

FINAL EVALUATION OF TECHNICAL EDUCATION PROJECT (PRODET)

I. INTRODUCTION

The Proyecto Educacion para el Trabajo (PRODET) was initiated in September 1990, following the signing of a cooperative agreement between USAID/Chile and the Centro de Investigacion and Desarrollo de la Educacion (CIDE). A total of US \$900,000 in funds was committed to this activity, which received its last disbursement in December 1993. Since then, CIDE has committed its own internal funds to continue, albeit at a reduced level, many of the activities begun under the project. The goal of PRODET was to help create a highly skilled workforce to support the rapidly growing, export-oriented economy of Chile. The purpose of the project was to establish a more effective secondary level technical-vocational education (TVE) system through a number of modestly funded initiatives:

- Creation of six (6) model pilot schools which incorporate the proven elements of competency-based instruction (CBI), private sector oriented advisory committees, student orientation, work-study, employment counseling and graduate tracking programs;
- Development of local expertise in CBI in secondary and post-secondary level technical education institutions;
- Promotion to key leaders of the business community, Ministries of Education and Labor, technical universities, labor unions, and municipalities, of the need to improve secondary level TVE and the benefits of adopting the concepts embodied in the pilot schools;
- Encouragement of representatives of local businesses to work in *partnership* with the pilot schools;
- Creation of a clearinghouse in CIDE to serve as a national resource center on TVE.

II. EVALUATION SUMMARIES

A. Previous Evaluation

The project was first evaluated in May 1993 by Gary Russell. The evaluator spent two weeks in Chile visiting the six pilot schools, meeting with representatives of the business community, CIDE, the Ministry of Education (MOE), and USAID/Chile. The evaluation complimented CIDE on a number of significant project accomplishments:

- establishment of 6 pilot schools, each advised in the design of the new CBI curriculum by an active private sector committee;
- development of local expertise in competency-based instruction;
- endorsement by the business community and the MOE of the CBI teaching method;
- establishment of the first technical-vocational education clearinghouse in Chile;
- dissemination of locally developed instructional materials on TVE to the private sector and Chilean educators;
- recognition by the local private sector leadership of the important role of TVE in developing a skilled workforce. This recognition was manifested in the active participation of the six pilot school business advisory committees as well as the funding support provided to the National Olympics by local businesses.

The evaluation was not entirely favorable however. Among the most noteworthy shortcomings were: slow implementation of several key project components; inadequate participation in the project by the MOE and national business association, the Confederacion de la Produccion y del Comercio (CPC); inappropriate U.S. based training; and absence of a strategic plan to help ensure project benefits are sustained and replicated on a national scale. In response to the noted deficiencies, a total of ten recommendations were developed, nine of which were addressed to CIDE and one to USAID/Chile. The focus of this final evaluation will be to assess the extent to which these recommendations have been implemented, and the overall project purpose realized.

B. Current Evaluation

The project has made significant progress in many areas, but most notably in the implementation of CBI in the six pilot schools. The major findings of this final evaluation are:

- The CBI curriculum has been approved by the MOE and is now being applied in three pilot schools; the remaining three schools are scheduled to implement CBI in 1995
- Developing the CBI curriculum was done with the active participation of the local private sector. However, once CBI is implemented, it is unclear what

relationship the private sector will have with the pilot schools

- In spite of the success of CIDE in improving significantly the quality of instruction in the six pilot schools, the overall purpose of the project (to improve the effectiveness of the TVE system) will not be realized unless more financial resources are provided to help develop and implement CBI in every TVE school in Chile
- Due to a lack of resources, the project has made minimal progress in developing the other components of the pilot schools such as the student orientation, work-study, employment counseling and graduate tracking programs
- Throughout the project, the private sector was actively involved in PRODET at both the national and local level. Their participation was manifested in the school based advisory committees, sponsorship of the National Conference on Education and Work, and contributions made to the National TVE Olympics. However, no strategy has been developed to ensure that this level of involvement continues after the project
- The impact of training over 1000 educators in CBI will be ephemeral unless intensive follow-up training is provided to these same individuals
- PRODET successfully leveraged funds from other sources to introduce complementary learning technologies into the pilot schools, such as applied mathematics
- The success of PRODET in Chile has generated interest among the Ministries of Education in Uruguay and Argentina to implement a similar project in those two countries.

