that Hawaii educational architects initiated a major instructional reform in 1968 to improve the quality of education in the primary grades. In brief, the Hawaii 3 on 2 Program created a large number of team teaching situations when three teachers were assigned to two classes of primary children. Typically, two grades were involved, such as K-1 or 2-3, and a larger, more flexible instructional setting was provided. Hawaii educators wanted to create the kind of instructional situation that was described in the second of our two fictitious stories by eight-year-olds. The Hawaii 3 on 2 Program was viewed as a vehicle to promote the kind of educational environment that would make school an exciting and happy place, a place where Hawaii children could learn more effectively.

Since its inception, the Hawaii 3 on 2 Program has commanded considerable attention from a host of educators. Because a primary school reform of this magnitude has rarely been seen in America, it was only natural that educators elsewhere would be watching Hawaii's large-scale educational experiment with keen interest.

Fortunately, because of the attention of many Hawaiians, educators and legislators in particular, the Hawaii 3 on 2 Program has been subjected to a continuing series of evaluations since its inception. The evaluation of which this report is one component has been viewed as an external,

definitive evaluation of the Hawaii 3 on 2 Program. It may be useful to provide a few remarks about the structure of that evaluation and the perspective from which this report was written.

An Advocate-Adversary Evaluation Model

The evaluation design adopted for this appraisal of the Hawaii 3 on 2 Program was an advocate-adversary model. According to this scheme, two teams of specialists are supposed to engage in an essentially adversarial evaluation of the program being appraised, much as we see a formal debate model employed to appraise the merits and demerits of a given proposition. There is a pro team and a con team. It is hoped that decision-makers, having seen both sides of the case defended with zeal, will be better able to render a final judgment.

Similarly, this evaluation of the Hawaii 3 on 2 Program called for the creation of two competing teams, each of which was composed of four evaluation specialists. The four individuals who authored this report constituted one of these two teams. Many months ago we met in Portland, Oregon, to work out details of the evaluation plan and to decide, by the toss of a coin, whether we would be criticizing or supporting the Hawaii 3 on 2 Program. As the coin landed, we found that we would be the Advocate Team, that is, the team advocating the continuance of the Hawaii 3 on 2 Program quite largely at its present magnitude, although we could propose improvements that might make it function more effectively.

At first, it must be confessed, we were a bit disappointed that we ended up as the Advocate Team. After all, it's a bit more fun to knock an existing program. Very few large-scale programs of any kind, created as they are by fallible human beings, are unflawed. Whether it's Social

Security, the Peace Corps, or the Hawaii 3 on 2 Program, an energetic opponent can always ferret out some deficiencies in such endeavors. Such are the liabilities of most large-scale efforts to improve our lot. Oh yes, it would have been far more fun to be cast as the Adversary Team.

Our team had looked over the previous evaluations of the Hawaii 3 on 2 Program and we knew that there was little evidence that children in the program emerged at the end of grade three with astonishingly superior academic achievement. Further, we knew that the Hawaii 3 on 2 Program costs plenty of money. And, since money isn't too plentiful these days, we figured there'd be plenty of people (educators and noneducators alike) just dying to get their hands on those 3 on 2 dollars. No, as we mused over our fate after that coin flip in Portland, we didn't feel too fortunate.

But rules are rules, so we got underway with our efforts to support the merits of the Hawaii 3 on 2 Program. The deeper we probed, the more comfortable we became with our assignment. We spent hours and hours talking to people in Hawaii who were close to the Hawaii 3 on 2 Program. We interviewed teachers, parents, administrators, children, legislators, interested citizens, Department of Education officials, and a host of other assorted folks who had views on the program. We observed classes, both 3 on 2 and self-contained. We gathered questionnaire data from teachers, parents, and administrators. We gave achievement tests of many kinds to children in 3 on 2 and self-contained classes. We administered attitude inventories to those youngsters to find out how they felt about self-contained and 3 on 2 classes.

As all of this information began to accumulate, we came to the following series of conclusions:

1. The Hawaii 3 on 2 Program, while capable of being improved, is currently functioning effectively to the educational benefit of most youngsters it now serves.
2. The Hawaii 3 on 2 Program is functioning effectively because of its unique instructional features.
3. Citizens of Hawaii should be singularly proud of the Hawaii 3 on 2 Program and strive to strengthen the excellence of this high visibility educational reform as an option for the children and teachers of Hawaii.

The remainder of this report is organized around these three major propositions. We will present data and analyses that support each of these three contentions. In view of the enormous amount of data gathered in connection with the current evaluation of the Hawaii 3 on 2 Program, it is apparent that many more data-laden arguments could be presented. Yet, the Advocate Team has attempted to be conscious of the reader's tolerance for such evaluative data.

The interested reader is urged to consult further the complete technical report for this evaluation, a report replete with pertinent information regarding the worth of the Hawaii 3 on 2 Program. In the interest of conciseness, however, we have chosen to defend the following three propositions: (1) the Hawaii 3 on 2 Program is working; (2) it is working because it possesses some unique instructional advantages; and (3) Hawaii should be proud of this effective educational scheme and should maintain it as an instructional option for the children and teachers of Hawaii.

The Hawaii 3 on 2 Program is Functioning Effectively

There are many ways to tell if an educational program is working. Some involve pupils' test scores; some involve the opinions of those who have observed the program; some involve looking at the program as it operates. The Advocate Team relied on all of these data sources. Having reviewed the array of available information bearing on the effectiveness of the Hawaii 3 on 2 Program, we concluded that it really is working far better than we imagined. Later in the report we will set forth recommendations for augmenting its effectiveness. Yet, even without such modifications, it is apparent that the Hawaii 3 on 2 Program constitutes a major educational achievement--an achievement in which the citizens of Hawaii should take justifiable pride.

Before parading out the more formal evaluation data bearing on this contention, let's take a close look at some 3 on 2 classes in action. In October 1976, members of the Advocate Team spent a final data-gathering week in Hawaii. On an earlier visit we had observed a wide variety of 3 on 2 and self-contained classrooms. During the October session we wanted to look in on some truly outstanding 3 on 2 classes. In response to our request, curriculum specialists in each Hawaii district identified particular 3 on 2 teams they considered to be excellent. We spent a good many hours visiting some of these classrooms. The curriculum specialists were right. These were truly outstanding instructional situations. After spending several days in observing these 3 on 2 teams, we were even more convinced that the Advocate Team was arguing the appropriate side of the issue. Here is just one example from the kaleidoscope of first-rate teaching we saw in October.

* * *

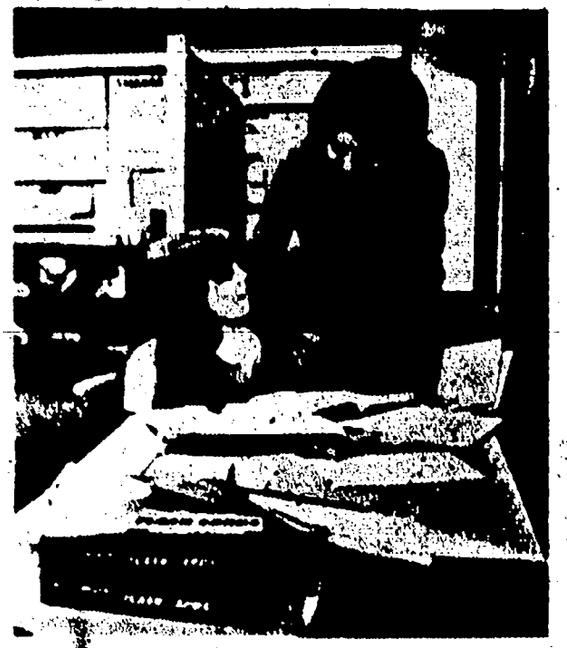
Team 5, a 3 on 2 team for second and third grade students in an elementary school of the Honolulu District, is staffed by three experienced elementary teachers, one of whom recently chose to transfer from a grade six self-contained classroom in order to work with younger children. The pupils in Team 5 consistently score well on routinely administered achievement tests. It doesn't take long for observers to note how efficiently the team's teachers are dealing with their instructional tasks. There's a good deal of small group instruction that goes on, with different teachers capitalizing on their particular areas of expertise.

When we observed Team 5 in October there was a point at which two of the team's teachers split most of the pupils into two groups so that the former sixth grade teacher could work with Stephen who was making up an assignment and with a group of five youngsters who needed remedial help on a language arts lesson about which they were confused. Both Stephen and the group of five children were able to get direct and helpful instruction from the teacher.

Because she is the team's art specialist, the former sixth grade teacher was particularly excited about a recently completed project that Team 5 youngsters had completed. The children had completed a series of artistic creations for display in the University of Hawaii's Art Gallery. Remembering that the 3 on 2 team structure made it possible for her and the pupils to carry out this kind of project because her colleague could instruct those pupils who were not heavily involved in the Art Gallery project, she stated that "If I were in a class by myself, I would either have to give other pupils busy work or forget about such special projects."

* * *

Finding that special teacher



Getting help when you really need it

Learning together, learning to help

Overall Reactions of Principals, Teachers, and Parents

During the past year, questionnaires regarding the Hawaii 3 on 2 Program were given to a large number of parents, teachers, and principals who were associated, in one way or another, with primary education in Hawaii. To ensure candor on the part of the respondents, all three groups filled out their questionnaires anonymously, then submitted them directly by mail to the Northwest Regional Educational Laboratory in Portland, the agency supervising the overall evaluation of the Hawaii 3 on 2 Program.

Questionnaires were returned by 144 principals, 19 of whom had only 3 on 2 classes in their schools, 14 of whom had only self-contained classes, and 111 of whom had both 3 on 2 and self-contained classes in their schools. A total of 1,819 teacher questionnaires were analyzed, including 1,173 teachers in 3 on 2 teams and 573 teachers in self-contained classes. Of 927 parent questionnaires that were analyzed, 516 parents had children only in 3 on 2 classes, 225 had children only in self-contained classes, and 186 had children in both types of classes.

Although there were many items in each of the questionnaires given to principals, teachers, and parents, there were several questions common to all three questionnaires which supplied, in an overall fashion, the respondents' appraisal of the Hawaii 3 on 2 Program. Each of the three groups was asked what should happen to the Hawaii 3 on 2 Program at the kindergarten to third grade levels. Respondents were given four choices, namely should the program be (1) expanded, (2) maintained at its present level, (3) reduced, or (4) eliminated. In surveying the responses to this pivotal questions, we find that principals, teachers, and parents are all supportive of the Hawaii 3 on 2 Program.

Readers who wish to do so are urged to consult the tables referred to in the Appendix. We will set forth all of the necessary information

in the text, but some readers will prefer to examine the data in tabular form. For the next few paragraphs we'll be describing results contained in Tables 1, 2, and 3 in the Appendix.

If you review these three tables carefully, you will see that no matter what group is being polled, whether or not that group has a special involvement with the 3 on 2 Program, at least 50 percent of each group wants either to expand 3 on 2 or maintain it at its present level.

Some of these preferences are quite dramatic. For example, when we consider the principals' responses (Table 1), it is not too surprising that those principals who have only 3 on 2 classes in their schools are favorable toward 3 on 2. As we see, over 94 percent of those principals favor expanding or maintaining the program. Furthermore, when we inspect the responses of the 111 principals who have both self-contained and 3 on 2 classes in their schools, the verdict still sharply favors 3 on 2, with almost 70 percent of the principals favoring an expansion or maintenance of the Hawaii 3 on 2 Program.

Now the opinion of these 111 principals is truly significant. They are qualified educational leaders who have daily opportunities to see both 3 on 2 and self-contained classes in operation. These principals have no personal interest in seeing the Hawaii 3 on 2 Program rise or fall--their administrative jobs are not on the line. And yet this nonpartisan group of knowledgeable educational leaders registers an emphatic vote of endorsement for the Hawaii 3 on 2 Program. In their view, the Hawaii 3 on 2 Program is working.

Let's turn to teacher reactions regarding 3 on 2 (Table 2). When the 1,173 teachers currently assigned to 3 on 2 classes were asked, over 86 percent responded that they wished to maintain or expand the Hawaii 3 on 2 Program. This indicates that those educators most intimately

involved with 3 on 2 are emphatically in support of the program. But, of course, one might argue that 3 on 2 teachers might perceive their job security being threatened by this type of evaluation, hence would respond positively to such a question? Therefore, it is even more impressive when we turn to the reactions of the 573 self-contained teachers and find that over 50 percent of that group also favors expanding or maintaining the Hawaii 3 on 2 Program. These self-contained teachers have no axe to grind here. If anything, they might be negatively disposed to 3 on 2 because they're not involved in the program. And yet, over half of those teachers of self-contained classes want to maintain or expand 3 on 2. Clearly, in the view of Hawaii primary teachers, of both 3 on 2 and self-contained classes, the Hawaii 3 on 2 Program is working.

Let's look now, at the opinions of the over 900 parents who completed questionnaires regarding the program (Table 3). Those parents whose children were enrolled in only 3 on 2 classes were extremely supportive of the Hawaii 3 on 2 Program, with over 76 percent wanting to expand or maintain the program. Parents who had children in both 3 on 2 and self-contained classes were also solidly in support of the Hawaii 3 on 2 Program, with over 63 percent wishing to maintain or expand the program. And, for those parents whose children were only in self-contained classes, over 50 percent still want to see the Hawaii 3 on 2 Program expanded or maintained. Yes, it is apparent that in the opinions of parents of Hawaii primary school children, the Hawaii 3 on 2 Program is working.

We can probe the question of 3 on 2 versus self-contained more deeply by trying to get a fix on the relative effectiveness of these two programs. Principals who had both 3 on 2 and self-contained classes in their schools were asked to provide judgments comparing the overall progress made by children in 3 on 2 classes with the progress made by children in

self-contained classes at the same grade levels. The reactions provided by the 11 elementary school principals, knowledgeable regarding both 3 on 2 and self-contained classes because of their day-to-day contacts with both kinds of classes, yields a startling vote of approval for the Hawaii 3 on 2 Program. These Hawaii elementary school principals think that 3 on 2 classes are decisively more effective, on all counts, than self-contained classes.

The information provided by the principals is summarized in Table 4 in the Appendix where the actual question to which the principals responded is provided along with the percentages of principals' responses. A quick scanning of Table 4 will reveal that these principals perceived that in every instance more progress was made in 3 on 2 classes than in self-contained classes. Some of the comparisons are astonishingly favorable toward the Hawaii 3 on 2 Program.

The comparative information displayed in Table 4 is truly amazing and should be studied at length by anyone charged with appraising the worth of the Hawaii 3 on 2 Program. First note the consistency of comparisons favoring 3 on 2, even in some of the more routine subject areas such as reading and arithemetic, where it is sometimes alleged that teachers of self-contained classes can do a better job. In reading, for example, 31 percent of the principals thought more progress was made in 3 on 2 classes and only 6 percent thought more progress was made in self-contained classes. In reading, as with all of the other areas, of course, a substantial proportion of principals thought that there were no differences in the relative effectiveness of the two programs. But for the 37 percent who perceived a difference in the effectiveness of reading instruction, 84 percent favored 3 on 2.

