Instruction CoPlanner: A Software Tool to Facilitate Collaborative Resource Teaching

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Abstract: In the present paper the authors describe Instruction CoPlanner, a computer software system designed to facilitate the emerging collaborative role of the special education resource teacher. They then explain the subsystemsof CoPlanner and show how each part of the software Is used to enhance the work of teams of special education support staff. Finally, they present preliminary evaluative feedback and discuss the potential value of Instruction CoPlanner as a system of computer-supported instruction for resource teachers and other "helping" professionals.

Resume: Dans cet article, les auteurs decrivent lesysteme logiciel Instruction CoP/annerconcu pour faciliter Emergence du role collaborafeur des enselgnants dans l'enselgnement specialise. Les auteurs nous expllquent ensultelefonctionnementdusous-systemedeCoP/anner et demontrent comment chaque portion du logicielest utllisee pour etendre la portee du travail des equlpes de soutien en enseignement specialise. Enfin, lls nous font part des retroacitons preliminaires de leur evaluation et discutent de la valeur potentlelle du systeme logfciel comme outll d'enseignement assiste par ordinateur pour les formateurs specialises et pour les autres Intervenants professionnels.

The role of the special education resource teacher in Saskatchewan and elsewhere in North America has changed markedly in recent years. As mainstreaming and, more recently, "inclusion" of students with special needs have become common practice in schools (Gartner & Lipsky, 1987; Sanche & Dahl, 1991; Will, 1986), the role of the resource teacher has evolved from that of instructional "expert" to instructional "collaborator" (Friend & Cook, 1992; Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Idol, 1989; Pugach & Johnson, 1988, 1989). Prior to this change, school-based resource teachers typically withdrew students with special needs from the regular classroom and, after assessing them, provided developmental or remedial instruction in the resource room. This "pull-out" service delivery model has had potentially harmful

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effects on students (Allington & McGill-Franzen, 1989; Gersten & Woodward, 1990). Awareness of these negative effects has given rise to a major paradigm shift to collaborative special education service delivery in the student's mainstream classroom (Sanche&Dahl, 1991;Stainback&Stainback, 1991). Further, resource teachers often provide their services as members of professional teams sharing responsibility for the student's total education program. This change has meant that these teachers now have an even greater need for the problem-solving and interpersonal skills which underpin and facilitate collaborative teaching.

A second major factor beginning to affect the role of the resource teacher is the increasing availability of microcomputers in society generally and in the schools. Computer assisted instruction, which was relatively rare a decade ago, is now common in classrooms, and especially in those in which students with special needs require individualized teaching and support. New "tool" software designed to facilitate the teachers' instructional planning and administrative duties is also now becoming more available (Budin, 1991; Lillie, Hannum, & Stuck, 1989). Competency in the use of the computer in teaching is rapidly becoming a requirement for all teachers (Fulton, 1993;Norvak&Berger, 1991) and especially for resource teachers.