Overall, the project has accomplished a great deal with a relatively small amount of funding. The most significant contributions of PRODET have been: i) a dramatically improved TVE curriculum that will raise the skill and productivity levels of the future workforce of Chile; ii) a recognition by the business community that they must become intimately involved in TVE if the educational system is to produce competent graduates, trained in relevant skill areas; and iii) the first documentation center on TVE in the country which is assisting TVE educators throughout Chile to improve the quality of their instruction.

While the accomplishments of PRODET are impressive, they may not be lasting as additional resources will be needed to sustain all

three major project components: implementing CBI; promoting the involvement of the private sector in TVE; and maintaining the documentation center. It was hoped that the Ministry of Education, World Bank, or other donor would carry on the work of PRODET after the exhaustion of USAID funds. Unfortunately, this has yet to occur which consequently puts at risk the long-term success of the project.

III. METHODOLOGY

This evaluation relies exclusively on an extensive volume of written materials provided by CIDE, the project grantee. Ms. Ethel Brooks, R&D/OIT, facilitated the gathering of project documentation during a recent visit to Chile.

The written information reviewed included the project's logical framework, project plan, quarterly project budgets and status reports, survey report of pilot activities, CIDE quarterly bulletins, several project funded studies, CBI occupational profiles, memoranda of understanding establishing the terms of pilot school activities, comprehensive list of project accomplishments provided by CIDE, and responses by CIDE to a number of specific questions posed by evaluator.

The inability of the evaluator to assess the project firsthand obviously limited the depth and scope of this final analysis of PRODET. For example, it was not possible to verify the information provided by the project implementor, CIDE nor ask the type of detailed questions posed to project beneficiaries during summative evaluations such as this one. Finally, it was not possible to evaluate the quality of the principal product of the project, the CBI curriculum, nor the capacity of teachers to effectively implement it in the classroom.

The *impact* of the project cannot, of course, be evaluated until a sufficient number of students have been subjected to the new CBI curriculum. Accordingly, it is recommended that a subsequent evaluation be conducted in 3-5 years to measure the level of achievement among affected students of the project. A comparative study of CBI versus non-CBI trained students would probably be the most demonstrative way to measure impact.

IV. STATUS OF PROJECT COMPONENTS

A. Establishment of Six Pilot Schools

By the end of the project (scheduled for December 1994), six pilot schools were to have been established. These schools were to each have implemented CBI curriculum in all vocational subjects; established a fully functioning private sector oriented school advisory committee; instituted a student orientation,

work-study, and employment counseling program, and developed a management information system (MIS) to track job outcomes of school graduates. The extent to which these components have been fully implemented in the six schools varies considerably.

Following a circumspect review, CIDE selected six of seventeen schools which had expressed an interest in becoming pilots under the project. The schools were chosen based on three criteria: a) level of commitment expressed by teachers and school administrators to becoming a "demonstration" school; b) geography, as the major regions of Chile had to be represented; and c) school classification, as the pilots had to be a mix of municipal, parochial, and corporately managed schools.

The six schools chosen were: La Serena (municipal--residential construction and mining); La Ligua (municipal--industrial sewing); Valparaiso (municipal--culinary arts); Santiago (corporate--construction and furniture making); Curico (parochial--secretarial science and bookkeeping); and Talcahuano (municipal--marine engine mechanics and maintenance). The creation of each pilot school was formalized with a memorandum of understanding between the school, local business association, and school administrative authority.

1. Implementation of CBI Curriculum

Three schools, Curico, La Serena, and Santiago, began implementing CBI in 1994 after receiving approval from the Ministry of Education. The three remaining schools plan to implement the new curriculum in 1995. In every school, the teachers worked closely with technicians from local businesses to develop and validate the competency-based curriculum. Throughout this process, CIDE staff provided invaluable technical assistance and encouragement, visiting each school at least twice, and as many as four times, monthly. CIDE plans to continue to assist the schools in the implementation of CBI until December 1994, after which time it is expected that all six schools will be using the CBI curriculum.