Notice the dramatic differences in several of the categories that are most consistent with the avowed purposes of the Hawaii 3 on 2 Program. For instance, with respect to encouraging children to become more independent learners, 3 on 2 is favored 64 percent to 6 percent. For developing a more positive self-concept, 3 on 2 is judged more effective by a 45 percent to 6 percent margin. In short, Table 4 constitutes an overwhelming vote of support for the Hawaii 3 on 2 Program in contrast to more traditional self-contained instruction. It is impossible to study Table 4's results carefully, and not reach the conclusion that the Hawaii 3 on 2 Program is working.

Ah Yes, The Test Scores

In this evaluation, as in many of the previous evaluations of the Hawaii 3 on 2 Program, standardized achievement tests have been used as an index of the program's effectiveness. This time, as in the past, there seems to be little evidence favoring 3 on 2 youngsters. As is almost always the case, results on standardized achievement tests turn out to reveal "no statistically significant differences" between an innovative program (in this case, 3 on 2) and the more traditional instructional program. But do these results reflect shortcomings in the new programs, or do they reflect shortcomings in the kinds of testing devices used? In the opinion of the Advocate Team, and a growing number of educational measurement specialists, standardized achievement tests such as those used in the current evaluation are inappropriate for assessing the effects of instructional interventions such as the Hawaii 3 on 2 Program.

Even though, in advance of the standardized achievement tests' being administered, the Advocate Team recognized that there would be no meaning-

ful difference between self-contained and 3 on 2 children, it was clear that because standardized achievement tests had been used with previous evaluations of the Hawaii 3 on 2 Program, they should be used in this evaluation for consistency and completeness. Yet, in accord with the Advocate Team's interpretation of the ground rule that both teams would be permitted to secure data of relevance to their case, we agreed to have the tests used.

Before turning to a brief analysis of why such tests yield a misleading estimate of program success, let's look for just a moment at the test results from this year's evaluation. On two of the many possible standardized achievement tests subscale contrasts involving self-contained versus 3 on 2 children, the self-contained children's performance was higher. Although the differences were statistically significant, they are of little practical significance, being less than two points in one case and barely more than two points in a second. Differences of that magnitude, while not statistically significant, can be found favoring 3 on 2 on other subscales of this year's test results (see the Technical Report, Table 12). Given the small size of actual differences, results of the achievement testing could hardly be considered emphatic support for self-contained teaching.

Similarly, while the one statistically significant difference on affective (attitudinal) tests favored the 3 on 2 children, we on the Advocate Team can take little solace in such results. On balance, it is apparent that with respect to test results there are no meaningful differences favoring either 3 on 2 or self-contained classes.

But, some would say, "Isn't a no difference result damaging to the case of the Advocate Team? After all, the Hawaii 3 on 2 Program costs a good deal of money, and the test results don't show that it's paying off.

Isn't that kind of evidence devastating?" To this we answer with real conviction--not at all!

We've previously demonstrated that in the view of those administrators, teachers, and parents most intimately involved with it, the Hawaii 3 on 2 Program is working. With respect to the standardized achievement test results, we have an instance of relying on the wrong kind of measuring instrument. The consistent failure of the Hawaii 3 on 2 Program, or, for that matter, almost any large-scale instructional innovation to secure better test results, is attributable to deficiencies in the tests, not the program.

Space limitations preclude an exhaustive analysis of why it is that standardized achievement tests yield such inaccurate estimates of a program's success, although such discussions are available elsewhere.[1] In brief, standardized achievement tests are designed chiefly to permit comparisons to be made among the examinees who take the test. Distributors of such tests want to be able to say that Billy's score of 29 items correct is equivalent to a 47th percentile performance, which means that Billy out-performed 47 percent of the group of examinees on which the test was normed. Unfortunately, in order to have tests which spread out examinee performance widely enough to permit such fine-grained comparisons, the individual test items cannot be answered correctly by too large a proportion of examinees. Consequently, test items that are answered correctly by, for instance, 80 percent or more of the examinees, are tossed out of the test. But these very items, the items on which youngsters perform well, often are based on the content that teachers thought important enough to stress. As a result, when standardized achievement tests are revised

(as they periodically are) there is a tendency to jettison the very items covering the most important content. What we end up with is a test covering less important topics, an achievement test that functions more like an intelligence test. Such tests are instructionally insensitive.

When you couple this technical deficiency with the fact that such tests are often badly mismatched with local curricular emphases, for example, the emphases of Hawaii schools, you can see that standardized test results often provide a genuinely erroneous picture of an instructional program's quality.

In a May 1975 review[2] of the merits of standardized achievement tests, a group of Hawaii educators reached the conclusion that such tests possessed serious liabilities for educational evaluation in Hawaii.

We have to add one more point to be considered as we evaluate the Hawaii 3 on 2 Program, namely, have 3 on 2 teachers ever attempted in a serious fashion to have their students excel on particular types of achievement tests? The answer is decisively NO. That may be what citizens of Hawaii want their primary education program to do. But let's not judge a program adversely on the basis of tests that, in the first place, are technically inappropriate for that purpose and, in the second place, have not been high priority instructional targets for Hawaii's teachers.

The Affective Tests

Members of the Advocate Team were really anxious to administer a number of affective measures to the 3 on 2 and self-contained youngsters, since we were willing to concede that the standardized achievement tests

being used, for the aforementioned reasons, would provide essentially meaningless data. Yet, as is well recognized by measurement experts, the development of genuinely valid and sensitive affective assessment devices is a task of major magnitude, a task which exceeded the resources available in the current project. Instead, we had to adopt some existing affective instruments in the hope that they would pick up at least gross affective differences. As it turned out, there was precious little difference in students' scores irrespective of whether they were in self-contained or 3 on 2 classes. Not surprisingly, therefore, the affective results reflected no substantial differences between the measured attitudes of children in 3 on 2 and self-contained classes.

Improving the Hawaii 3 on 2 Program

Any educational program, whether innovative or ongoing, can be improved. Members of the Advocate Team instantly concede not only that the Hawaii Department of Education's coordination of the 3 on 2 program has not been as effective as it might have been, but also that some 3 on 2 classes are not as effective as they should be. But such pockets of ineffectiveness can be identified and remedied, particularly by capitalizing on some of the very assessment schemes employed in the current evaluation of the Hawaii 3 on 2 Program. We propose that an outcome-focused quality control scheme be initiated without delay whereby the quality of 3 on 2 classes be monitored with respect to pupil performance on suitable measures of achievement and affect.

By continuously monitoring the progress of 3 on 2 teams according to the results they produce, assistance could be provided to those teams that need it. The Hawaii 3 on 2 Program has been operating for eight years now.

During this time a number of really superlative 3 on 2 teachers have emerged. A small cadre (probably with rotating membership) of these excellent 3 on 2 teachers could constitute a task force whose job it would be to aid those 3 on 2 teams where pupils failed to make satisfactory progress on appropriate achievement tests or whose performance on affective measures indicated, for example, that their attitudes toward school or their self-esteem was in need of attention. There is no need to go to the mainland to ship in visiting experts who can rectify such problems. By this time the Hawaii 3 on 2 Program has created abundant local expertise in how to make 3 on 2 classes function to the benefit of children. There are numerous 3 on 2 teachers, principals, and curriculum specialists who really know their stuff. Let's use them wisely.

Getting more specific, this very summer a task force of effective 3 on 2 teachers could be organized to develop a set of experienced-based guidelines for organizing and operating 3 on 2 classrooms. Previous Department of Education support materials have often lacked the practical "how-to-do-it" suggestions which effective 3 on 2 teachers might share. For example, these guidelines could offer suggestions for dealing with shy children, poor readers, unruly youngsters, etc. in a 3 on 2 setting. Very few commercially published treatments of instructional practice have been written with a team-teaching organization in mind. Creation of a particularized guidebook for the Hawaii 3 on 2 program could be invaluable.

Unlike the traditional standardized achievement test which provides almost no idea of the types of pupil behaviors it actually assesses, a newer form of test (known as criterion-referenced measures) does supply an explicit picture of what's being measured. In the current evaluation

of the Hawaii 3 on 2 Program, criterion-referenced tests were used as assessment devices for the first time. But even before the test results were in, members of the Advocate Team were convinced there would be no differences favoring 3 on 2 children. Adopting criterion-referenced tests as a belated assessment device is like judging a person's work after it's completed by applying previously unannounced criteria. Post facto targets are no targets at all.

Predictably enough, results of the criterion-referenced tests used in the present evaluation revealed no meaningful differences between children taught in 3 on 2 versus self-contained classrooms. But while the Advocate Team strongly endorses the use of criterion-referenced measures to evaluate programs such as 3 on 2, we contend that failure to secure differences in favor of 3 on 2 children was a function of the after-the-fact fashion in which these criterion-referenced tests were used.

Clearly explicated criterion-referenced tests covering highly significant kinds of skills that Hawaii youngsters should master, could and should constitute the core component of a continuing system of performance-oriented evaluation for the Hawaii 3 on 2 Program. Similarly, the use of affective assesment devices which dealt with the important attitudinal goals of 3 on 2 could be blended with the criterion-referenced tests to yield an excellent idea of which 3 on 2 teams were in need of assistance.

Without going into inordinate detail, the Department of Education could, in consultation with a wide range of Hawaii's teachers and citizens, identify a small number of minimal competencies in reading and mathematics. Criterion-referenced tests could be developed to assess these competencies, with accompanying descriptions of the competencies being distributed to Hawaii's primary teachers. By periodically assessing the extent to which

children were achieving these well-described skills, it would be possible to identify 3 on 2 teams which were in need of supervisorial assistance. In the same way, measures of affect could be periodically administered to provide indices of the relative success of 3 on 2 teams in achieving key affective goals. The stress in such a monitoring system would be on the results of instruction as evidenced in pupil behavior.

Clearly, the ingredients of such a progress-monitoring system would have to be worked out so that it would not be cumbersome, yet would provide the kinds of information needed. Members of the Advocate Team believe that the Hawaii 3 on 2 Program is working. We want to see it work even better.

Unique Instructional Attributes

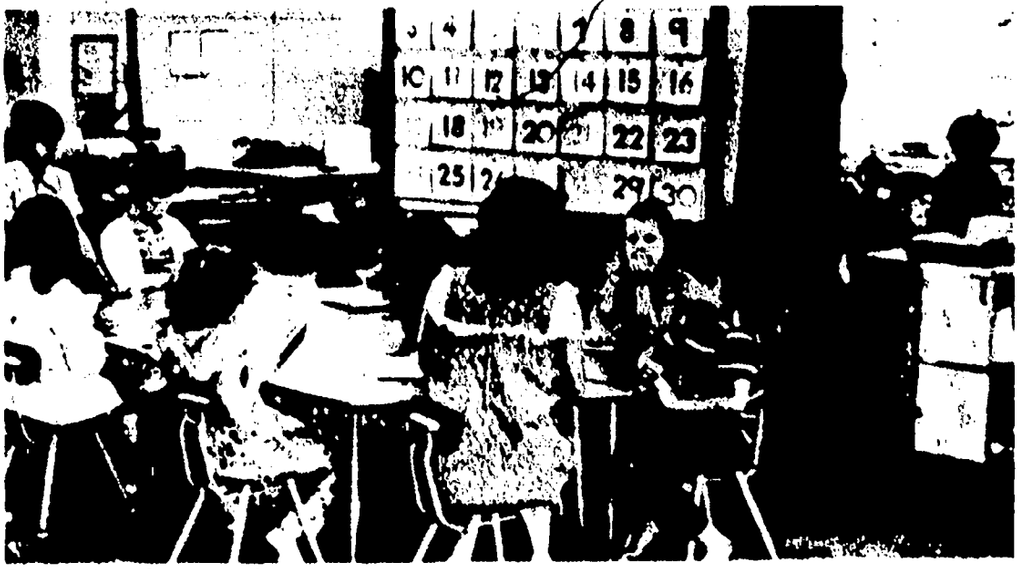
We have seen that, from several perspectives, the Hawaii 3 on 2 Program appears to be functioning effectively. Why is this so? What is it that leads so many people to assert that this program is worth maintaining or even expanding?

Well, in the view of the Advocate Team, that's a fairly simple question to answer. The fact is that the Hawaii 3 on 2 Program incorporates some instructional advantages that clearly cannot exist in a conventional self-contained class. A number of these have been alluded to earlier in various ways. Let's spell them out, although briefly, so they don't go unnoticed. Thankfully, these strengths of the Hawaii 3 on 2 Program have not gone unnoticed by people familiar with the program, as we'll point out in a moment.

The oft-cited but nonetheless powerful advantages of a 3 on 2 class are listed below. Incidentally, the six advantages presented below were

Flexibility for being responsive

Flexibility for teaching the things you know best



Flexibility for grouping

not plucked from any Department of Education document treating the merits of 3 on 2. Rather, they are drawn from the Advocate Team's observations, interviews, and questionnaire interactions with hundreds of Hawaii primary teachers.

1. Teachers can more flexibly organize students so that they can be taught, as individuals and as groups, according to the children's needs.
2. The team can capitalize on its members' particular instructional skills, so that teachers can instruct in their areas of strength, for example, music, science, or art.
3. The collegial interaction among 3 on 2 teachers elevates their professional standards and strengthens their instructional skills.
4. Children have a better chance of finding an adult to whom they can relate, both personally and instructionally.
5. If a teacher is absent, the team's instructional program can go on largely undisturbed because two team members are present.
6. Younger children can learn from the older children in their two-grade classes.

While there are other advantages associated with the team-teaching organizational structure of the Hawaii 3 on 2 Program, these six instructional dividends are peculiar to a 3 on 2 setup. They cannot be present in a single-grade self-contained classroom. Three teachers and 60 or so children simply have it better than one teacher and 25 children. The flexibility potentials of a 3 on 2 class dramatically outdistance those available to even the most energetic and devoted teacher in a self-contained class.