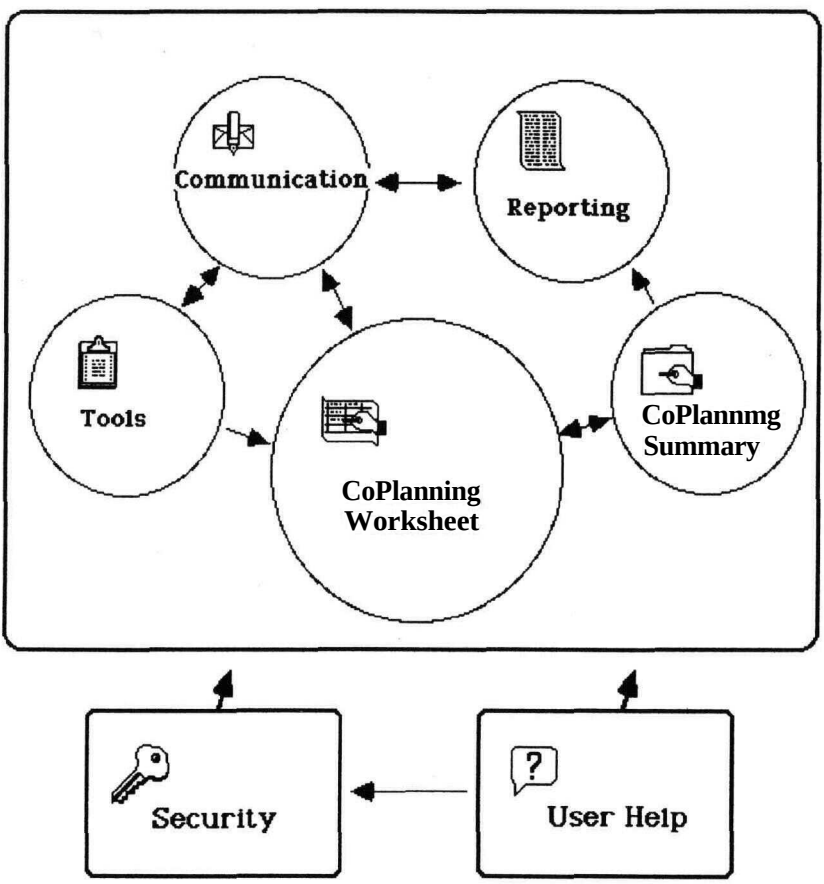
College of Education faculty at the University of Saskatchewan have been involved in the professional preparation of resource teachers for approximately the past two decades. Over the years, past graduates have been surveyed to determine how well prepared they had been for their subsequent resource teaching positions. Through the surveys they were also able to suggest new elements they felt should be added to the program. In response to the last survey, former students recommended that the use of computers be included in the core of the resource teacher education program, and that more content on the basic skills needed to work in a collaborative service delivery model also be incorporated into the courses offered. Our response was to develop Instruction CoPlanner, a software system to support collaborative special education service delivery. The purposes of this paper are to describe Instruction CoPlanner, to show how it is used, and to report evaluative feedback about the potential value of the software.

A Description of Instruction CoPlanner

Instruction CoPlanner is a software package designed to facilitate collaborative instructional planning among teams of educators. It is a tool for teachers rather than for students, and is especially useful when two or more staff members share responsibility for planning and providing individualized instruction for a student with special needs. Embedded questions in the software focus the team on the specific needs of the student and help members to achieve consensus on the need for and the components of a student's instructional program. CoPlanner is also an "open" system, in which users can adapt the ways in which they use the software to accommodate their own teaching styles and preferred approaches to service delivery. Users can modify both the specific areas of intervention and the order in which intervention tasks are pursued.

The software design consists of a set of six highly interactive systems (see Figure 1). Thecollaboratingteamusesthesoftwaretosupportthefollowingtasks:

Figure 1.
Elements of Instruction CoPlanner



1) *Communication:* Frequent, effective communication is fundamental for the success of collaborative special education service delivery. CoPlanner therefore includes an on-line, networkable *mail* system to support communication among members of the collaborating team duringface-to-face meetings as well as between meetings.