2. Private Sector Oriented Advisory Committees

All six pilot schools have established advisory committees to help ensure that the newly developed curriculum is valid. In most cases committee membership is limited to three teachers and three representatives of relevant local businesses. A few school committees have wider representation, with members of the MOE, municipality, and local university participating as well. For the most part, the work of the committees has been limited to developing the CBI curriculum. While this is the most important component of the pilot school, it is not the only one. The committees are expected to also help develop school evaluation standards, hire graduates, and establish a work-study and

employment counseling program. Progress in these areas has been minimal, however.

To further expand involvement of the private sector in vocational education, PRODET has helped to establish a regional private sector council in regions V and VIII. These councils, consisting of businesses from the entire region, have a broader mandate than the school based advisory committees, although their exact responsibilities and accomplishments to date are unknown.

In addition to the committees working with the six pilot schools, all 36 corporately managed schools have established private sector advisory committees of their own. These committees are a direct result of PRODET and presumably provide the same advisory services as those affiliated with the pilot schools.

3. Student Orientation, Work-Study, Employment Counseling and Graduate Tracking

These components of the pilot schools have not been developed as CIDE has placed a priority on implementing the CBI curriculum. In view of the limited amount of funding available for pilot activities, this decision by the CIDE leadership appears to be a sound one. The implication, however, is that during the design of this project, CIDE and USAID significantly underestimated the level of effort that would be needed to introduce a new curriculum in the six schools.

B. Development of Local Expertise in CBI

The process of institutionalizing competency-based instruction in Chile began in the Fall of 1990 with an intensive ten week training course at Ohio State University for ten Chilean participants from key institutions involved in TVE, including the Ministry of Education, the private sector, CIDE, and municipal government. Since then, CIDE has sponsored a number of 1-3 day workshops to both promote the CBI methodology and to train curriculum specialists of the MOE and vocational teachers in how to implement it. In addition to these workshops, CIDE has provided intensive technical assistance in CBI to teachers and administrators of the six pilot schools. To date, more than 1,000 persons have received training in CBI under the project (CIDE--6; MOE--117; University Professors--240; Secondary Teachers--701).

During the course of the past three years, an additional 50 Chileans received training in the U.S. in the areas of CBI administration, implementing CBI in the technical areas of forestry, hydroponics, and refrigeration, and in the related area of applied mathematics.

C. Promotion to Key Public and Private Sector Leaders of

Need to Improve Secondary Level TVE

Raising the public's awareness about the importance of TVE to the future of the Chilean economy began with a National Conference on Education for Work, held in November 1990. This conference was organized by the CPC, the major labor union federation, Central Unitaria de Trabajadores (CUT), and Ministries of Education and Labor, and attended by 271 participants. Proceedings from the conference were published by CIDE and disseminated widely throughout Chile.

Since then, CIDE has developed numerous written materials on TVE and sponsored a number of subsequent events to further educate the public about the role of TVE in the economy and need to improve the current system of secondary level vocational instruction.

In order to effectively present its case to the public, CIDE developed a number of substantive materials on TVE and disseminated the documents widely through the project funded clearinghouse. The topics covered nearly every aspect of TVE, from financing training to evaluating the relationship between secondary and post-secondary TVE (see annex I for complete list of documents produced under PRODET). A number of tools to guide users of the new CBI curriculum were also produced under the project, including a software program and video specifically designed to help secondary level teachers develop CBI instruction modules.

As a natural follow-up to the national conference, CIDE held four seminars on topics related to education for work in regions V, VII, VIII, and IX. These seminars were well attended by business representatives, university professors, mayors and other locally elected authorities, and representatives from local TVE schools and the Ministries of Education and Labor.

In an effort to showcase the talents of vocational students, CIDE, with financial backing from the private sector, sponsored two national competitions, "Las Olimpiadas," of secondary level vocational students in 1991 and 1992. An average of 400 students from 150 schools participated in each competition. The Olympics were held at the University of Santiago and generated lots of attention from the business community.

Project staff of CIDE have continuously been promoting the work of PRODET to educational, business, and government organizations throughout Chile. CIDE staff have invited representatives from the local business community, regional MOE, municipality, and local university to observe the pilot schools in hope of garnering additional support for project activities.