Not only does the Hawaii 3 on 2 Program represent a conceptually sound instructional scheme, it is actually working. For example, in October 1976 as part of the current evaluation, a University of Minnesota specialist in individualized instruction, Michael Patton, observed numerous 3 on 2 classes. He concluded as follows: "Based on my experience in other programs of this kind, i.e., team teaching programs on the mainland, I thought that the 3 on 2 classrooms exhibited a higher than usual degree of real teaming. Team teaching has not been very highly implemented on the mainland, despite rhetoric to the contrary."[3]

Parents, teachers, and administrators are also cognizant of the unique advantages of the 3 on 2 organizational structure. In their responses to questionnaire items, for example, large proportions of parents (irrespective of whether their children were in 3 on 2 classes, self-contained classes, or both) thought that the Hawaii 3 on 2 Program's major strengths were that (1) teachers worked together as a team and shared their special talents (67 percent of the parents identified this as a strength), (2) children learn from older and younger children (55 percent), (3) children have a greater variety of materials and adults to work with (54 percent), and (4) it allows teachers to group children so they can learn better (44 percent). While the parents cited a number of other advantages of the 3 on 2 system (information is available in the complete Technical Report of this evaluation study), only a small proportion of parents cited any weaknesses associated with the Hawaii 3 on 2 Program (see Technical Report, Table H-3.7).

Similarly, teachers saw a number of advantages inherent in the 3 on 2 structure. For example, over 97 percent of the 3 on 2 teachers registered agreement with the assertion that "children can find at least one of the three adults with whom they can get along." And even 79 percent of the self-contained teachers agreed with the same assertion. Both 3 on 2 teachers (92 percent) and self-contained teachers (62 percent) agreed that the 3 on 2 program presented children with a greater variety of materials and adults to work with than in a self-contained classroom. Both 3 on 2 teachers (91 percent) and self-contained teachers (51 percent) also recognized that when a teacher is absent, the student's instructional program is not interrupted. In sum, whether teachers are in a 3 on 2 or self-contained class, they clearly see special advantages associated with the 3 on 2 organizational structure.

Finally, principals clearly recognize that the Hawaii 3 on 2 Program carries with it some special advantages. About 60 percent of those principals who have both 3 on 2 and self-contained classes in their schools, for instance, believe that children in 3 on 2 classes receive more individual attention from a teacher than in self-contained classrooms. About 90 percent of those principals with only 3 on 2 classrooms in their schools agreed. Principals also decisively agree (well over 90 percent) that children in a 3 on 2 class learn from each other. They also agree (over 85 percent) that having three teachers in 3 on 2 allows pupils to find at least one adult with whom they can work. The principals believe that teachers work together as a team and share their special talents (90 percent), and that children have a greater variety of materials and adults to work with them in a 3 on 2 class (well over 80 percent). While there are many other advantages to the Hawaii 3 on 2 Program that principals recognize, this brief listing of some of their questionnaire responses

should make it apparent that these experienced educational leaders recognize the singular advantages of the Hawaii 3 on 2 Program (see Technical Report, Table H-4.7).

In essence, the Advocate Team believes that there are compelling organizational advantages to a 3 on 2 approach so that if one were to take three highly competent teachers and place them in self-contained classes for year one, then in a 3 on 2 situation for year two, their instruction in the 3 on 2 setting would be far more effective. It would be far more effective because as teachers in self-contained classes they would be deprived of the many unique advantages of the Hawaii 3 on 2 Program. These advantages are worth retaining.

Preserving the Hawaii 3 on 2 Program as an Option

Careful inspection of the Technical Report's detailed information will reveal, as would common sense, that not all 3 on 2 teams are as successful as one would like. Just as there are weak and strong teachers of self-contained classes, there are weak and strong 3 on 2 teams. Earlier in our report, the Advocate Team described the main features of a continuing monitoring system designed to strengthen the less effective 3 on 2 teams. But no sensible person can dispute the fact that there are many, many teams in the Hawaii 3 on 2 Program that are currently providing high quality instruction for primary children.

There are also teachers in self-contained classes who are providing exciting and effective instruction for primary children. As matters

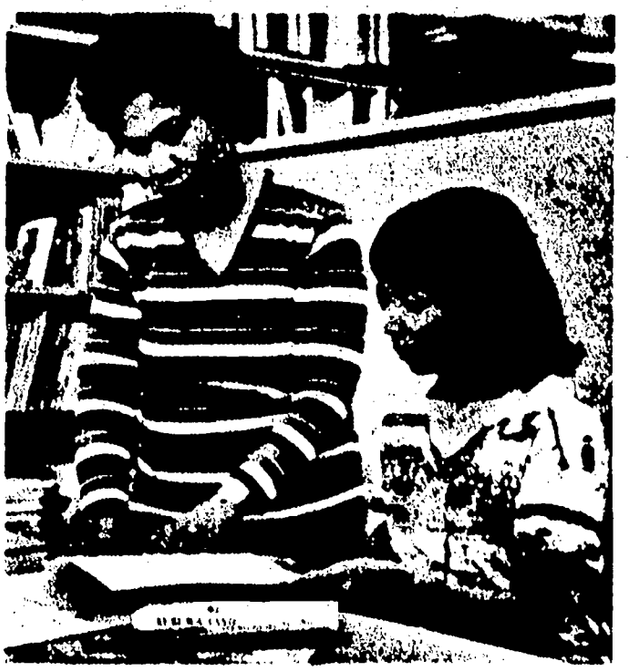
currently stand, Hawaii schools offer both options to most youngsters. We believe that this situation must continue.

There are, without question, profound differences in the learning styles of children. A teaching technique that may work well for Fred can fall flat for Florence. Similarly, 3 on 2 may not be suitable for every child in grades K-3. For example, about the only limitation that a substantial number of questionnaire respondents thought might exist in the Hawaii 3 on 2 Program was that a shy child might get lost in the large group. Discounting for the moment the fact that shy children often get lost in conventional self-contained classes as well, let's concede the possibility. Well, if both 3 on 2 and self-contained classes are retained as options for youngsters in Hawaii, we arrive at a classic triumph of simultaneous cake-having and cake-eating.

There are differences in kids. There are differences between 3 on 2 and self-contained classes. The numerous parents, teachers, and principals who supplied questionnaire data recognized both of these points when they offered resounding support for the contention that the Hawaii 3 on 2 Program should be preserved as a choice for those who want it. This information is set forth in Table 5 in the Appendix. When responses are presented to the question "How important do you feel it is to keep 3 on 2 as an option for those schools, students, and teachers who want it?", no matter what group responded, substantial numbers of the respondents indicated that they wanted to retain 3 on 2 as an option for those who wished it. For example, of the 111 principals who supervised both 3 on 2 and self-contained classes, 66 percent believed it was very important as an option. All groups, as an inspection of Table 5 will reveal, registered strong support for the importance of keeping 3 on 2 as an option.

An effective principal is a fourth team member

Cooperative planning can be exciting



Pooled ideas produce better instruction

There was, of course strong support also for maintaining self-contained classes as an option in every school. This is precisely what the Advocate Team is contending, namely, that both 3 on 2 and self-contained classes be available to the pupils and parents of Hawaii. Parents should not be forced to place their children in an instructional setting they believe will not benefit that child. Yet, as we have seen, the majority opinion is clearly that the Hawaii 3 on 2 Program in most cases provides an exemplary instructional opportunity for primary grade children. Parents should not be deprived of the opportunity to place their children in such a rich educational environment.

Besides preserving 3 on 2 classes as an option for the children of Hawaii, it should be recognized that Hawaiian education will benefit by maintaining 3 on 2 as an option for the teachers of Hawaii. Teachers, just like youngsters, differ. Some teachers who might shrivel in the isolation of a self-contained classroom, really blossom in the collegial stimulation of a 3 on 2 class. Other teachers really work most effectively in the autonomous setting of a self-contained class. For the good of Hawaii education, both instructional settings must be preserved in order to capitalize on particular teachers' strengths.

A Matter of Pride

The Hawaii 3 on 2 Program has been in existence for a number of years now. It has attracted both national and international attention, not only because of its substantial magnitude but also because of the forward-looking instructional features it incorporates. Will the citizens of Hawaji be satisfied at this point to discard this highly visible educational innovation?

It is more appropriate to conceive of the Hawaii 3 on 2 Program as a creative and potentially effective educational intervention that has at this moment reached a plateau. Whether the people of Hawaii capitalize on this situation to strengthen an already effective instructional intervention or waste their eight-year, multi-million dollar investment in educational reform remains to be seen.

When members of the Advocate Team were originally assigned the task of defending the Hawaii 3 on 2 Program, we wondered how it was that if the program is so defective, it has survived for so many years. The answer to that question, as we discovered during our countless interviews and observations, is straightforward. The Hawaii 3 on 2 Program has survived because it represents an instructionally sound idea. It is an idea too precious to eliminate.

We have attempted to demonstrate, hopefully to the reader's satisfaction, that the following propositions are accurate.

1. The Hawaii 3 on 2 Program, while capable of being improved, is currently functioning effectively to the educational benefit of most youngsters it now serves.
2. The Hawaii 3 on 2 Program is functioning effectively because of its unique instructional features.
3. Citizens of Hawaii should be singularly proud of the Hawaii 3 on 2 Program and strive to strengthen the excellence of this high visibility educational reform as an option for the children and teachers of Hawaii.

To the extent that these contentions are valid, the educational decision makers of Hawaii should conclude that the Hawaii 3 on 2 Program is an educational endeavor worthy of their continuing support.

We recommend, therefore, that the Hawaii 3 on 2 Program be maintained at its present level as an instructional option for Hawaii primary education. We recommend, further, that creative efforts to improve the quality of the Hawaii 3 on 2 Program be initiated instantly. To eliminate or seriously reduce the magnitude of the Hawaii 3 on 2 Program would create serious negative consequences--negative consequences that would be experienced by the children of Hawaii during their crucial, formative years. While the costs of the Hawaii 3 on 2 Program are substantial, the adverse effects of abandoning this effective instructional program are too severe. The Hawaii 3 on 2 Program must be maintained.

APPENDIX

TABLE 1

Recommended Action for the Hawaii 3 on 2 Program by 120 Principals

Recommended Action	Principals with only 3 on 2 classes (N = 19)	Principals with 3 on 2 and self-contained classes (N = 111)
Expand	27.8%	15.1%
Maintain	66.7%	54.7%
Reduce	5.6%	11.3%
Eliminate	--	18.9%

TABLE 2

Recommended Action for the Hawaii 3 on 2 Program by 1,749 Teachers

Recommended Action	3 on 2 Teachers (N = 1,175)	Self-Contained Teachers (N = 574)
Expand	25.6%	8.3%
Maintain	60.8%	42.2%
Reduce	9.1%	20.1%
Eliminate	4.5%	29.3%

TABLE 3

Recommended Action for the Hawaii 3 on 2 Program by 905 Parents

Recommended Action	Parents of 3 on 2 Children (N = 503)	Parents of Self-Contained Children (N = 222)	Parents of Both 3 on 2 and Self-Contained Children (N = 180)
Expand	27.0%	11.7%	20.1%
Maintain	49.5%	38.6%	43.1%
Reduce	13.4%	15.2%	18.4%
Eliminate	10.2%	34.5%	10.4%

TABLE 4

Relative Effectiveness of Hawaii 3 on 2 Program Classes and Self-Contained Classes as Judged by 111 Elementary Principals

(The question given to principals having both self-contained and 3 on 2 classes in their schools: "Below is a list of 14 areas of content, knowledge and personal development in which children can evidence growth. For each of the 14 areas, please compare your perception of the overall progress made this year by children in 3 on 2 classes and those at the same grade levels in self-contained classes.")

Area	More Progress in 3 on 2 Classes	More Progress in Self-Contained Classes
Reading	31.3%	6.3%
Becoming a more independent learner	63.8%	6.4%
Arithmetic	17.7%	8.3%
Taking an interest in school	30.5%	4.2%
Science	20.2%	2.1%
Exercising self-control	37.2%	16.0%
Music	21.1%	5.3%
Communicating with adults	44.7%	6.4%
Art	22.1%	3.2%
Getting along with other children	51.6%	4.2%
Physical education	25.0%	3.9%
Using time wisely	37.2%	12.8%
Social studies	22.3%	2.1%
Developing a more positive self-concept	45.3%	6.3%

TABLE 5

Perception of Importance of Retaining the Hawaii 3 on 2 Program as an Option

Group	Number	Percentage of Response		
		Very Important	Somewhat Important	Not Important
Principals of both 3 on 2 and self-contained classes	111	66.4	23.6	10.0
Principals of 3 on 2 classes	19	94.7	5.3	--
Teachers of 3 on 2 classes	1,011	82.3	14.5	3.2
Teachers of self-contained classes	469	43.1	34.3	22.6
Parents of 3 on 2 children	447	54.6	37.2	8.2
Parents of self-contained children	207	38.2	38.2	23.7
Parents of both 3 on 2 and self-contained children	179	45.8	37.4	16.8

FOOTNOTES

1. See for example, Popham, W. James. Educational evaluation. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975.

2. Report of the C D & T Ad Hoc Committee on the State's Minimum Testing Program to Philip K. Ige, May 1, 1975. The committee consisted of Gerald Dykstra, Stanley Koki, Morris Lai, May Look, Shiho Nunes, and Richard Port, Chairman.

3. See Technical Report, section entitled "Report by Dr. Michael Patton: observations and findings."

EVALUATION OF
HAWAII 3 ON 2
CLASSROOM ORGANIZATION PROGRAM

REPORT OF ADVERSARY TEAM
ON
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PREFACE

The design of this evaluation study required that one team of evaluators identify strengths and another team identify deficiencies of the program. Thus, this Report of the Adversary Team is only one part of the full evaluation report. It is a report of deficiencies. Taken by itself, this Report does not represent an overall perspective of strengths and weaknesses. The points advanced by the Adversary Team, however, are supported by data and by logic.

The Hawaii 3 on 2 Program was evaluated by a team of ten evaluators assembled by the Northwest Regional Educational Laboratory. The study was conducted through the use of an advocate-adversary evaluation design. The full ten-member team made decisions on data to be collected and the manner in which the data were to be analyzed. Then, the team was divided into two teams of four members each; and two additional members served as co-directors of the overall evaluation study. By random assignment, one team (the advocate team) assumed responsibility for identifying strengths of the program. The other team (the adversary team) assumed responsibility for identifying weaknesses of the program. Both teams used the same bank of data, which is reported in a separate Technical Report.[1]

The 3 on 2 Program is a combination of team teaching and open education in the primary grades, kindergarten through grade three. A 3 on 2 classroom is organized with three teachers and approximately sixty (60) pupils who represent two vertical grades, either kindergarten and grade one, grade one and grade two, or grade two and grade three.

Fifty-four percent (54%) of the primary children in Hawaii public schools are enrolled in 3 on 2 classes; forty-two percent (42%) are enrolled in self-contained classrooms; and four percent (4%) are enrolled in classrooms with a modification of 3 on 2 (typically, two teachers and a teacher's aide).[2]

A matter which will be discussed more extensively in another section of the report, but which is pertinent here, is a pervasive problem of ambiguity of statements of program objectives for 3 on 2. There are, however, statements of specific learning outcomes for all children whether they are placed in 3 on 2 or self-contained classrooms. These statements, listed below, were enunciated in a number of 3 on 2 Program

documents over the years and were included in the first published description of 3 on 2 in 1968.[3]

- To acquire basic academic learnings.
- To increasingly develop self-direction (subsequently restated, "to develop autonomy in learning").
- To develop a more realistic and positive self-concept.
- To establish satisfying interpersonal relationships.