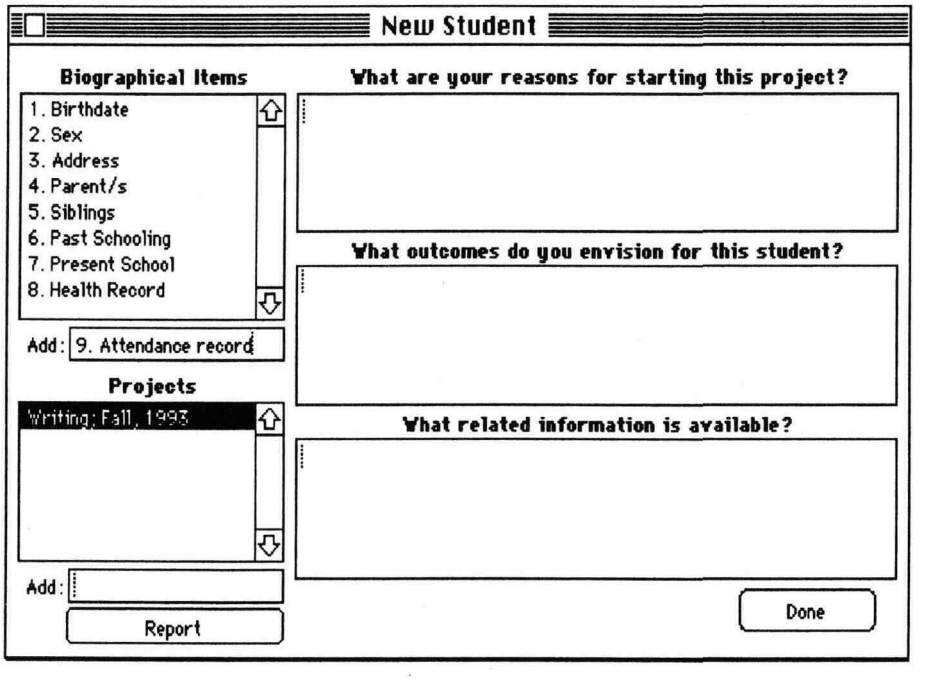
2) *Planning:* Joint planning is required to ensure that all those who share responsibility for a program have a common understanding of the student's educational needs and how those needs are to be met. The *CoPlanning Worksheet* provides space for joint instructional planning and the *CoPlanning Summary* accumulates the on-going results of instructional planning into an electronic record, which can be output as a draft report, ready for editing.
3) *Assessment, Reflection, and Teaching:* Assessment, reflection and teaching are the universal, shared responsibilities of collaborative special education teams. CoPlanner includes a question-driven work space for the collaborating team to use during instructional planning and service delivery. The *CoPlanning Worksheet* is automatically formatted into rows by the computer according to the areas of intervention chosen by the team and into columns according to the four-stage intervention model. Guiding questions for each column of the Worksheet are those which experienced resource teachers or consultants would ask while trying to be thorough and systematic in working with the student. The resulting cells of the CoPlanner Worksheet are active text fields in which planning information may be entered, edited, and printed out. A database of on-line assessment and teaching *Tools* is also available to facilitate the main tasks of the team.
4) *Monitoring:* Keeping track of the student's progress is also a shared responsibility of a collaborative team serving a student with special needs. The software includes question-driven space in the Worksheet to help the team to be thorough and systematic in monitoring student progress. The questions embedded in the software focus the team on the relevant areas of student need identified in the original intervention plan.
5) *Reporting:* Every team responsible for the education of a student with special needs is also expected to report student progress. CoPlanner provides a question-driven *Report Planning* form to assist the team to achieve consensus on the purpose and form of a report. The software also generates a draft report from the *CoPlanner Summary,* which can then be edited on-line and output in any format the team desires. A *Thesaurus* is provided to assist the team to modify terminology used in reports. The thesaurus will quickly scan the text of a draft report for any instances of a target word or term, provide a list of alternatives, and allow replacement of the target word with a preferred alternative.

Instruction CoPlanner is currently programmed in C language for use only on the Macintosh computer. Users with operating System 7 software can take advantage of the *Balloon Helps* which are incorporated throughout CoPlanner, providing context-specific help.