The widespread dissemination of materials on TVE provided through the CIDE based clearinghouse has also broadened the reach of PRODET to every secondary vocational school in Chile.

D. Encouragement of Representatives of Local Businesses to Work in Partnership with the Pilot Schools

Through the private sector advisory committees, local businesses have been actively engaged in helping the schools develop, validate, and implement the CBI curriculum. Technical experts from relevant businesses have donated many hours to assist secondary teachers in the development of CBI materials. Some committees have been more active than others. The schools in La Serena, Curico, La Ligua and Santiago have received the strongest support among the pilots from their respective local businesses.

It is not clear whether businesses will remain as involved in the pilot schools after the CBI curriculum is fully implemented. Under the initial project design it was envisioned that employers naturally would play an active part in the development of the work-study, job placement, and graduate tracking programs. However, the project has made no progress in developing any of these school programs due to an apparent lack of resources. The future role of the local business community in the pilot schools is an important issue that needs to be addressed and one which relates to the broader question of project sustainability.

E. Creation of Clearinghouse in CIDE to Serve as a National Resource Center on TVE

The National Resource Center is a fully functioning clearinghouse of written materials on technical-vocational education. The Center has acquired and catalogued more than 1100 documents, many of them developed under the project. Demand for Center materials is apparently strong based on the large number of requests from secondary schools, regional offices of the MOE, and other interested organizations and the more than 2300 visitors who have gone to the Center seeking information on TVE. A quarterly bulletin reporting on various TVE issues is distributed free to every vocational secondary school in Chile and to more than 5600 individuals from the labor, business, and education communities.

F. Related "Spin-off" Activities of PRODET

The elevation of interest in vocational-technical education among educators and businesses has generated support for introducing other innovative teaching methods to the secondary level TVE system. The most noteworthy of these innovations is applied mathematics, a new, more user-friendly way of teaching the abstract concepts of math to not only vocational students, but to liberal arts students as well. With math a fundamental aspect of nearly every vocational trade, it is critical that vocational

students become competent in the application of mathematical concepts in their particular field of work.

The Binational Center of Chile (BNC), a local NGO which has been administering the U.S. based training of PRODET funded participants, and CIDE have worked closely with the MOE and the Center for Occupational Research and Development (CORD) of Texas, to promote applied math in Chile. Representatives of CIDE and the BNC were introduced to the applied math curriculum during a 1992 study tour of model U.S. programs in secondary vocational education; CORD is one of the leading developers in the U.S. of applied curricula.

Since 1992, the BNC and CORD have begun a small pilot project of their own to implement an applied math curriculum in all six PRODET project pilot schools, as well as four additional schools. In 1993, thirteen teachers as well as a handful of technical representatives from the MOE, CIDE, and administering school corporations received training from CORD in applied mathematics. Since then, the project has had to rely heavily on the goodwill of CORD staff which have agreed to donate student texts, a math video, and teacher instructional guides for all ten schools as well as make four technical visits to the schools between January 1994 and March 1995. To demonstrate their commitment to the project, the pilot schools have agreed to share in the cost of hosting the CORD visitors.

The BNC and CIDE realize, however, that it will take more than the goodwill of CORD to fully implement the curriculum in the ten schools. To that end, the BNC, CIDE, and the Math/MOE unit of the University of Santiago are preparing a proposal for the Fundacion Andes to fund the installation of applied mathematics labs in all ten schools.

PRODET has also attracted the attention of the governments of Argentina and Uruguay which have requested and received assistance from CIDE in the implementation of a CBI curriculum in their own TVE systems. This development signifies that the transfer of technology to CIDE has been successfully made in the area of CBI as the organization is now capable of selling this expertise to other educational systems in the region.

V. IMPLEMENTING RECOMMENDATIONS FROM INITIAL EVALUATION

The progress of CIDE in carrying out the recommendations of the May 1993 evaluation has been mixed; some have been fully implemented, while limited progress has been made on others. The status of implementing each recommendation follows:

For CIDE

1. Limit further training in the U.S. to Competency-Based Instruction methodology, and applied academic instruction. Further, limit participants to teachers, counselors, and directors of the six pilot schools, and corresponding regional representatives of the Ministry of Education. This recommendation is designed to buttress project efforts to sustain and expand knowledge of the CBI teaching methodology in each of the six regions.