The relationship of 3 on 2 to these statements was amplified in a 1974 long-range planning document by DOE[4] with the following assertion: "The assumption is that students in 3 on 2 will exhibit greater gain (emphasis added) than students in self-contained classes in attaining the program objectives." Thus, the team has collected data in relation to these objectives and has searched for evidence of "greater gains" than that achieved by students in self-contained classrooms.

Data which were gathered included test information (cognitive and affective) from students; data from classroom observations; information gathered by interviews with officials of the executive and legislative branches of State government, Board of Education members, Department of Education leaders, teachers, parents, principals, district school leaders, students and other interested citizens; questionnaire data collected in the Spring of 1976 from primary (kindergarten through grade three) teachers, elementary school principals, and a random sample of parents of primary-level students; additional questionnaire data collected in the Fall of 1976 from a random sample of primary teachers who were invited to complete a "Teacher Views of Classroom Instruction" questionnaire; and questionnaire data from a random sample of fourth grade teachers who were invited to answer questions designed to ascertain if there were observed differences between students in the fourth grade who came from

self-contained classrooms and from 3 on 2 classrooms. In addition, numerous documents descriptive of 3 on 2 objectives were reviewed; a cost study was done; and a teacher-absentee study was done. Furthermore, to broaden the base of information, six open hearings were held in the Spring of 1976 to which all interested citizens were invited.

One part of this evaluation which compared a random sample of 3 on 2 classrooms with a random sample of self-contained classrooms is cited in the following sections of this Report which deal with student achievement. Socio-economic status of the students, measures of their ability and enrollment in classrooms using Hawaii English Program (HEP) materials, are independent variables in this evaluation study. Other controls were exercised through randomization. (See the Technical Report for details of the study design and data analyses.)

3 on 2 Deficiencies in Producing Greater Gains in Student Achievement

This is the Report of the Adversary Team, a report of deficiencies in the 3 on 2 classroom organizational pattern.

Three-on-Two was a beautiful dream in the Spring and Summer of 1968. In describing some aspects of the dream, one high-ranking school official asked: "Why separate the grades artificially? Why keep cognitive learnings away from Kindergarten children? Why not provide kids with options in relating to their teacher(s)?" All are excellent questions!

In real life, however, the dream has not come true, as can be seen from responses to some very fundamental questions of 3 on 2.

Student Cognitive Achievement

Perhaps the most fundamental questions posed by the evaluation team had to do with student achievement in the basic skill areas of reading and mathematics.

Question 1: Do 3 on 2 students achieve more in reading than students in self-contained classrooms?

No!

In the Spring of 1976, the Comprehensive Tests of Basic Skills (CTBS) Level 1, Form S, was administered to a random sample of third grade students who had spent at least three years in 3 on 2 classrooms and a random sample of third grade students who had spent at least three years in self-contained classrooms. There were significant differences between the two groups on the reading vocabulary and on the reading comprehension subtests. Self-contained students scored higher than 3 on 2 students on both measures.[5]

In addition to the CTBS, a standardized norm referenced test, another test, a criterion referenced test (CRT) published by the Instructional Objectives Exchange (IOX), was administered in the Fall of 1976 to two groups of fourth graders randomly selected respectively from among the 3 on 2 and self-contained students tested in the Spring. These students were tested on the following six reading areas:

1. Selecting examples and synonyms to match contextual definitions.

   Objective tested: Given two sentences, one of which uses an unfamiliar word, the student will select a synonym or example of the class of things or qualities described by the unfamiliar word.

2. Identifying the most general statement.

   Objective tested: Given three statements, the student will select the most general statement.

3. Understanding explicitly-stated content.

Objective tested: Given a brief passage written in the active voice, the student can correctly complete sentences using literal detail found within the passage.

4. Simple logical reasoning.

Objective tested: The student can identify a specific fact which may be logically inferred from another given fact.

5. Making definitions from factual information.

Objective tested: After reading a short paragraph containing factual information, the student can identify the most logical answer to a question.

6. Identifying possible outcomes.

Objective tested: Given four outcomes, the student can select the two which are consistent with the situations or facts presented in a short paragraph.

There were no significant differences favoring the 3 on 2 over self-contained classroom groups on any of the CRT reading areas.[6, 7]

Thus, student achievement in reading was evaluated through the two most prevalent methods of testing--standardized norm referenced tests and criterion referenced tests; and, neither method of testing yielded significant differences favoring the students in 3 on 2 over those in self-contained classrooms in their reading achievement.

Question 2: Do 3 on 2 students achieve more in mathematics than students in self-contained classrooms?

No!

As in reading, there were no significant differences favoring 3 on 2 students on two CTBS mathematics scores--mathematics computation and mathematics concepts and applications. The four fundamental mathematical

operations of addition, subtraction, multiplication and division were tested. Mathematics concepts measured included the students' ability to convert concepts expressed in one numerical, verbal, or graphic form to another form, and to comprehend numerical concepts and their interrelationships; and the mathematics applications measured the students' ability to select and carry out problem-solving operations.[8]

Furthermore, there were no significant differences between the two groups of fourth graders on CRT measures of the following six areas of mathematics:

1. Multiplication with one-digit numerals.

   Objective tested: The student will be able to solve a multiplication problem involving two, one-digit numerals.

2. Subtraction with two-digit numerals.

   Objective tested: The student will be able to solve a subtraction problem with a non-negative solution not requiring regrouping, involving a two-digit numeral and a one-digit or two-digit numeral.

3. Fractional numerals and number words.

   Objective tested: Given a proper fraction, the student will select the verbal expression that references the fraction.

4. Ordering cardinal numbers.

   Objective tested: Given a list of from three to five cardinal numbers, the student will select the rearrangement of these numbers which gives the numbers in the ascending order of their values.

5. Division: one-digit divisor, three-digit dividend.

   Objective tested: The student will be able to solve a division problem involving a three-digit dividend and a one-digit divisor.

6. Addition with two-digit numerals.

Objective tested: The student will be able to solve a word problem whose solution requires addition with one-digit or two-digit numerals and regrouping.[9, 10]

Thus, the two most prevalent methods of testing, the standardized norm referenced test and the criterion referenced test, failed to identify significant differences favoring the students in 3 on 2 over those in self-contained classrooms in either their reading or mathematics achievement.

Question 3: Are there, perhaps, some residual achievement gains of basic reading and mathematics skills by students who are in 3 on 2 classrooms over students in self-contained classrooms during the primary grades that can be identified later in the students' elementary school studies?

No!

A random sample of sixth grade students was tested in the Fall of 1976 in conjunction with the statewide achievement testing program. For this sample of students, data were not available to control for the use of Hawaii English Program materials during the primary grades. This differs from the third and fourth grade testing where the HEP variable was treated as an independent factor. Thus, the only independent variables for the sixth grade testing were measures of ability and socio-economic status of the students. The randomization process was applied as a control for HEP.

The scores on the Stanford Achievement Tests (SAT) of reading, vocabulary, reading comprehension, mathematics concepts and applications, and mathematics computations were not sigificantly different between students who had, during the primary grades, spent at least three years

in 3 on 2 classrooms and students who had spent at least three years in self-contained classrooms."[11]

In summary, student achievement in the basic skills of reading and mathematics were no greater for students who had spent at least three of their school years kindergarten through grade three in 3 on 2 classrooms than for students who had spent at least three of those years in self-contained classrooms. The results were the same regardless of the test form--CTBS, CRT, or SAT. Moreover, the results were the same, regardless of the point in time when the students were tested--third grade, fourth grade, or sixth grade.

Student Affective Achievement--Attitudes and Feelings

There are, of course, important objectives of schooling in addition to cognitive learning. Among other important objectives are those classified as affective. The evaluation team tested a number of such variables, and sought answers to additional questions about possible differences between students in 3 on 2 and those in self-contained classrooms.

Question 1: Do 3 on 2 students have a more favorable perception of themselves--in general, in relations with peers, and in school situations--than students in self-contained classrooms?

No!

The Student Attitude Inventory designed by the evaluation team was a compilation of well-known attitude scales published by the Instructional Objectives Exchange. In the Spring of 1976, the instrument was administered to the same sample of third grade students described earlier who were administered the CTBS reading and mathematics scales. The study design included socio-economic status and use of Hawaii English Program

materials as independent factors as was the case for the CTBS cognitive tests.

Three subscales of the Student Attitude Inventory measured the students' appraisal of themselves--in general, in relation with peers, and in school situations.

There were no significant differences which favored the 3 on 2 over self-contained groups on any of the self-appraisal subscales.[12, 13]

Question 2: Do 3 on 2 students have more favorable attitudes about school--in general, in relation to school social structure and climate, and in relation to school authority and control--than students in self-contained classrooms?

The Student Attitude Inventory contained three subscales referenced to each part of this objective. Here, only one of the three variables, "attitudes about school in general," favored 3 on 2 students. There were no significant differences between the 3 on 2 and self-contained groups on the social structure and climate and the authority and control subscales of the School Sentiment Indices.[14]

Question 3: Do 3 on 2 students view themselves as being more independent of teacher directions in their school work (more self-directed) than students in self-contained classrooms?

No!

One scale, the "Me and School Index," included ten questions such as "I like to have a teacher tell me what to do next in my schoolwork" and "I like to choose my own activities in class." There were no significant differences in scores on this scale between students in 3 on 2 and those in self-contained classrooms.[15]

Question 4: Are there, perhaps, some residual effects of 3 on 2 classroom experiences that are identifiable in the attitudes and feelings of students later in their elementary schooling?

No!

In the Fall of 1976, the Student Attitude Inventory was administered to the same sample of sixth graders identified for the SAT reading and mathematics achievement tests.

Once again, no significant differences were found on scores of any of the seven subscales favoring students who had spent at least three years in 3 on 2 classrooms over those who had spent at least three years in self-contained classrooms during the primary grades, kindergarten through grade three.[16, 17] It should be noted that the one subscale, "attitudes about school in general," which favored 3 on 2 students tested in the third grade, did not differentiate between the two groups in the sixth grade testing.

In summary, seven affective subscales in the Student Attitude Inventory were administered to students--(1) general self-appraisal, (2) self-appraisal in relations with peers, (3) self-appraisal in school situations, (4) general attitudes about school, (5) attitudes in relation to school social structure and climate, (6) attitudes in relation to school authority and control, and (7) instructional self-directedness of students. These subscales were administered to two groups of students in the third grade. One group had studied in 3 on 2 classrooms for at least three years and the other group had studied in self-contained classrooms for at least three years. The subscales were also administered to two groups of sixth graders. One group had studied in 3 on 2 classrooms during the primary grades for at least three years and

the other group had studied in self-contained classrooms during the primary grades for at least three years.

The results for the affective areas are consistently the same--no significant differences. (As has been noted, there was one contradictory result in the third grade testing where "attitudes about school in general" favored 3 on 2 students. This finding did not hold, however, in the sixth grade testing where there were no significant differences.)

Summary of Results on Achieving Program Goals

Overall, the 3 on 2 Program has failed to produce any greater gains on the cognitive and affective program objectives than the outcomes produced in self-contained classrooms. Following are program goals followed by statements showing failure to meet the stated goals.

1. To acquire basic academic learnings.
   A. The reading achievements of 3 on 2 students are no better than those of students in Self-Contained classrooms.
   B. The mathematical skills of 3 on 2 students are no better than those of students in self-contained classrooms.
2. To develop autonomy in learning (self-direction).
   Students in 3 on 2 classrooms are no more self-directive than students in self-contained classrooms.
3. To develop a more realistic and positive self-concept.
   Students in 3 on 2 classrooms have no better self-appraisal in general, in relation to school, or in relation to their peers, than is the case for students in self-contained classrooms.
4. To establish satisfying interpersonal relationships.
   The school sentiments of students in 3 on 2 classrooms are not different from those of students in self-contained classrooms.

Interactions of socio-economic status (SES) with classroom organization on a few variables were reported in the footnotes for comprehensiveness of reporting. On these few variables, students from a particular level of SES (low, medium, or high) appeared to do better in one classroom organization over the other. Since these interactions were reversed between levels of SES, they do not favor 3 on 2 over self-contained classroom organization.

Thus, the 3 on 2 dream, as it pertains to improved student achievement in the cognitive areas of reading and mathematics, and as it pertains to improved student attitudes, continues to be a dream--a dream that eight years later still has not come true.

The Views of Teachers, Parents, Principals and Other Citizens on the 3 on 2 Program

Although this evaluation team believes that 3 on 2, like any educational program, should justify itself on the basis of student educational outcomes, the team collected data on the history, operations, and characteristics of the 3 on 2 Program. This information was garnered from many sources. For example, there were six open hearings, widely publicized, to which all interested citizens were invited. Interviews were conducted with officials in the executive and legislative branches of state government, with Board of Education members, with Department of Education leaders, and with teachers, parents, principals, district school leaders, students, and other interested citizens. Questionnaire data were collected from teachers, parents and principals in the Spring of 1976. All of the state's 2,379 primary kindergarten through grade three) teachers were invited to complete a questionnaire. Three-fourths of them did. All of the state's 175 elementary school principals were

invited to complete a questionnaire. Eighty-two percent of them did. A random sample of 1,897 parents with children in 3 on 2 classrooms or self-contained classrooms were invited to complete questionnaires. Fifty-one percent of the parents did.

In addition, two other questionnaires were distributed in the Fall of 1976. A random sample of primary (kindergarten through grade three) teachers were invited to complete a "Teacher Views of Classroom Instruction" questionnaire. And, a random sample of fourth grade teachers were invited to complete a questionnaire designed to ascertain if there were observed differences between students in 3 on 2 classrooms and those in self-contained classrooms during the primary grades.

Teachers' and Parents' Views on Pupil Achievement of Cognitive and Affective Objectives

How do teachers and parents view the 3 on 2 classroom organization in relation to the self-contained classroom organization on cognitive and affective objectives?

Reading and Mathematics: There were no discernible differences between the descriptions provided by teachers in 3 on 2 classrooms and those in self-contained classrooms regarding the average progress of students in their classes in reading and mathematics.[18]

Grade four teachers were asked if they could identify which of their students had been in 3 on 2 and which had been in self-contained classrooms. Only the data from those who replied in the affirmative are reported in this section.