How CoPlanner Works

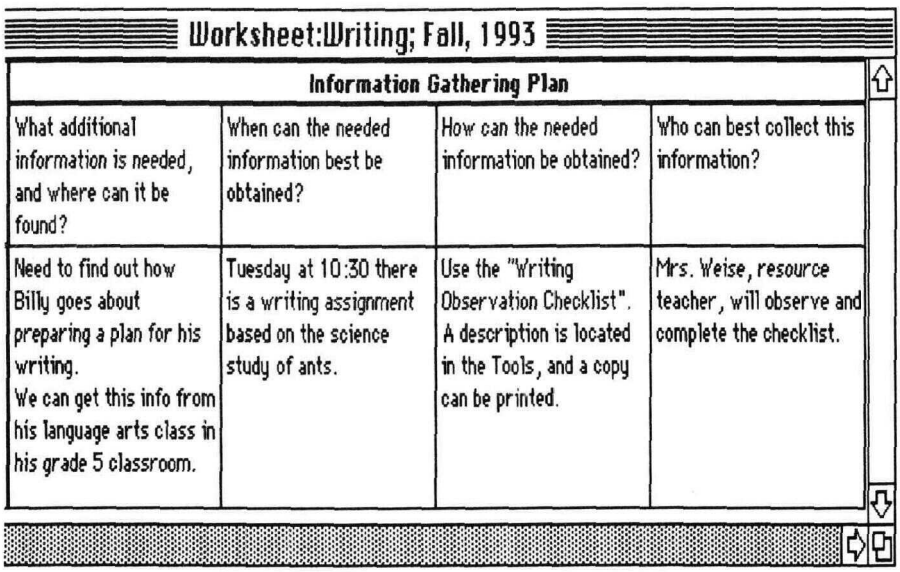
Instruction CoPlanner is used by a collaborating team of educators to initiate a "project" for a student with special needs. A project is a clearly delineated, joint plan for addressing a student's specific educational needs. Each project has a specific curriculum focus, time-frame, and a group of educators responsible for serving the student. The software is used by the team at its first meeting to develop a common set of objectives for the project, to achieve consensus on the desired outcomes of the project, and to record biographical and other educationally relevant information about the student. During this first meeting, one educator (usually the resource teacher) enters the substance of the group's planningdecisions into the student's project file (See Figure 2). Guidingquestions in the software keep the group focused on the task at hand, and help them be

Figure 2.
Beginning a New Instruction CoPlanner Project for a *Student.*



thorough in their initial planning. Often at this first meeting the team will also use the Information Gathering section of the CoPlanner Worksheet (see Figure 3) to plan any further assessment required before detailed instructional planning

Figure 3.
Completing the Information Gathering Part of the CoPlanner Worksheet.



is begun. The plans developed at this first meeting can be printed out at the end of the meeting, and distributed with each team member's responsibilities highlighted.

At all subsequent meetings, the team uses the Reflection, Teaching, Monitoring, and Reporting features of CoPlanner to support them in carrying out the project. Between face-to-face meetings, members of the team use the Mail system to maintain communication, record observational data, note student progress, leave preliminary reports, or make teaching suggestions. In those ways, CoPlanner functions as a support system for joint planning and communication among members of the team.

Preliminary Evaluative Feedback on CoPlanner

Instruction CoPlanner was conceptualized and developed as a three year project (1990-1993), with both formative and summative evaluation plans included. In May and June, 1992, a two month formative evaluation of the software

was carried out at five schools in Saskatoon, with the resulting information used to enhance the initial version of CoPlanner and the user's manual. The revised version of CoPlanner was then placed in more than twenty field sites during October, 1992 for the duration of the 1992-93 school year. A combined formative and summative evaluation from this extended field testing will be completed in late 1993.

During the past year, CoPlanner has been shown to experienced resource and regular classroom teachers at "Showcase "93", the 60th Anniversary conference of the Saskatchewan Teachers' Federation, the Teacher Education Division and Technology and Media Division conferences of the Council for Exceptional Children in the United States, and at regional meetings of special education teachers and administrators in the Perth area of Western Australia. At each conference, all of the features of the CoPlanner software were demonstrated using a Macintosh PowerBook, an LCD panel, and a worked example. Following the presentations, the project team used the Conference Participant Feedback Checklist to obtain ratings of the potential value of each of the components of CoPlanner. Respondents used a six-point scale ranging from 1 = "Not Valuable", to 6= "Very Valuable", to rate each of the 13 components of CoPlanner and to rate two general items concerning the overall potential of Instruction CoPlanner. Seventy-one respondents returned completed Checklists, including biographical information about their professional status as teachers.