Nearly fully implemented. Subject matter of training was limited to CBI and applied math, however several trainees were from non-pilot schools.

2. Develop and implement a strategic plan to convince key leaders of the private and public sectors to adopt nationally the reforms for secondary level TVE being promoted under the project. To succeed, CIDE will have to invest considerable time and energy into promoting the successes of the six pilot schools. A budget should be developed by CIDE for implementing this plan, the costs of which are likely to exceed the balance of remaining project funds.

Partially implemented. No strategic plan was ever developed. However, CIDE has worked aggressively to implement CBI in the six pilot schools and has promoted the benefits of PRODET to the Chilean American Chamber of Commerce (AmCham), the six regional TVE councils, the Ministry of Education, and the Director of TVE schools in Santiago. It is unclear why the CPC, the largest employer federation in Chile, was not also lobbied by CIDE during the past year.

3. Intensify its campaign to secure funding from additional sources in order to continue the work of the project (i.e. complete implementation of pilot schools, maintain clearinghouse, and expand pilot concepts to other schools) after USAID funds are exhausted. The institutionalization of a new approach to technical education as introduced under this project on an experimental basis is a slow process which will require more resources and time than USAID is able to grant.

Minimally implemented. CIDE has been unable to secure the funding necessary to sustain and expand current project activities. This has not been the result of any lack of effort, however. From the outset, CIDE has sought additional project funds from other donors, the MOE, the private sector, Chilean NGOs, the World Bank, and IDB, but few of these requests have proved fruitful.

Other donors, such as the Germans, have been unwilling to commit resources to vocational education unless the German Dual System is integrated into the project. The World Bank began developing a comprehensive secondary level education project under the previous administration, but the new Frei government has not decided whether to endorse the project. Financial support from the private sector has been limited to the two national vocational Olympics, although local businesses have contributed their time and energy to implementing CBI in the pilot schools. Thus far, the Ministry of Education has committed funds to just one pilot school, Liceo A-19 in Santiago, to help finance the development and purchase of CBI based instructional materials. Given this lack of success, CIDE has had to rely on internal resources this year to continue its work in the six pilot schools.

The one source of optimism, however, is a recent pledge by AmCham to provide funding to one or more of the pilot schools.

4. Provide more frequent technical assistance to several pilot schools in order to facilitate the implementation of CBI by the start of the next school year. To that end, CIDE technical staff should increase the frequency of visits to the pilot schools in Curico and La Ligua to at least one visit per week. CIDE staff should maintain weekly visits to the other four schools, except, perhaps to La Serena, which could be reduced to twice monthly because of the availability of local expertise in the name of Oscar Silva. Reducing the frequency of flights to La Serena would also net significant savings in travel costs for the project.

Fully implemented. All pilot schools were visited weekly by CIDE staff except for Curico and Talcahuano which were frequented biweekly. In addition, in January 1994, CIDE held a week-long workshop with 60 teachers from the six pilot schools to help them develop their CBI curriculum and to foster a professional dialogue between school faculty.

5. Provide representatives of the local business community who are members of the school advisory committees with written operating manuals and related training workshops to further educate them in their role as full participants in the improvement of the pilot schools. The lack of participation by business representatives in the implementation of the CBI curricula is often more the result of a lack of "know how" than lack of desire. At the same time, more hands on technical assistance needs to be offered to the business community in a fashion similar to the assistance in CBI development now provided by CIDE to the pilot school teachers.

Fully implemented. In addition to the manual produced by the CPC entitled, "Role of Businesses in the Development of Vocational Students", CIDE has translated a number of U.S. produced manuals regarding the role of school based private sector advisory councils, and disseminated these publications widely throughout Chile. Business representatives have also been invited to CIDE sponsored seminars on the topic of business-technical school relations.

6. Reach out more aggressively to the regional ministries of education and technical universities which are not now active participants in the development of the pilot schools. The involvement of these two institutions in the implementation of CBI in the region is considered vital to the sustainability and expansion of project improvements.

Fully implemented. The project has developed strong linkages with MOE representatives from the regional offices serving all the pilot schools except for the region VII (Curico) office. The MOE representatives have participated in project related seminars sponsored by CIDE and in the development of CBI curriculum in the pilot schools. The reason for the weak linkage in region VII is unknown.