A greater proportion of grade four teachers indicated that the statements "are well prepared in reading" and "are well prepared in arithmetic" were more true for self-contained than for 3 on 2 students.[19]

Becoming Independent Learners: Teachers of 3 on 2 classes and teachers of self-contained classes described the progress of their students toward "becoming independent learners" in very similar ways--no discernible differences.[20]

Again, a greater number of grade four teachers indicated that the statement "are self-directed learners" was more true of self-contained students than of 3 on 2 students, with approximately half indicating "no difference."[21]

Exercising Self-Control: The 3 on 2 and the self-contained classroom teachers described the progress of their students toward "exercising self-control" in a very similar way--no discernible differences.[22]

Twenty of the 51 fourth grade teachers indicated that the statement "misbehaves frequently in class" was more true of 3 on 2 students. No teacher felt this statement was more true of students from self-contained classrooms.[23]

There was no difference between the way parents of 3 on 2 students and the parents of self-contained students described the self-control exercised by their children while at home.[24]

Wise Use of Time: There were no discernible differences between the way in which 3 on 2 and self-contained classroom teachers described the average progress of their students toward "using time wisely."[25]

A greater number of fourth grade teachers felt the statement "plan and use their time well" was more true of self-contained students than 3 on 2 students (23 compared to 10, with 15 "no difference").[26]

There was no difference between the parents of 3 on 2 and self-contained children in their description of the way in which their children spent their time at home.[27]

Developing a Positive Self-Concept: There were no discernible differences between the descriptions provided by 3 on 2 teachers and by teachers of self-contained classes on the average progress of their classes toward "developing a more positive self-concept."[28]

Over half of the fourth grade teachers indicated there was no difference for the two groups in the positive self-image they possessed.[29]

Getting Along with Other Children: There was no discernible difference between the descriptions provided by teachers of 3 on 2 and self-contained classes on the progress of their classes toward "getting along with other children."[30]

Approximately two-thirds of the fourth grade teachers indicated there was no difference between the two groups in their ability to "get along well with other students."[31]

There were no discernible differences in the descriptions by parents of 3 on 2 students and parents of self-contained students about the honesty and openness of their child's communication and the ability of their child to get along with brothers and sisters.[32]

In summary, reported above are the views of teachers and parents on the rate of student progress toward meeting cognitive and affective objectives. Although these objectives have been described as important ones for 3 on 2 classrooms, there were no differences reported in progress which favored the 3 on 2 classrooms. These data reinforce the student test data reported earlier which failed, emphatically, to make a case for 3 on 2.

Views on Other Objectives

At given points in time since the inception of 3 on 2, particular objectives have been enunciated which are not related directly to student educational outcomes. However, some of the objectives, if achieved,

would be supportive of cognitive and affective outcomes. Where data are available, the views of teachers, parents and principals on these objectives are reported.

To Increase Counseling Services for Pupils and Parents: The objective "to increase counseling services for pupils and parents" is, no doubt, a worthy one; but there is no evidence that the objective was either pursued or achieved in 3 on 2 classrooms more than it was in self-contained classrooms. The objective was viewed as being equally important by teachers in 3 on 2 classrooms and those in self-contained classrooms.[33]

A related objective, that of planning and conducting conferences with parents, was viewed similarly. No discernible differences in the importance of this goal were observed between self-contained teachers and 3 on 2 teachers; correspondingly, the relative frequency of parent-teacher conferences, as reported by the parents, was very similar.[34]

To Assess Each Pupil's Educational Progress: The objective of assessing each pupil's educational progress was viewed as being equally important by teachers in 3 on 2 classrooms and those in self-contained classrooms.[35]

To Accommodate Students with Special Needs: The majority of the sample of teachers and principals believe that both 3 on 2 and self-contained classrooms are appropriate for children with short attention spans, children of high, average, or low ability, children with behavior problems, shy children, and children with varying socio-economic backgrounds. However, most of the teachers believe that self-contained classrooms are more appropriate for children who lack self-direction.[36]

The majority of the sample of parents believe that children with the following characteristics should not be placed in 3 on 2 classes:

"children with learning problems," and "children who lack self-direction." A third or more questioned the advisability of 3 on 2 for "children with short attention spans," "children who learn slowly," and "children who don't behave well in school."[37]

Apparently, judging from the above observations by teachers, principals, and parents, the claims that 3 on 2 classrooms offer special opportunities and provide special attention to children with special needs are not claims shared by the majority of teachers, principals, and parents of primary grade students.

To Provide for Variable Grouping: One objective related to the effective operation of 3 on 2 is to provide for variable instructional grouping of the students based on the nature of the learner, the determination of what needs to be learned, and the nature of instructional activities. There was no discernible difference between the way in which teachers of 3 on 2 and teachers of self-contained classes viewed the importance of individual diagnosis of student learning. There was, however, a small difference favoring 3 on 2 in the importance of the goals related to the formation of groups: flexibility in grouping students, use of small group instruction, and one-to-one pupil-teacher interactions.[38]

To Provide for Flexible Scheduling: The objective of allowing pupils to progress at their own rate of learning was viewed as being equally important by teachers of 3 on 2 classrooms and those in self-contained classrooms.[39]

To Provide for Flexible Use of Classroom Space: Three-on-two teachers, in comparison to self-contained teachers, rated the goal of flexible use of classroom space slightly more positively.[40]

In summary, each of the objectives described above refers to operational objectives stated as part of the program specifications for 3 on 2 classrooms. The evidence collected in this evaluation indicated only a small difference in the importance of these program stipulations as viewed by 3 on 2 teachers and self-contained teachers; the small difference, when it did occur, favored 3 on 2. Classroom observational data, reported later in this report, suggest that differences in implementation of these goal statements between 3 on 2 classrooms and self-contained classrooms again slightly favor 3 on 2. What is clear, though, is that despite the differences in goal statements summarized above, 3 on 2 students do not perform in a superior manner on any of the program objectives, as previously noted in this report.

Basic Deficiencies in Design and Operation of 3 on 2

There are some fundamental problems associated with 3 on 2. Some of these problems date back to the conceptualization and design of the organizational mode; and others have plagued its operations over the years.

The team has already established the failure of 3 on 2 to yield greater educational outcomes than those of self-contained classrooms. In this section, some of the conceptual, design and operational problems of 3 on 2 are identified and discussed.

1. Three on Two was not inaugurated as an experimental program; rather, it began with the expressed objective "to eliminate the self-contained classroom in kindergarten through grade three and eventually grades four through six."[41] While the implementation strategies called for program evaluation, the objectives were clear that within six years, all of

primary education was to be 3 on 2 and phase-in would begin in the seventh year with grades four, five and six. Thus, the goodness of 3 on 2 was assumed before the first classroom was organized, a most unusual and unwarranted introduction of an innovation.

2. Objectives of 3 on 2 have been ambiguous since its inception in 1968.

Retrospective objectives which have been written intermittently since 1968 have changed over the years. These changes have introduced inconsistencies that thwart efforts of teachers and principals to implement 3 on 2.

The evaluation team has identified and reviewed 29 sets of objectives which have been written since 1968. These objectives have emanated from offices of the DOE and reports of legislative committees.[42]

Although some themes appear to cut through the various sets of objectives (e.g., team teaching, vertical grading, variable teacher-pupil ratios, attention to pupils with special needs--gifted and slow learners), there are new objectives introduced from time to time (e.g., affording counseling time to each teacher, promoting diagnostic teaching, individualizing education, and eliminating the need for hiring substitutes).

Objectives of 3 on 2 which have been written have not been communicated with sufficient clarity for teachers to implement or for parents to voice informed opinions about the placement of their children in 3 on 2 or self-contained classrooms. For example, responses to the questionnaire revealed that only about one-fourth of the parents claimed to "know very much about the program."[43] Furthermore, approximately two-thirds of the principals did not believe parents understand enough about the 3 on 2 program (or schooling in general) to make that choice

wisely.[44] About half of the primary grade teachers who responded to the question did not believe parents have enough information to make the choice wisely; another one-third of the teachers responded "don't know."[45] Furthermore, most parents said that they were not given a choice in the classroom assignment of their children. Most of the teachers agree; and forty-two percent (42%) of the principals of schools with both 3 on 2 and self-contained classrooms acknowledged that parents were not given a choice.[46]

Primary teachers were asked if the 3 on 2 Program is limited by a lack of specificity about program goals and procedures; and a substantial number (over one-third) of the 3 on 2 teachers either agreed that there is a lack of specificity or they indicated that they "don't know." Of the self-contained teachers, seventy-seven percent (77%) either indicated that there is a lack of specificity for 3 on 2 program objectives or that they "don't know."[47]

The teachers were asked to rate from "very great" to "very little or none" the extent to which 22 different goal statements were goals of their classes. Responses of 3 on 2 and self-contained teachers are notable by their similarity.[48]

Overall, the objectives of 3 on 2 education which have been enumerated are not appreciably different from objectives of all primary education in Hawaii. Indeed, the first set of objectives published by the DOE acknowledged that, "Specific learning outcomes are the same for all children whether they are placed in 3 on 2 or self-contained classrooms. These are: to acquire basic academic learnings; to increasingly develop self-direction; to develop a more realistic and positive self-concept; and to establish satisfying interpersonal relationships."[49] This same point was reiterated in subsequent

statements.[50] These overall educational objectives were extended and modified in other program documents of a more comprehensive scope.[51]

Attention has already been called to the fact that 3 on 2 objectives changed from time-to-time. The point here is that 3 on 2 lacked objectives which were unique, and which were stated with sufficient clarity. The charge to 3 on 2 teachers seems to have been "do what everybody else is supposed to be doing, but do it more effectively."

3. Contrary to the well-established principle of program planning and development that "form follows function," 3 on 2 was designed as an organizational form without a clear understanding of educational outcomes or functions which were to be served by the new classroom organization.

In 1973, then Superintendent Dr. Shiro Amioka reported to the House Education Committee that, "The 3 on 2 Program is not a program per se but rather may be described as an organizational pattern which makes it easier for teachers to individualize instruction."[52]

An organization without a program invites a wide variety, indeed a hodge-podge, of programs for the structure. The team discovered that such has been the case, making the use of the term "program" for 3 on 2 subject to anybody's definition. One teacher observed that in her school, "Two out of three of the 3 on 2 classes...are being taught like self-contained classes. Each 3 on 2 class is divided into three groups, one group is usually taken to another available room to minimize the confusion, distraction, noise, movement, and behavior problems cause by large 3 on 2 classes."[53]

4. Contrary to another well-established principle of program planning and development that "those who are expected to implement a program are involved in its design," 3 on 2 was conceptualized and designed with no appreciable participation or input from teachers and

principals. As a consequence, this absence of professional input has rendered the "program" of questionable educational merit.

There is no small amount of folklore about how 3 on 2 came about. Some claim it was the brainchild of the Superintendent; others claim the idea belonged to the Senate Education Chairman. Still others think it came from the DOE's Research Division. Teachers know the idea was not theirs; and principals know the idea was not theirs. In response to the question, "Who was primarily responsible for the decision to implement (or not to implement) the 3 on 2 Program in your school?", about one-third of the primary (K-3) teachers indicated that they thought the principal was responsible, about eighteen percent (18%) thought the DOE was responsible while one-third indicated they did not know.[54] By far, the most prominent answer to the question by principals was "I don't know."[55]

With an unbelievably short notice (approximately two summer months) teachers and principals were told to "tool up" for a new program which would eventually eliminate every self-contained elementary classroom in the state! And, initially, 218 new teachers were to be employed. Teachers and principals were told (on July 25, 1968) that, "The plan will begin operation in September 1968, through state designation of the number of teams to be employed in each district, and subsequent district identification of coequal teams in select schools."[56]

5. By definition and in practice, the 3 on 2 teams are without effective leadership for planning. Team members are defined as "coequals" without a designated team leader.

In the first official publication of 3 on 2 objectives and implementation strategies,[57] the teams of three teachers were described as "coequals." That term has persisted over the years. Why some guidelines were never established for designating a team leader, or a

system of self-selection, is unknown. The teaching teams found various schemes for assignment of responsibilities among members of teams--annual rotation, alphabetical rotation, daily rotation, self-appointed leaders, and others. If everybody's responsibility is nobody's responsibility, then, for certain, nobody's responsibility is nobody's responsibility. One teacher stated the case succinctly, "Because of our human weakness, it was easy to 'pass the buck'--whether it was record-keeping, general housekeeping, disciplining of children--there was always someone to do it if you 'forgot'."[58]

6. The composition of 3 on 2 teams is without a discernible rationale which is applied uniformly.

Possibly, the most pervasive complaint of teachers and principals about 3 on 2 was "incompatability of team members."[59] This was not a surprising finding in view of the absence of role definitions for teachers as team members. Some teachers, anticipating the inevitable elimination of all elementary self-contained classrooms, caucused with fellow teachers with whom they thought they could get along, and voluntarily formed teams. Others were assigned to teams by the principal. Others stoutly resisted teaming. Conditions were such that in 1970, the Legislative Conference Committee called for "a course of action to remedy the problems arising from incompatible teachers working together."[60]

7. The substantial cost of 3 on 2 education beyond the costs of self-contained classroom education cannot be justified to Hawaii taxpayers on the basis of educational merits of the program.

Innovations in education typically are costly and the 3 on 2 Program appears to be particularly so. Clearly, the question of costs could not be answered solely on the basis of how much an innovation might be expected to cost. Rather, costs should be examined in relation to the

merits of the innovation. Thus, a fundamental question about costs is whether the commitment of fiscal and human resources to an innovation can be justified on the basis of its educational merits. How much is too much depends on the expected outcomes. This perspective prompted the team to pose two questions relating to 3 on 2 Program costs:

a. To what specific ends are the 3 on 2 Program resources committed?

b. Can the commitment of such resources be justified on the basis of the educational yield of the program?

As indicated elsewhere in this report, there is ample evidence that the 3 on 2 Program was conceptualized as an organizational rather than a programmatic innovation and has been implemented essentially as such. There are no program objectives that are unique to the 3 on 2 Program. Whatever program objectives that may be attributed to the program have come from a general set of objectives applicable to all primary education in Hawaii. The answer to the question about specific ends to which the 3 on 2 Program resources are committed must therefore be in the negative. That is, such resources have been committed to no specific instructional purposes other than the overall program objectives formulated for all primary education in Hawaii.

Failing to produce results that are unique to the program does not mean necessarily that the program is without merit; commitment of resources to the 3 on 2 innovation could be justified if the program were shown to be more efficient in producing the commonly desired student outcomes. Unfortunately, as reported earlier, there is no evidence that 3 on 2 has done so. On the contrary, the data in fact show that 3 on 2 students have not achieved better in reading than students in self-contained classes. Nor have they performed better in mathematics than

their self-contained counterpart. In affective areas, the self-contained students have done just as well as the 3 on 2 students. Not a single student achievement area tested showed 3 on 2 to be superior to self-contained classroom instruction.