Table 1 shows mean scores for the 71 respondents on all items of the checklist. Teachers rated the potential of all elements of CoPlanner very highly. Only the Thesaurus was rated marginally below 5 on the six-point scale. The features rated most highly were the potential for Networking with CoPlanner, the on-line Help features, the overall potential value of computers in educational planning, and the potential overall value of CoPlanner as an instructional support system. CoPlanner's emphasis on professional collaboration and its Reporting features were also rated above 5 on the 6 point scale.

In addition to this preliminary evaluation of the potential of CoPlanner, the project team submitted the software and manual for adjudication at the June, 1993, conference of the Association for Media and Technology in Education in Canada (AMTEC). CoPlanner was gran ted an Award Of Merit. Both experienced teachers and the computer software specialists appear to recognize the potential value of CoPlanner as instructional support software.

CONCLUSIONS AND DISCUSSION

Instruction CoPlanner is a new software tool to facilitate collaborative resource teaching. It was designed specifically to support initial joint planning by teams of special educators and on-going communication during subsequent service delivery. In addition, it provides on-line access to assessment, teaching and reporting tools needed by these teams. Above all, it is an "open" instructional support system which can be easily modified to include the curriculum structure,

TABLE 1
Conference Participants' Mean Ratings of the Potential Value of Instruction CoPlanner: N=71 Experienced Teachers

Item Rated	Rating (not valuable 1 2 3 4 5 6 very valuable)	Mean
1. The CoPlanning Worksheet feature	1 2 3 4 5 6	(5.1)
2. The CoPlanning Summary feature	1 2 3 4 5 6	(5.2)
3. The on-line Tools feature	1 2 3 4 5 6	(5.1)
4. The internal Mail system	1 2 3 4 5 6	(5.0)
5. The Thesaurus	1 2 3 4 5 6	(4.8)
6. The Report Planner	1 2 3 4 5 6	(5.4)
7. The Report Generator feature	1 2 3 4 5 6	(5.2)
8. The emphasis on Professional Collaboration	1 2 3 4 5 •6	(5.4)
9. The potential for Computer Networking	1 2 3 4 5 6	(5.5)
10. The Private Notes feature	1 2 3 4 5 6	(5.0)
11. The Security feature	1 2 3 4 5 6	(5.3)
12. The on-line Extended Help feature	1 2 3 4 5 6	(5.5)
13. The Balloon Help feature	1 2 3 4 5 6	(5.5)
14. The use of computers in educational planning	1 2 3 4 5 • 6	(5.5)
15. The overall value of Instruction CoPlanner as an instructional support system	1 2 3 4 5 • 6	(5.3)

assessment and teaching tools, and modes of service delivery preferred by the user. It is intended to be used as an integrated instructional support system.

Whenever two or more professionals share responsibility for the education of a specific student, there is potential for discontinuity in planning and service delivery. The greater the number of participants and the more diverse their specialties (for example; teaching, resource teaching, educational psychology, speech therapy, social work) the greater the need for collaboration. Using a question-driven computer program such as CoPlanner helps the team achieve consensus on the specific needs of a student, the details of the developmental or remedial program, and the individual responsibilities of each team member in carrying out the program. As a further benefit in using this approach to collaboration, the computer captures an enduring record of the planning, teaching, monitoring, and reporting activities of the group.

In order for collaborative planning among educators to yield the best possible program for the student with special needs, there must be shared responsibility for participation and decision making (Friend & Cook, 1992). When one or two members dominate teamwork, the resulting program tends to reflect their specific thinking and their professional orientations and to be less complete than it might if the input of all team members leads to consensus decisions. "Undominated dialogue" (Harrington, 1993; Sproull & Kiesler, 1991; Strike, 1991) leads to a greater sharing of ideas and professional expertise and therefore, presumably, to better planned programs. As one of the conference participants who had seen CoPlanner for the first time said, "What I like about it is that the question-driven software focuses all members of the team on the needs of the student and away from the issue of who should have the most say in planning the program." This conference delegate was highlighting one of the primary purposes for developing CoPlanner. In addition, the communication system will allow ongoing electronic conferencing, which Sproull and Kiesler (1991) have demonstrated to be at least as productive as face-to-face meetings.