In addition, CIDE has formed strong relationships with the technical universities of Santiago, Valparaiso, and Vina del Mar, inviting professors to several workshops on CBI.

7. Communicate regularly the successes of this project to key officials of the Ministry of Education, business community, and, in particular, to members of the World Bank team designing the new secondary level education project, expected to begin in 1995, to help insure that the elements of the model schools (CBI, applied academics, business oriented advisory committees, work-study program, and orientation, counseling, job placement program and follow-up program) are incorporated into the design of the Bank's project. The development of a close, working relationship with the World Bank Design Team should be an integral part of the strategic plan formulated by CIDE to institutionalize the reforms being promoted under the project.

Partially implemented. CIDE staff have regularly briefed central MOE staff on PRODET. The willingness of the MOE to fund implementation of CBI at the Santiago based pilot school indicates that the MOE is well aware of the positive impact of PRODET. Limited public funds have prevented the MOE from making similar commitments to other pilot schools. Numerous meetings on PRODET have been held between CIDE and representatives of AmCham, the European-Chilean Foundation, and the private sector advisory councils. Amcham has

expressed an interest in assisting the Talcahuano pilot school, but the organization has yet to make any formal commitment of resources. Relations between CIDE and the CPC, while active at the outset of the project, have been relatively dormant for the last year.

Finally, efforts by CIDE to influence the design of the World Bank's proposed Secondary Education Project have been hampered by slow development of the project and an apparent reluctance by the new Frei government to embrace a new, large scale investment in secondary education before completing the current Bank supported basic education project.

8. Consider building from the ground up, a national advisory committee consisting of a select number of representatives from the pilot school committees to promote on a national level the continuing need to improve the entire secondary level TVE system.

Partially implemented. The project has helped to form two regional advisory committees, in regions V and VIII. A national committee was also formed recently with representation from the Ministries of Education and Labor, CPC, and Association of TVE teachers. However, it is not clear what impact the two existing regional committees or national committee are having on the effort to improve TVE in Chile.

9. Accelerate the development of improved programs in work-study, student orientation, student counseling, and job placement and follow-up in each of the pilot schools in order to ensure that these project components are implemented prior to the scheduled December 1993 termination of the project.

Not implemented. The project has not had the resources to move beyond implementing CBI in the six pilot schools, the agreed upon priority of PRODET.

For USAID/Chile

1. Extend the project for as long as practical, given the level of remaining funds, to provide CIDE with additional time to meet project objectives. Most pilot school activities are behind schedule and are not likely to be completed before the current project termination date.

Fully implemented.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

A. Pilot Schools

Strengths

- CBI has been implemented in three pilot schools, and will be implemented in the remaining three schools by 1995
- Private Sector Oriented Advisory Committees have been actively involved in developing CBI curriculum in five of six schools
- Advisory Committees have been established in all 36 corporately administered schools
- Regional Private Sector Councils have been established in two regions, V and VIII

Weaknesses

- The activities of the advisory committees have been limited to implementation of the CBI curriculum; the committees have failed to become involved in the other elements of the pilot schools, such as the work-study, job-placement and student orientation programs
- The pilot school based committees do not seem to have received any guidance from the project regarding their role following implementation of CBI
- The activities of the regional private sector councils and corporate school based advisory committees have not been well articulated by the project

B. Development of Local Expertise in CBI

Strengths

- PRODET has methodically developed a local cadre of expertise in CBI, maximizing the limited amount of available project funds
- CIDE judiciously targeted training in CBI at university professors and technicians of the MOE as well secondary level teachers in order to further institutionalize this knowledge

Weakness

- Scarce project resources were used ineffectively to train more than fifty teachers in technical areas rather than in the CBI teaching methodology

C. Promotion to Key Public and Private Sector Leaders of Need to Improve Secondary Level TVE

Strengths

- CIDE has effectively utilized conferences and printed material to communicate to the business and education community the importance of TVE to the economy of Chile, the problems with the current TVE system, and the benefits accorded to the system by PRODET
- The "Olimpiadas" were extremely successful in showcasing to the business community the technical capabilities of secondary level vocational students