Substantial amounts of fiscal and human resources have been committed to and, indeed, expended on 3 on 2. Although detailed cost data are not discussed here, it is worth pointing out that close to $9 million in additional personnel cost was expended on the 3 on 2 Program for the past school year (1975-76). The corresponding figure projected for the coming school year (1976-77) is well over $10 million. At this rate, each 3 on 2 student next year will cost taxpayers $355 more than that which will be spent on the education of each student enrolled in self-contained classrooms.[61]

Since the extra costs are not accompanied by increases in student educational outcomes or other evidences of educational merit, the inescapable conclusion is that the 3 on 2 Program, started in 1968 perhaps with more enthusiasm than sound planning, in fact represents a long-term investment of fiscal and human resources without visible promise of payoff. The team reiterates its introductory observation that substantial costs of 3 on 2 beyond the costs of self-contained classroom education cannot be justified to Hawaii taxpayers on the basis of educational merits of the program.

Classroom Descriptions

During the Spring data gathering site visit, members of both teams visited schools in all of the state's school districts. Observations were carried out in 25 classrooms, both 3 on 2 and self-contained; and

principals, teachers, parents, and students were interviewed. These school visits were of enormous help to the team in gaining an understanding of teaching and learning in Hawaii classrooms. The team members were struck by the great variety of classroom configurations and modes of instruction. These variations occurred in 3 on 2 and self-contained classrooms. As a consequence of this experience, the Adversary Team decided that it would be useful to the overall evaluation effort to do more controlled observations in the Fall. The team sought assistance from a specialist in open education, and the project co-directors contacted Dr. Vito Perrone, of the University of North Dakota, a nationally recognized expert. Dr. Perrone recommended the services of one of his former research associates, Dr. Michael Q. Patton, Director of the Minnesota Center for Social Research, the University of Minnesota. Dr. Patton joined the team for the Fall site visit, trained team members in the use of an observation interview guide to measure classroom instructional diversification, individualization, formality-informality, and centralization. The team drew a random sample of schools, and randomly selected 3 on 2 classrooms (grades two and three) and self-contained third grade classrooms to observe. The teacher of each of the classrooms (in the case of 3 on 2 one teacher was randomly selected from the team) and at least one randomly selected student were interviewed. Dr. Patton visited fourteen classrooms and members of the team collectively visited 29 additional cl[redacted]ooms--twenty-one 3 on 2 and eight self-contained.

Team members identified each classroom as to school district and organizational scheme and then described the observations in accordance with the following outline:

I. A typical day's schedule.

II. Classroom activities, especially in the teaching of reading and mathematics.

III. Proportional expenditure of teacher's time spent during a typical day working with all of the students as a group, small groups, and individual students.

IV. Ways in which students help (or hinder) each other.

V. Method of handling discipline problems in the classroom.

VI. Individualization in the classroom.

VII. Opportunities for students to make decisions among options or alternatives.

VIII. Relationship of teacher and students.

IX. Teacher contacts with parents.

X. Description of teacher teaming (3 on 2 classrooms).

XI. Other pertinent observations.

The classroom descriptions are included in the Technical Report.[62]

From these observations and interviews the team was able to describe similarities and variations of classroom operations. There was, as might be anticipated, a wide range in "overall individualization," a composite of scores on the separate dimensions of classroom structure (individualization, diversification, peer interaction, and decentralization). Dr. Patton, for example, observed a distribution of three classrooms rated high, nine rated medium, and two rated low. The Adversary Team observed a distribution of eight classrooms rated high, fifteen rated medium, and six rated low. Furthermore, from these two sets of observations the wide range in "overall individualization" was apparent in both the sample of 3 on 2 classrooms and the sample of self-contained classrooms.

Team members were struck by the innovative nature of some of the self-contained classrooms. In one school, for example, three

self-contained third grade teachers were teaming to teach specialized subjects in keeping with the special expertise of each teacher. In two other self-contained classrooms, individualization exceeded that of any of the 3 on 2 classrooms observed. Within self-contained classrooms, it is possible for the teacher to achieve the same degree of individualization expected from 3 on 2 teams.

Concluding Observations

The evaluation teams were charged to evaluate the effectiveness of 3 on 2. As the evaluation was being carried out, many questions were raised about the political and economic considerations of expanding, retaining at the current level, reducing the scope, or terminating the program. Many wondered if 3 on 2 funds might be available for other educational uses if the program were reduced in scope or terminated. Others wondered what would happen to the tenured 3 on 2 teachers if the program were reduced in scope or terminated. Still others wondered about alternative programs that might be adopted as replacements for 3 on 2 if the resources were retained by the DOE. These issues are interesting to the teams and are of enormous importance to the educational policy and decision makers in the state. However, these matters go beyond the charge of the evaluation team, which was obligated to study the program thoroughly and carefully, and to "tell it like it is."

The Adversary Team has carried out its charge faithfully. The team was obligated to study the data carefully and identify weaknesses of 3 on 2. The weaknesses identified are legion. Yet, none have been identified and reported which are not substantiated by the data.

The team concludes that the 3 on 2 classroom organizational structure has failed to provide educational outcomes beyond those of self-contained classrooms, that there are serious imperfections in its conceptualization, design and operations, and that, indeed it is not a program but a structure, a classroom configuration. The team has found little to recommend it for the future.

On the other hand, the decision-makers must be impressed, as the team was, by the range of talents (special areas of expertise) which this evaluation has shown to exist among primary teachers in both 3 on 2 and self-contained classroom organizations.[63] With the array of talents among the teachers; with the dedication of Hawaii's citizens for achieving high quality education for their children; and with Hawaii's educational leaders who fearlessly ask that their programs be studied and that the evaluators "tell it like it is," this team of evaluators concludes that the future is bright for the making of wise educational decisions in the state.

FOOTNOTES

1. 3 on 2 Evaluation Report 1976-77, Vol. I, Technical Report. Portland, OR: Northwest Regional Educational Laboratory, January 1977.

2. "Hawaii 3 on 2 Student Enrollment by District, Program and Grade Level," mimeographed. Hawaii Department of Education, corrected November 4, 1976.

3. The 3 on 2 Program. Hawaii Department of Education, July 25, 1968.

4. 3 on 2 Long-Range Program Improvement Plans, 1974-1977. Hawaii Department of Education, July 1974.

5. See Technical Report, Table 12

6. See Technical Report, Tables 17 and 21

7. There was one interaction of classroom organization with socio-economic status (SES). High socio-economic status (HSES) students in 3 on 2 classrooms scored higher than the HSES students in self-contained classrooms on one subtest, "Selecting Examples and Synonyms to Match Contextual Definitions." This relationship was reversed for low socio-economic status (LSES) students, with LSES students in self-contained classrooms scoring higher on the subtest than LSES students in 3 on 2 classrooms. (See Table 20, Subtest 1.)

8. See Technical Report, Table 10

9. See Technical Report, Tables 17 and 21

10. There were interactions between classroom organization and socio-economic status on three subtests. HSES students in 3 on 2 classrooms scored higher than HSES students in self-contained classrooms on the "Fractional Numerals and Number Words" subtest, while LSES students in self-contained classrooms scored higher on the subtest than did LSES students in 3 on 2 classrooms. (See Table 20, Subtest 6.)

    In contrast, HSES self-contained students scored higher than HSES 3 on 2 students on two subtests, "Ordering Cardinal Numbers" and "Addition with Two-Digit Numerals." The pattern was reversed for LSES students. On the subtest, "Addition with Two-Digit Numerals," there was further interaction with the use of Hawaii English Program (HEP) materials; i.e., HSES self-contained students in non-HEP classrooms scored higher than HSES 3 on 2 students in non-HEP classrooms, while the reverse was true for HEP classrooms. (See Tables 23, 24 and 25 respectively.)

11. See Technical Report, Table 30

12. See Technical Report, Table 34

13. There was an interaction of classroom organization with socio-economic status on the subscale, "Self-Appraisal in General." HSES self-contained students had a more positive self-appraisal than HSES 3 on 2 students. The relationship was reversed for medium socio-economic status (MSES) students; there were no significant differences for LSES students. (See Table 35.)

14. See Technical Report, Table 34

15. See Technical Report, Table 34

16. See Technical Report, Table 37

17. There was an interaction between classroom organization and SES on two subscales, "Self-Appraisal in Relation to Peers" and "School Sentiment in Relation to Social Structure and Climate." HSES self-contained students scored higher than HSES 3 on 2 students; whereas this difference was reversed for MSES and LSES students. (See Table 39.)

18. See Technical Report, Table H-4.4.6.a and c

19. See Technical Report, Table I-2.6.d and h

20. See Technical Report, Table H-4.6.b

21. See Technical Report, Table I-2.6.a

22. See Technical Report, Table H-4.6.f

23. See Technical Report, Table I-2.6.b

24. See Technical Report, Table H-3.10

25. See Technical Report, Table H-4.6.l

26. See Technical Report, Table I-2.6.i

27. See Technical Report, Table H-3.10

28. See Technical Report, Table H-4.6.m

29. See Technical Report, Table I-2.6.f

30. See Technical Report, Table H-4.6.j

31. See Technical Report, Table I-2.6.c

32. See Technical Report, Table H-3.10

33. See Technical Report, Table H-4.4.f and t

34. See Technical Report, Table H-3.4

35. See Technical Report, Table H-4.4.i

36. See Technical Report, Table H-4.2.f

37. See Technical Report, Table H-3.5

38. See Technical Report, Table H-4.4.m, o and s

39. See Technical Report, Table H-4.4.l

40. See Technical Report, Table H-4.4.q

41. The 3 on 2 Program. Hawaii Department of Education, July 25, 1968

42. See annotated bibliography of 3 on 2 documents, Technical Report, Chapter X.

43. See Technical Report, Table H-6.2

44. See Technical Report, Table H-6.1

45. See Technical Report, Table H-6.1

46. See Technical Report, Table H-6.3

47. See Technical Report, Table H-4.7.s

48. See Technical Report, Table H-4.4

49. The 3 on 2 Program. Hawaii Department of Education, July 25, 1968.

50. Subsequent statements include: Administrative Guide and Implementation Handbook, Hawaii Department of Education, August 1969, and Third Revision, July 1973; 3 on 2 Progress Report, Hawaii Department of Education, January 1970; Testimony before the House Education Committee by Dr. Shiro Amioka, Superintendent, January 31, 1973; 3 on 2 Program Improvement Procedures Beginning in School Year 1975-76, Hawaii Department of Education, 1975.

51. Other such documents include: A Curriculum Guide for Early Childhood Education, Hawaii Department of Education, December 18, 1972; and Foundation Program Objectives for the Hawaii State Department of Education, Hawaii Department of Education, April 1974.

52. Testimony before the House Education Committee by Dr. Shiro Amioka, Superintendent, January 31, 1973.

53. Comment by one teacher on open-end question of Teachers' Questionnaire.

54. See Technical Report, Table H-4.1

55. See Technical Report, Table H-4.1

56. The 3 on 2 Program. Hawaii Department of Education, July 25, 1968.

57. Ibid.

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58. Comment by one teacher on open-end question of Teachers' Questionnaire.

59. Comment from teachers and principals during interviews.

60. Conference Committee Report, No. 20, 1970.

61. See Technical Report, Table 47

62. Dr. Patton's report is included in the Technical Report, Chapter X, and the classroom descriptions of team members are summarized in Chapter X, documented more completely in Appendix M.

63. See Technical Report, Table H-1.5

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THE HAWAII 3 ON 2 PROGRAM

THE ADVOCATE TEAM'S REBUTTAL

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Anyone who has ever observed or participated in a formal debate will agree that it is at the rebuttal stage that things really get interesting. For it is during the rebuttals that the two adversarial teams really take out after each other, attempting to refute the opposing team's claims and to assail the weaknesses in the opponents' proposals. Similarly, the members of our Advocate Team had been looking forward to receiving the Adversary Team's report so that we could discover where they thought the Hawaii 3 on 2 Program was weak. We were eager to defend 3 on 2.

It was with considerable disappointment, therefore, that we read through the Adversary Team's report when, on the appointed day in mid-December, we received it in Portland, Oregon. The Adversary Team report fails to spell out in crisp fashion just what it is that our opponents think is so inadequate about the Hawaii 3 on 2 Program. Oh, there are criticisms in the report, and plenty of them. But the organization of the report is such that we found it necessary to read most carefully in order to ferret out just what the Adversary Team really believes are the major defects of 3 on 2.

Furthermore, although the Adversary Team recommends by implication an outright termination of the program, they fail to provide one legitimate counter-proposal for consideration. Meaningful educational evaluation should provide decision-makers with information needed to make choices among action alternatives. Where are the alternatives which the Adversary Team proposes? We had hoped to engage in sensible contrasts between the merits of the Hawaii 3 on 2 Program and one or more counter-proposals set forth by our adversary colleagues. But such counter-proposals do not exist in the Adversary Team's report. No, they imply that citizens of Hawaii should obliterate an eight-year, multimillion dollar investment in educational improvement.

No attention is given to the financial, educational, or social implications of such a course of action. No effort is made to explain the feasibility of discharging hundreds of tenured teachers, nor to calculate the economic impact on the state that hundreds of unemployed teachers would create, nor to gauge the certain educational upheaval that would accompany the massive shifting of the non-terminated teachers throughout the state should 3 on 2 be abandoned. No, instead, the Adversary Team merely suggests that the program be terminated. In our view, such a suggestion without an accompanying analysis of its implications is not responsive to the needs of decision-makers in Hawaii.

The Adversary Team's Main Conclusions

After reviewing our colleagues' report, we were able, we believe, to sort out their main arguments. As we see it, the Adversary Team believes that the Hawaii 3 on 2 Program should be terminated because: *(1) Children in 3 on 2 classes did not score substantially better on the achievement and affective measures used in the evaluation; (2) Hawaii educators do not view the Hawaii 3 on 2 Program as being successful; (3) Even though a series of 3 on 2 operational objectives appear to be viewed as more important by 3 on 2 teachers, these differences were not sufficiently large; (4) The Hawaii 3 on 2 Program was not effectively installed, nor has it been properly nurtured since its inception; (5) The costs of the Hawaii 3 on 2 Program are excessive; (6) It is possible to achieve the same degree of individualization in a self-contained class as in a 3 on 2 class.* These, then are the Adversary Team's major points. How well do they defend them? In our view, not well at all. Let's take these claims up, point-by-point, to examine their validity.

Claim #1: *Children in 3 on 2 classes did not score substantially better on the achievement and affective tests used in the evaluation.* With respect to this contention, our Advocate Team's initial report deals extensively with the numerous reasons that the kinds of testing instruments employed in the evaluation were suspect. In all likelihood, the standardized achievement tests used were instructionally insensitive to the effects of the 3 on 2 Program. The criterion referenced achievement tests provided only after-the-fact instructional targets, hence no targets at all. The pupil affective measures, prepared under considerable time pressure, failed to discriminate effectively between pupils, even within a particular subpopulation such as the students in 3 on 2 or self-contained classes. In short, the results yielded by these measures, while suggestive, should hardly be considered definitive.