Instruction CoPlanner has been developed to provide support for special educators, classroom teachers, consultants, parents, and others who engage in collaborative teamwork to provide effective instruction for students with special needs. Preliminary feedback from teachers who participated in extensive demonstrations of this new software tool suggests that its design is consistent with the needs of these professionals as they engage in collaborative instructional planning. The AMTEC Award also provides preliminary evidence of the technical quality of the software. Extensive and intensive evaluation data from field test sites will provide a detailed picture of CoPlanner's usefulness in a variety of applied situations. We anticipate that this field data will confirm the value of Instruction CoPlanner as a software tool to support collaborative resource teaching.

REFERENCES

American Association of Colleges for Teacher Education (1987). *Teaching teachers: Facts and figures.* Washington, DC: AACTE.

Allington, R., & McGill-Franzen, A. (1990). School response to reading failure: Instruction for Chapter 1 and special education students in grades two, four, and eight. *Elementary School Journal, 79,* 529-542.

Budin,H.R. (1991). Technology and the teacher's role. *Computers in the Schools, 8,* 15-26.

Carr, L., Norvak, D., & Berger, C. (1992). Integrating technology into preservice education: Determining the necessary resources. *Journal of Computing in Teacher Education, 9,* 20-24.

Friend, M., & Cook, L. (1992). *Interactions: Collaboration skills for school professionals.* New York: Longman.

Fulton, K. (1993). Teaching matters: The role of technology in education. In D. Carey, R. Carey, D. A. Willis, & J. Willis (Eds.), *Technology and Teacher Education Annual 1993* (pp. 1-6). Charlottesville, VA: Association for the Advancement of Computing in Education.

Gartner, A., & Lipsky, D. K. (1987). Beyond special education: Toward a quality system for all students. *Harvard Educational Review, 57,* 367-395.

Gersten, R., & Woodward, J. (1990). Rethinking the regular education initiative: Focus on the classroom teacher. *Remedial and Special Education, 11,* 7-16.

Giangreco, M., Dennis, R., Cloninger, C., Edelman, S., & Schattman, R. (1993). Tve counted Jon": Transformational experiences of teachers educating students with disabilities. *Exceptional Children, 59,* 359-372.

Harrington, H. L. (1993). The essence of technology and the education of teachers. *Journal of Teacher Education, 44,* 5-15.

Idol, L. (1989). The resource/consulting teacher: An integrated model of service delivery. *Remedial and Special Education, 10,* 38-48.

Lillie, D. L., Hannum, W. H., & Stuck, G. B. (1989). *Computers and effective instruction.* White Plains, NY: Longman.

Norvak, D. L, & Berger, C.F. (1991). Integrating technology into preservice education: Michigan's response. *Computers in the Schools, 8,* 89-101.

Pugach, M. C., & Johnson, L. J. (1988). Rethinking the relationship between consultation and collaborative problem solving. *Focus on Exceptional Children, 21,* 1-8.

Pugach, M. C., & Johnson, L. J. (1989). The challenge of implementing collaboration between general and special education. *Exceptional Children, 56,*232-235.

Sanche, R., & Dahl, H. (1991). Progress in Saskatchewan toward integration of students with disabilities. *Canadian Journal ofSpecial Education, 7,*16-31.

Sproull, L., & Kiesler, S. (1991) *Connections: New ways of working in the networked organization.* Cambridge, MA: MIT Press.

Strike, K. (1991). The moral role of schooling in a liberal democratic society. In G. Grant (Ed.). *Review of Research in Education, (pp.* 413-483). Washington, B.C.: AERA.

Stainback, W., & Stainback, S. (1991). *Support networks for inclusive schooling*. Baltimore: Paul H. Brookes.

Will, M. C. (1986). Educating children with learning problems: A shared responsibility. *Exceptional Children, 52,* 411-416.

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