Weakness

- The promotional activities would have benefitted greatly from a well developed social marketing strategy; instead promotion of PRODET was conducted in an ad hoc manner and, consequently, may not have been as effective as it could have been in convincing the business and education leadership to commit resources to reforming secondary level TVE

D. Sustaining and Expanding PRODET's Accomplishments

Strengths

- CBI is expected to be fully implemented in all six pilot schools by the start of the 1995 school year
- Advisory committees have been established in all six pilot schools and are working actively to implement the CBI curriculum in five of them
- PRODET appears to have convinced the MOE about the efficacy of the CBI teaching methodology. This is demonstrated in the MOE's decision to fund implementation of the CBI curriculum in one of the pilot schools (Liceo A-19, Santiago)
- CIDE has successfully leveraged funds from other organizations, such as Fundacion Andes and CORD, to support several project activities. Fundacion Andes financed round-trip travel to the U.S. for many trainees while CORD has subsidized heavily development of an applied mathematics curriculum in ten pilot schools

Weakness

- PRODET has not generated any firm commitment from the MOE, Chilean private sector, the international financial institutions (IFIs) or other donors to replicate the pilot school model on a national scale, making it unlikely that the project will have the wider impact initially envisioned by the project's designers

RECOMMENDATIONS

The effort to introduce CBI curriculum into Technical-Vocational Education in Chile needs to be both reinforced and expanded in order to fulfill the project purpose of creating a more-effective secondary level TVE system. The key constraint to realizing this purpose is the lack of available financial resources.

Accordingly, these recommendations focus on sustaining and building on the momentum and achievements generated by PRODET.

1. CIDE should coordinate with the pilot schools, local and national business leadership, and technical universities, an intensive lobbying campaign aimed at the Ministry of Education and Ministry of finance to help fund the continuation of PRODET in the six pilot schools and other TVE schools in Chile.
2. CIDE should aggressively solicit funds from other donors even if the donors insist on instituting a method of instruction different from CBI as the needs of the current secondary TVE system are so extensive that practically any inversion of capital will be of benefit. For example, although the German Dual System is costly to maintain and, thus, may not be viable on a system-wide basis in Chile, in the more complex technologies, such as automotive mechanics, it may be an effective way to develop those skills.
3. CIDE should seek Ministry of Education approval to have the Technical universities include CBI in their curriculum to further its institutionalization in the Chilean TVE system.
4. CIDE, in cooperation with the pilot schools, their administrative authorities, and associated businesses, should submit a formal proposal to private foundations, national and international, to fund expansion of the pilot school model to other schools. This approach has already been taken by CIDE and the BNC to obtain funding from Fundacion Andes for implementation of applied mathematics in ten pilot schools.
5. CIDE should use the relationship it has established with AmCham to invite a number of the Chamber's U.S. members to speak in organized forums to Chilean business leaders about the

integral role of the U.S. private sector in technical-vocational education.

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FINAL EVALUATION

PROYECTO EDUCACION PARA EL TRABAJO (PRODET)

USAID/Chile

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AID/LAC/RSD/EHR
July 13, 1994

DOCUMENTS PRODUCED UNDER PRODET**Studies:**

- "Role of Secondary and Post-Secondary TVE"
- "The Development of the Skilled Microenterprise"
- "An Alternative Curriculum for TVE"
- "Tax Incentives for Private Investing in TVE"
- "Modern Administration of TVE"
- "Regional Demand for TVE Graduates"
- "Assessment of the Development Needs of Pilot School Teachers"
- "Role of the Teacher in TVE"
- "Rationalizing the Structure of Secondary and Post-Secondary TVE"

Teaching Modules:

- "What is CBI?"
- "How To Individualize Teaching"
- "How To Analyze the Work Process"
- "How To Develop and Use Competency Profiles"
- "How to Develop Learning Objectives"
- "How to Develop an Instruction Manual"
- "How to Evaluate Students Enrolled in CBI Curriculum"
- "Instructions to Administer Instruction"

Manuals:

- "Role of Businesses in the Formation of TVE Students"
- "Instructional Manual for Student Guidance Counselors"

Computer Software:

- "Designing CBI Instructional Modules"

Video:

- "Using Didactic Resources in TVE"