But, one might ask, if you Advocate guys thought the measuring instruments were inadequate, why did you agree to have them used? After all, aren't weak measures worse than no measures at all?

Well, you'll have to remember the advocate-adversary structure of this evaluation. According to our understanding of the ground rules, either team would have the right to go after data which might be useful to its side of the case. Both teams agreed, in advance, to secure a wide-ranging array of potentially relevant data. The test results, if they are accepted without reservation, do indeed favor the Adversary Team's position. They had a responsibility to secure such data. Our team would have also, had the coin toss put us on the other side of the case. But if so, we would have expected that our opponents would have exercised their proper responsibility and pointed out any deficiencies of the testing instruments used. Merely because a testing device is employed does not automatically render its results sacrosanct.

While our team would have been jubilant (and astonished) had the test results come out in favor of 3 on 2 kids, we were far from distressed that there were no significant differences between the 3 on 2 and self-contained youngsters. Given the nature of the measuring instruments, such results were to be expected. They are definitely not damning to the Hawaii 3 on 2 Program.

Claim #2: *Hawaii educators do not view the Hawaii 3 on Program as being successful.* In a section of their report dealing with the views of teachers, parents, and principals, the Adversary Team attempts to demonstrate that the 3 on 2 Program is not viewed by Hawaii educators as being successful. Their attempt was a decisive failure. Let's see why.

In the first place, they accurately identified the educational constituencies concerned, namely teachers, parents, and principals. These were the three groups that both teams personally interviewed and polled via questionnaires. Why is it, then, that when the Advocate Team gets down to particulars, they almost wholly avoid reporting any reactions from principals? After all, principals represent a truly unique constituency. Whereas teachers, whether they are in a self-contained or 3 on 2 class, may have partisan views because they are actually functioning in one of the two situations being evaluated, there is no such built-in bias with principals who have both 3 on 2 and self-contained classes in their schools. Such principals, as experienced educational leaders, are in a far better position to appraise objectively the relative merits of 3 on 2 and self-contained classes. Why, then, were principals' judgments largely overlooked by the Advocate Team? The answer is all too clear. Principals' evaluations were omitted because they represent an emphatic vote of support for the Hawaii 3 on 2 Program.

Having avoided principals' data for the most part, the Advocate Team then presents a sample of evaluations from fourth grade teachers regarding the merits of various aspects of 3 on 2 and self-contained classes. Their fourth grade teachers consistently fail to report any dramatic advantages for the Hawaii 3 on 2 Program. What a totally unstartling finding!

Let's recognize just what's going on here. A group of self-contained teachers is being asked to judge the relative worth of 3 on 2 and self-contained classes. Is it not completely predictable that teachers of self-contained classes would view with more favor that same organizational structure even it if occurs at a lower grade level? That's like asking a group of Republican governors to appraise the relative worth of Democratic versus Republican mayors. Impartiality is impossible.

We want to emphasize the point that the fourth grade teachers' failure to be supportive of the Hawaii 3 on 2 Program does not constitute significant evidence. Indeed, it may merely represent the partisan view of a potentially biased group.

In addition to the many responses from fourth grade teachers, the Adversary Team reports seven contrasts (pages 13-15) between 3 on 2 and self-contained based on the reactions of the numerous K-3 teachers whose opinions were gathered via questionnaires. In all seven of these contrasts (for example, with respect to such factors as reading achievement and wise use of time), the Adversary Team reported that there were no substantial differences between the teachers in self-contained classes and those in 3 on 2 classes in their perceptions of pupils' average progress with respect to these seven characteristics. The characteristic phrase used by the Adversary Team was that there were

"no discernible differences" between the descriptions provided by the two teacher groups.

The Adversary Team again used such data to support their contention that the Hawaii 3 on 2 Program fails to secure support from Hawaii educators. They fail to note, however, that there were other questions addressed to the teachers of Hawaii which fail to coincide with that contention. For example, as reported by our Advocate Team, over 85 percent of the 1,175 3 on 2 teachers polled and over 50 percent of the 574 self-contained teachers polled want to maintain or expand the Hawaii 3 on 2 Program. That hardly sounds like a repudiation!

But let's look more closely even at the seven contrasts reported by our colleagues from the Adversary Team. If we inspect the data carefully, we see that when the two groups of teachers were asked to report whether their students were making "very great" progress, in six of the seven contrasts a difference in favor of 3 on 2 was reported. Does this sound like "no discernible difference?" It doesn't to us.

In essence, then, we do not believe that the Adversary Team has even come close to supporting their contention that Hawaii educators fail to endorse the Hawaii 3 on 2 Program. To the contrary, the manner in which our colleagues have handled the data dealing with this question suggests that they recognize their vulnerability on this score. As the Advocate Team demonstrated accurately in its original report, the principals, teachers, and parents of Hawaii are all supportive of the Hawaii 3 on 2 Program. In their view, the Hawaii 3 on 2 Program is working.

Claim #3: *Even though a series of 3 on 2 operational objectives appear to be viewed as more important by 3 on 2 teachers, these differences were not sufficiently large.* Frankly, we were perplexed regarding this

entire section of the Adversary Team's report. Did they include it to demonstrate that 3 on 2 teachers believe such procedures as instructional grouping are more important? They did just that, of course, and we're delighted. Our only guess is that our colleagues were looking for larger magnitude differences favoring 3 on 2 teachers. Otherwise, this section of their report appears to favor our case.

Claim #4: *The Hawaii 3 on 2 Program was not effectively installed, nor has it been properly nurtured since its inception.* We concede this point without debate. It is precisely because of the manner in which the Hawaii 3 on 2 Program has been initiated and coordinated by the DOE that its full instructional potential has not been realized. Yet, as we contended in our original report, even though the Hawaii 3 on 2 Program is working, we want it to work even better.

It is for this reason that we set forth a series of tangible proposals to provide more effective DOE guidance for the program. We feel that the fact the Hawaii 3 on 2 Program has succeeded, in spite of the Adversary Team's claims about the lack of DOE support it has received, is a vindication of the program's basic soundness.

Claim #5: *The costs of the Hawaii 3 on 2 Program are excessive.* In the final report of the Adversary Team it is stated that "each 3 on 2 student next year (1976-77) will cost taxpayers $355 more than that which will be spent on the education of each student enrolled in self-contained classrooms." This statement is false.

The average elementary teacher's salary and benefits is $20,956 and for educational assistants is $8,843.[1] The average state enrollment for self-contained classes is 26 students, while the average for 3 on 2 classes is 59. Thus the staff costs per pupil for self-contained classes is $806

while the cost for 3 on 2 classes is $1,066 and the cost for modified 3 on 2 is $860. The cost for a self-contained class with a teacher and an educational assistant is $1,146. At the same time certain instructional materials costs are less on a per pupil basis in 3 on 2 classes than in self-contained classes because the materials can be shared across more students. For example, the HEP Lanugage Skills replacement costs for 1976-77 were $16.38 per pupil in self-contained classes but only $10.88 per pupil in 3 on 2 classes.[2]

In some 3 on 2 classes the student enrollment has risen to 64 students. In this case the per pupil cost drops to $982. With a modified 3 on 2 class of 64 students, the per pupil cost drops to $793 which is less than the existing per pupil cost in the average self-contained class. The point here is that per pupil costs can be manipulated by changing the student/teacher ratio.

In viewing the cost of 3 on 2 to the DOE it should be kept in mind that the legislature has appropriated extra funds to finance 3 on 2 that are separate from the general DOE funds. Thus, the funding of 3 on 2 did not cause the DOE to have to cut back on other educational programs. At the same time, the money appropriated by the state legislature specifically for 3 on 2 cannot arbitrarily be used by the DOE for other purposes. Several key legislators have stated in interviews with advocate and adversary team members that if 3 on 2 were terminated, the money would go into the state's general revenue fund rather than remaining as discretionary funds for DOE use. The prospects are clear. If the Hawaii 3 on 2 Program is terminated, the resources for education in Hawaii may be reduced dramatically.

Implications by the Adversary Team to substantially reduce or eliminate 3 on 2 have serious cost considerations that cannot be overlooked. The elimination of 3 on 2 may have disastrous financial and personnel

repercussions for Hawaii since the program currently employs 485 teachers, the vast majority of whom are tenured. Termination of 3 on 2 would involve reallocating some of these teachers and the possible termination of others since Hawaii does not currently employ that many probationary teachers who would be the first to be let go. The Adversary Team has failed to address these crucial economic and humane problems.

Claim #6: *It is possible to achieve the same degree of individualization in a self-contained class as in a 3 on 2 class.* This claim, if subjected to any kind of logical analysis, is patently false. It is absurd to contend that a single teacher can create the same kinds of individualization opportunities as might be devised where three teachers work together. The individualization potential in 3 on 2 classes is dramatically greater.

And how do our Adversary colleagues support this logically suspect claim? Well, in October they received an hour or two's worth of training from an individualization expert, then spent three or four days observing classes in operation. Indeed, they visited 21 3 on 2 classes and only eight self-contained classes. Yet, on the basis of their scant training, their obviously partisan interests, and a data-base of only eight self-contained classrooms, they expect someone to believe that "within self-contained classrooms, it is possible for the teacher to achieve the same degree of individualization expected from a 3 on 2 team." Incredible!

Reprise

In summary, we have demonstrated that each of the major claims made by the Adversary Team is basically unsupported. They chide the Hawaii 3 on 2 Program because "it is not a program, but a structure, a classroom configuration." Well, so what? If it's a classroom configuration

that works, that's just fine. And the Hawaii 3 on 2 Program is working. It can work better, that's certain. We have outlined a series of concrete proposals to improve it. Our opponents offer only a vague implication that the program be terminated.

They congratulate themselves for carrying out their "charge faithfully" and for their ability to "tell it like it is." In our view, their charge was to render an evaluation that would be helpful to Hawaii decision-makers regarding the Hawaii 3 on 2 Program. An implied recommendation that the program should be terminated, not followed up by analyses of the effects of such an action, provides little help indeed.

The Advocate Team reasserts its chief recommendation, namely, that the Hawaii 3 on 2 Program be maintained at its present level as an instructional option for Hawaii primary education, and that creative efforts to improve the quality of the program be initiated without delay.

On the basis of that educational evaluation, the choice facing Hawaii decision-makers is clear:

(1) To terminate the Hawaii 3 on 2 Program

(2) To maintain and improve the Hawaii 3 on 2 Program

We believe that of these two options, for the sake of the children of Hawaii, the choice must be to maintain and improve!

FOOTNOTES

1. These figures and the way in which they were derived are given in Table 47 in 3 on 2 Evaluation Report 1976-77, Vol. I, Technical Report. Portland, OR: Northwest Regional Educational Laboratory, January 1977.

2. See Technical Report, Table 48.

THE HAWAII 3 ON 2 PROGRAM

THE ADVERSARY TEAM'S REBUTTAL

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The Hawaii 3 on 2 Program was evaluated through the use of an advocate-adversary evaluation design. By random assignment, one team of evaluators (the Advocate Team) assumed responsibility for identifying strengths of the program; and the other team (the Adversary Team) assumed responsibility for identifying weaknesses. Both teams used the same bank of data, which is reported in a separate Technical Report.[1] Each team has filed a report which was shared with the other team for rebuttal. This is the Adversary Team's rebuttal of the Report of the Advocate Team.[2]

Recommendation and Conclusions of the Advocate Team

The Advocate Team has recommended that the 3 on 2 Program be maintained at its present level. Conclusions advanced by the team are: (a) the program is working; (b) it is working because it possesses some unique instructional advantages; and (c) it should be maintained as an instructional option for the children and teachers.

The Adversary Team will show that these conclusions are not supported by any educational outcome data.

Justifications Advanced by Advocate Team in Support of Its Conclusions

The following was advanced as evidence in support of the "it's working" conclusion:

1. The team claims to have visited "some" 3 on 2 classrooms which had previously been identified by the district curriculum specialists as being excellent. The team did not identify how many such classrooms were visited (only one was described in the Report). Nor did the team explain why a biased sample of classrooms previously determined to be "excellent" was selected for visitation rather than a more scientifically defensible random selection of classrooms, which could have revealed a comprehensive view of them.

2. The team reports results from a questionnaire item which asked elementary principals, teachers, and parents what they feel should happen to the 3 on 2 Program. Half or more of each respondent category, or sub-category, indicated a preference to expand or keep it at its present level. Not mentioned was the fact

that 50 percent of the respondents in two sub-categories, teachers in self-contained classrooms and parents of students in self-contained classrooms, also recommended reducing or eliminating the program.

3. Principals, whose schools had both 3 on 2 and self-contained classrooms, were asked to estimate whether students in 3 on 2 or self-contained classrooms were making greater progress on each of 14 areas of content, knowledge, and personal development. Those who selected one of the two classroom organizations tended to believe that 3 on 2 students were making greater progress. However, the reader must wonder why the team did not report that 50 percent or more of the principals believe there are no differences in progress between the two forms of classroom organization on nine of the 14 areas; and on the remaining five areas, at least 30 percent said there are no differences.[3] Also, not reported were estimates of teachers on the progress of pupils in their classes in these same areas, which reveal no discernible differences between 3 on 2 and self-contained teachers for any of the 14 areas.

Six presumed advantages of 3 on 2 advanced as evidence in support of the "it is working because of unique instructional advantages" conclusion were: (a) flexibility to organize students, (b) teachers can instruct in their areas of strength, (c) collegial interaction of teachers, (d) likelihood of compatible student-teacher relationships with three teachers in the room, (e) the instructional program can go on when a teacher is absent, and (f) younger children can learn from older children.

The following evidence was presented by the team to support the "advantages":

1. A specialist in individualized instruction thinks there is a higher than usual degree of real teaming in 3 on 2 classrooms than that he has found in other settings on the mainland.

2. "Large proportions" of parents identified four statements as major strengths of the program (from among 13 possible selections).

3. Teachers agreed with 3 of 14 positive statements descriptive of the 3 on 2 Program; and principals agreed with 5 of the 14 statements.

Evidence presented by the team for "preserving the program as an instructional option" was derived from responses by principals, teachers, and parents to the question, "How important do you feel it is to keep 3 on 2 as an option for those schools, students, and teachers who want it?" Most respondents thought it was either "very important" or "somewhat important."

In summary, the Advocate Team has recommended retention of the 3 on 2 Program at its current level, on the strength of the following: (a) responses to a cumulative total of five questionnaire items selected from three questionnaires, one each completed by elementary principals, teachers, and parents; (b) team visits to "some" 3 on 2 classrooms previously judged by district curriculum specialists to be excellent; (c) a specialist in individualized instruction thinks the teaming in 3 on 2 classrooms is better than that he has seen on the mainland; and (d) presumed inherent logic of the 3 on 2 classroom configuration.

That is all there is to the recommendation and to the evidence advanced. There is no more. A less than convincing case for expending $10 million next year, and even more each year the program is continued at its present level!

The Rebuttal

This rebuttal is directed primarily to three aspects of the Advocate Team's Report: (1) unsubstantiated criticisms of self-contained classrooms; (2) the sparsity of data in support of conclusions; and (3) the Team's failure to consider student achievement data.

Unsubstantiated Criticisms of Self-Contained Classrooms

One cannot fault the Advocate Team for supporting the 3 on 2 Program. That is what it was charged to do--to identify and report strengths of the program. What one can and must fault the team for doing, however, is attempting to enhance 3 on 2 by deprecating self-contained classrooms (and teachers in self-contained classrooms). One section of the Report, titled "Self-Contained Classes--Self-Created Problems," contains such unsubstantiated charges as: (a) "All too often,

teachers in self-contained classes are obliged to assign wheel-spinning activities to the rest of the class just so they can give attention to those groups who need it;" and (b) "the idea of providing sustained attention to individual learners must surely seem illusory to the harassed teacher of a self-contained class." The team further asserts that it was because the self-contained class carried with it such "built-in liabilities" that Hawaii educational architects initiated 3 on 2. The six "advantages" advanced for 3 on 2 are ones which the team asserts, "cannot be present in a single-grade self-contained classroom." While all of these claims are unsubstantiated, the most reckless threat is that "serious negative consequences--negative consequences that would be experienced by the children of Hawaii during their crucial, formative years" would result if 3 on 2 were eliminated or seriously reduced in magnitude. The team failed to identify what these serious negative consequences for children would be. Certainly there is no evidence to suggest they would learn less, or be less positively inclined toward themselves, their school or their peers.

The Advocate Team implied that the level of competence of elementary teachers is a matter of chance. In its reflections on self-contained classrooms, the team stated, "If we were lucky, we drew a good teacher and we learned." Presumably, 3 on 2 would obviate this draw; all students would be lucky. Such an argument presupposes that (a) teachers are less than competent and (b) working together, three less-than-competent teachers constitute a competent team. Neither of these suppositions is true in Hawaii. No differences were registered in responses of 3 on 2 and self-contained teachers who were asked to indicate the percentage of time in their own teaching when they did not feel totally confident in their subject matter competence.[4] Both groups expressed a high level of confidence. Also, both self-contained and 3 on 2 teachers indicated they possessed a large range of instructional strategies.[5] Further, there were no discernible differences between self-contained and 3 on 2 teachers in the reported percentages of the work week they spent in such activities as small group instruction, individual instruction,

supervising seat work, preparation of lessons, and counseling with parents and individual students;[6] nor were differences reported in goals of their classes.[7] The classroom observations revealed similar classroom activity profiles.[8] Finally, 97 percent of the teachers in each classroom organizational structure indicated they felt "sure" or "extremely sure" in carrying out all of their teaching responsibilities.[9]

Succinctly stated, since the pupil outcome data revealed no differences in learning,[10] 3 on 2 has not proven to be a viable, working alternative to today's self-contained classrooms in Hawaii.

The Sparsity of Data in Support of Advocate Team's Conclusions

The overall evaluation design of 3 on 2 was unusually comprehensive. The data gathered included cognitive achievement test data at three grade levels (using multiple forms of tests), affective achievement data at two grade levels, two questionnaires completed by teachers of the primary grades, one questionnaire completed by each of the following: (a) fourth grade teachers, (b) parents of children enrolled in the primary grades, and (c) elementary school principals. There were classroom observation reports, printed documents descriptive of 3 on 2, and much more. The Advocate Team cited data from three questionnaires, but was strangely silent on two others. The team cited only five items from the questionnaires, from among a cumulative total of more than 90 substantive items. The team manifested no interest in objective classroom observation data. Furthermore, the team failed to use some printed information descriptive of 3 on 2. For example, the team proposed six advantages of 3 on 2 which, it maintains, were "not plucked from any Department of Education document . . ." Wonder why? Surely the team could not presume to claim originality of these "advantages" which are published in at least three documents made available to the team.[11]

Where did all the data go? All were published in the Technical Report. All were available to the Advocate Team. They just weren't used by the team.

Had the team used the data, it would have found that those six "advantages" don't measure up. The first one, "flexibility in grouping students" is a goal of self-contained teachers as well as 3 on 2 teachers,[12] and principals see it as a goal of both.[13] Observations made by the Adversary Team, and documented in the Technical Report, revealed that teachers in six out of eight self-contained classrooms observed regrouped their students into smaller, more homogeneous groups based on ability. Furthermore, in 15 of the 21 3 on 2 classrooms observed, teachers indicated the students were placed in essentially three groups for large blocks of instructional time; these groups are not appreciably different from three self-contained classes in one large room.[14]

The second claim, that the 3 on 2 team can capitalize on its members' particular instructional skills so that teachers can instruct in their areas of strength; such as music, science, or art, presumes that 3 on 2 teaching teams were formed on the basis of each teacher's subject matter expertise. The teachers, however, when asked how their teams were formed, said by self-selection (47 percent) and by personal compatibility (45 percent). Only 15 percent said "to balance subject matter expertise."[15]

The third claim, that collegial interaction among 3 on 2 teachers makes them more professional, stronger teachers is not borne out in the data; particularly, pupil learning outcome data reflect no differences favoring 3 on 2 teachers.

The fourth claim, "children have a better chance of finding an adult to whom they can relate" is mathematically true (by a ratio of three-to-one). There seems to be a presumption, however, that teachers are by nature incompatible with a segment of their pupils, but that pupils in 3 on 2 classrooms, by shopping around, can find one compatible teacher. One self-contained teacher who had previously taught six years in a 3 on 2 classroom said that she was able to know her students better in the self-contained class, that students in 3 on 2 classes tended to play one teacher against the others.[16]

The fifth point, "when one teacher is absent, instruction in the classroom can go on largely undisturbed, by the other two teachers," seems to argue against the need for three teachers.

Finally, the team's assertion that "younger children can learn from the older children in 3 on 2 classes" may be possible. However, the value of students' tutoring each other as a formal part of the instructional program is far from being universally acclaimed by teachers. Twelve of 18 3 on 2 teachers interviewed in conjunction with classroom observations by the Adversary Team indicated that they do not believe in the practice; nine of them said student tutoring was more of a hindrance than educational benefit; and four of the eight self-contained teachers interviewed said it was a hindrance.[17]

In summary, data presented by the Advocate Team in support of its conclusions and recommendations were unusually sparse. Advantages of 3 on 2 cited by the team are restatements of arguments first advanced in 1968 when the program was begun. In 1968, these statements were promises of what 3 on 2 might accomplish. Today, nine years later, they are still promises. Taxpayers have a right, indeed an obligation, to ask when will the promises become reality? When will students be expected to learn more because of this program? There are not yet any student achievement output data which favor the program.

Failure to Consider Student Achievement Data

The Advocate Team acknowledged that results of the extensive testing program did not favor the 3 on 2 Program, but the team maintains it never expected the tests to identify differences between students in self-contained and 3 on 2 classrooms. The fault lies in the tests, the team suggests, not in the absence of actual differences which favor 3 on 2. All of the tests were criticized. The norm referenced tests (NRT) were criticized because they were norm referenced; the criterion referenced tests (CRT) were criticized because of alleged "after-the-fact" use of the tests; and the affective tests were criticized because existing

instruments were used rather than the evaluation team's undertaking the development of new ones.

These criticisms are not valid. From the outset of the evaluation, it was recognized by both the advocate and adversary evaluation teams, and by the project co-directors that students would need to be tested in the cognitive and affective areas, and multiple forms of measurement were selected. The selection of all tests was endorsed by both teams, the project co-directors, and representatives of the Hawaii Department of Education.

Use of Standardized Tests. In selecting the standardized tests, particular attention was given to content validity--the extent of agreement of the test with the educational objectives in the basic areas of reading and mathematics. Additional selection criteria included the appropriateness of the test material and suitability of the grade range of the tests for Hawaii students.[18]

Criticisms of the use of standardized tests in program evaluation are not unusual. Critics generally assert that the tests cannot detect differences when two or more programs are contrasted, and they cannot detect differences between and among groups, even when other data have reflected differences.

The 3 on 2 evaluation, although comparative in nature, is not a program evaluation. Two programs with different or unique program goals are not being compared. Rather, 3 on 2 is an alternative classroom organization with the underlying assumption that students in these classes "will exhibit greater gain than students in self-contained classes in attaining the program objectives which are the same for all children regardless of classroom organization."[19] Thus, arguments against the use of standardized tests because of their inadequacies to identify unique program objectives are not pertinent in this evaluation. With the program objectives (except anticipated level of attainment) being the same for both groups, it is reasonable to expect larger means on test scores of 3 on 2 than of self-contained classrooms because of the "treatment effect." The means, however, are not larger.

Also, differences were consistently detected, as expected, among the levels of socio-economic status. In that regard, the standardized tests did detect differences when differences were known to exist.

The cumulative evidence suggests strongly that there are no differences in achievement for the tests to detect, and that the Advocate Team has presumptuously attributed the failure of 3 on 2 to yield greater achievement gains on deficiencies of the tests.

Use of the Criterion Referenced Tests. Many who criticize standardized, norm referenced tests do so in conjunction with "pushing" another test form, the criterion referenced tests. This is the position of the Advocate Team (except the team criticizes the use of CRT in the 3 on 2 evaluation--criticisms which surfaced after the tests failed to detect differences favoring 3 on 2). These arguments, CRT versus NRT, are for the most part hollow and "sloganese." Of importance are (a) that whatever tests are used be content valid and (b) that the tests be equally appropriate for all participants.[20] Both of these matters received careful attention in the 3 on 2 evaluation.

CRTs were used to supplement the standardized tests. These tests (12 subtests) related more specifically to subobjectives within reading and mathematics than the standardized tests which measured more general objectives. The CRT's were selected with the same high degree of care and attention as described above for the standardized tests.[21]

The Advocate Team's claim of "after the fact" administration of the tests is patently false. The criteria are among the established, widely announced, and distributed sets of goals and objectives for all Hawaii students. They have been judged by Hawaii educational personnel as highly significant in the development of young people. The finding of no differences between 3 on 2 and self-contained students suggests, once again, failure of 3 on 2 to enhance the attainment of a common set of learning objectives.

Use of Affective Subtests. Both teams supported strongly the importance of data describing the performance of pupils in the affective domain if the efficacy of the 3 on 2 organizational scheme were to be properly ascertained. After carefully assessing the availability of such instruments, the Student Attitude Inventory, with seven subscales, was compiled from well-known attitude scales published by the Instructional Objectives Exchange.[22] There were no differences in the affective subtest scores. The students, regardless of classroom organization, possess for the most part positive attitudes toward themselves, their class, and their school.[23]

Summary Comments

The Advocate Team argues for retention of the 3 on 2 Program mainly on the basis of presumed logical advantages, logic that has worn thin over the years, when one considers (a) the absence of pupil outcome achievement data favoring the program and (b) the presence of a $10 million price tag next year which will continue to grow in the years ahead.

No doubt, as a diversionary technique in the absence of supporting data, the Advocate Team elected to attack self-contained classrooms, the evaluation study design, and the entire range of tests used in the evaluation.

The team could not counter the facts that learning outcome data failed to show any advantages of 3 on 2 over self-contained classrooms; and that teachers and parents generally described the progress and behavior of their students and children in the same way--no discernible differences attributable to classroom organization. The only consistently supportive evidence presented by the Advocate Team was information from the principals' questionnaire. Principals tend to like 3 on 2. The observed discrepancies, however, between the principals' views and pupil performance data together with the judgments of teachers and parents, who each day work with these students, prompts one to wonder if the myriad of daily administrative tasks does not overshadow the principals' capacity to keep abreast of the performance of groups of children in each class.

The Advocate Team's claim that "three teachers and 60 or so children simply have it better than one teacher and 25 children" was put in perspective by one teacher who noted, "As a teacher, I prefer a 3 on 2 situation; but for my own children, I requested self-contained classrooms for them, knowing the kind of concern and teaching they would be receiving."[24]

The Adversary Team has acknowledged the few valid points registered by the Advocate Team, and has pointed out glaring weaknesses of the Report, weaknesses which are legion. Much of the Report contained posed photographs which could just as easily have been made in self-contained classrooms, and fictional stories of children. Fiction is fiction wherever it is found, but fiction in an evaluation report is more than a little disconcerting.

FOOTNOTES

1. 3 on 2 Evaluation Report 1976-77, Vol. I, Technical Report. Portland, OR: Northwest Regional Educational Laboratory, January, 1977.

2. W. James Popham, Dale Carlson, Thomas R. Owens, and Michael D. Hiscox. 3 on 2 Evaluation Report 1976-77, Vol. II, Team Interpretations and Recommendations. Portland, OR: Northwest Regional Educational Laboratory, January 1977.

3. An example of the unusual manner in which these data were reported by the Advocate Team is contained on page 16 of the team's Report: "...for the 37 percent who perceived a difference in the effectiveness of reading instruction, 84 percent favored 3 on 2." On this item, 31 percent favored 3 on 2; 6 percent favored self-contained; and 67 percent saw no differences. This is an example of the team's claim that, "Some of the comparisons are astonishingly favorable toward the Hawaii 3 on 2 Program," even with two-thirds of the respondents who saw no differences in pupil effectiveness in the two classroom organizations.

4. See Technical Report, Table I-1.9

5. See Technical Report, Table I-1.10

6. See Technical Report, Table I-1.8

7. See Technical Report, Table H-4.4

8. See Technical Report, Appendix M

9. See Technical Report, Table I-1.17

10. See Technical Report, Chapter IV.

11. The six "advantages" can be found in the following documents: (1) The 1968 Conference Committee Report #3, Hawaii State Legislature, pp. 9-10; (2) 3 on 2 Administrative Guide and Implementation Handbook, Third Revision, July 1973; and (3) Report of Meeting on 3 on 2: Review of Conference Committee Report #3, January 29, 1974.

12. See Technical Report, Table H-4.4.s

13. See Technical Report, Table H-4.4.s

14. See Technical Report, Appendix M

15. See Technical Report, Table H-1.2

16. See Technical Report, Observation No. 22, Appendix M

17. See Technical Report, Appendix M

18. See Technical Report, p. 22, for a description of Test Selection Procedures.

19. 3 on 2 Long-Range Program Improvement Plans, 1974-77. Hawaii Department of Education, July 1974.

20. This position was reinforced by discussions with Professor Lee Cronbach of Stanford University about this controversy.

21. See Technical Report, pp. 34-36, for a description of Test Selection Procedures.

22. See Technical Report, p. 57, for a description of Test Selection Procedures.

23. See Technical Report, Chapter V.

24. Response on open-end question of Teachers Questionnaire for Grades K-3.